FINANCIAL PERFORMANCE OF DR.REDDY'S LABORATORIES -USING Z-SCORE MODEL

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ABSTRACT

The stake holders, bankers, financial institutions, investors, government, NGOs etc have been focusing on the success and survival of the business with whom they are dealing. Therefore, monitoring the financial health of a company is necessary, and it can be done by continuous evaluation of its sales and profit. In this research paper an attempt is made to predict the financial performance of Dr. Reddy's Laboratories ltd for five years 2008-09 to 2012-13 by using Altman's Z-Score model. The Z-Score value for all the years under study exceeds the value of 3.0 signifying that performance of its financial health.

Key Words: *Financial Health, Z-score Model, Financial performance.*

Introduction

Sustaining existence of the business in the modern world is possible only when it has sufficient finance, apart from other things. The financial requirements of a business must be sufficient to meet long term commitment it needs permanent capital, and for short term commitment it needs working capital. The performance of the business is judged by its financial statements, which throws light on the operational efficiency and financial position of the company. Due to intense competition, among the business community everyone is doing something better than the other to capture the business, there for monitoring the financial health of the company is necessary and it can be done by continuous evaluation of its sales and profits. Growth of the firm is not sufficient today, it is necessary to yard stick the efficiency of utilization of capital and assets, return to shareholders as well as predicting financial distress. The prediction and prevention of financial distress is one of the major factors, which will help to avoid bankruptcy.

Financial statement analysis is one of the methods that can be used in predicting financial distress which focuses on financial variables. An attempt has been made in the present study to have an insight into the examination of financial health of Dr Reddys laboratories.

Review of Literature

Altman I. Edward (1968) was the classical Multiple differentiate Analysis technique with five financial ratios is used for predicting the risk of failure and developed a model (Z score) to find a bankruptcy prediction model based on a sample composed of 66 manufacturing companies with 33 companies in each of two matched-pair groups (33 publicly-traded manufacturing

bankrupt companies between 1946 and 1965 and matched them to 33 firms on a random basis for a stratified sample), which is built out of the five weighted financial ratios.

Praveen sivalogeswaran (2005) applied Z score modal to examine the financial health of seed industry in india.The study was conducted for six private sector seed companies. Through the result it was concluded that the seed industries were in the financially healthy zone during the period under consideration.

S.Suriyamurthi and velavaran (2010) their article on measuring financial health of E.I.D Parry sugar Limited by using of Altman's Z score modal. They have covered the areas of sugar-comprising of sugar alcohol, co-generation etc, Bio-pesticides, nutraceutical's.through this modal they have concluded the financial health of E.I.D Parry sugar limited was good (healthy) and financial viability is well.

D.Maheswara Reddy and others (2005) conducted a study on pharmaceutical companies to predict the financial health of two selected sample pharmacy companies Aurobindo Datong Bio-pharmacy ltd and RANBAXY Laboraries Ltd for five years .through that it was concluded that both companies overall financial health was good.

S.christina sheela and others (2012) evaluating financial health of pharmaceutical industry in India through Z Score modal with special reference to cipla, Dr.Reddy's laboratories and Ranbaxy laboratories ltd.the study concluded that cipla and Dr Reddy were in too healthy zone and Ranbaxy was in healthy zone. Its financial viability was considered healthy and the failure in the situation was uncertain to predict.

Meherji Duvuuri (2012) to predict the financial health of Nagarjuna Fertilizes and Chemicals ltd by using Z model which is developed by Edward Altmam,by considering 10 years data and through that result was concluded that the company had successfully entered the grey area and has been moving towards safe zone.

Objectives of the study

The major objective of the study is to estimate the financial performance based on certain ratios.

Research methodology

The present study is based on secondary source of data which has been obtained from the web sites of the company and other web sites. The period of the study is 2008-09 to 2012-2013. The five ratios from profit and loss account of concerned years, i.e. 1.(X_1) Working Capital/Total assets, 2.(X_2) Retained Earnings/total assets 3.(X_3) Earnings before Interest and

Taxes/Total Assets,4.(X4) Market Value of Equity/Book value of Total Liabilities,5.(X_5)Sales/Total Assets.

'Z' Score

About 40 years ago, Edward I. Altman, a Financial Economist at New York University's Graduate School of Business, developed a model for predicting the likelihood that a company would go bankrupt. This model uses five financial ratios that combine in a specific way to produce a single number. This number called the Z score is a general measure of corporate financial health. Based on Multiple Discriminate Analyses (MDA), the model predicts a company's financial health based on a discriminate function of the form.

$$\mathbf{Z = 0.012X_1+0.014X_2+0.033X_3+0.006X_4+0.999X}$$

Where:

X_1=Working Capital/Total assets

X_2=Retained Earnings/total assets

X_3=Earnings before Interest and Taxes/Total Assets

X_4=Market Value of Equity/Book value of Total Liabilities

X_5=Sales/Total Assets

The Z-Score model (developed in 1968) was based on a sample composed of 66 manufacturing companies with 33 companies in each of two matched-pair groups. Altman subsequently developed a revised Z-Score model (with revised coefficients and Z-Score cut-offs) which dropped variables X_4 and X_5 (above) and replaced them with a new variable X_4 = net worth (book value)/total liabilities. The X_5 variable was allegedly dropped to minimize potential industry effects related to asset turnover

'Z' Score Ingredients

The Z score is calculated by multiplying the following accounting ratios, which is efficient in predicting bankruptcy.

1. **X_1 (Working Capital / Total Assets) =** This ratio expresses of the liquidity position of the company towards the total capitalization. Working capital is defined as the difference between current assets and current liabilities. Liquidity and size characteristics are explicitly considered.

2. **X_2 (Retained Earning / Total Assets) =** It indicates the amount reinvested, the earnings or losses, which reflects the extents of company's leverage. In other words, the extent to assets, which have been paid for by company profits. Those firms with high RE relative to TA have financed their assets through retention of profits and have not utilized as much debt. It also highlights either the use of internally generated funds for growth (low risk capital) Vs OPM (other people money) – high risk capital. This is measure of cumulative profitability overtime and leverage as well.

3. **X_3 (EBIT / Total Assets) =** It is the measure of the company's operating performance and also it indicates the earning power of the company. In addition, this is a measure of the productivity of the firm's assets, independent of any tax or leverage factors. Since a firm's ultimate existence is based on the earning power of its assets, this ratio appears to be particularly appropriate for studies dealing with credit risk.

4. **X_4 (Market Value of Equity / Book Value of Total Liabilities) =** It is the measure of the long-term solvency of a company. It is reciprocal of the familiar debt-equity ratio. Equity is measured by the combined market value of all shares. While debt includes both current and long term liabilities. This measure shows how much assets of an enterprise can decline in value of an enterprise can decline in value before the liabilities exceed the assets and the concern becomes insolvent.

5. **X_5 (Sales / Total Assets) =** This is a standard turnover measure. Unfortunately, it varies greatly from one industry to another. In addition to this, it will reveal the sales generating capacity of the company's assets and also measure of management's capacity to deal with competitive conditions

Guidelines: Altman Guidelines for Healthy Zone

With the help following guide lines of Altman, measuring of Dr Reddy's laboratories during the study period

The Modified Z Model for Indian Context by Prof. K.B.Mehata

The Z modal suitably modified by prof.K.B.Mehata for the Indian context is as follows.

$$Z = 0.717X1 + 0.845X2 + 3.107X3 + 0.42X4 + 0.995X5$$

Here,

1. X_1 = Working Capital / Total Assets
2. X_2 = Retained Earning / Total Assets
3. X_3 = EBIT / Total Assets
4. X_4= Book Value of Equity / Book Value of Total Liabilities
5. X_5= Sales / Total Assets

According to the modified Z score the following three situations arises

1. If Z score is < 1.2 then it falls in Bankruptcy Zone. Its Failure is certain.
2. If Z score is between 1.2 and 2.9 then it falls in Grey Zone. At this stage failure is uncertain to predict.
3. If Z score is > 2.9 then it falls in Safe Zone. It Indicates good financial health of A Company.

Measuring financial performance

In this section the financial performance of the selected company has been measured by calculating certain ratios has been presented below.

Table: 1 Working capital, total assets and ratios (Rs in crore)

Year	Working capital	Total Assets	Ratio(In Times)
2008-09	2412.30	5,899.40	0.409
2009-10	1764.10	6,477.80	0.272
2010-11	2741.60	7,465.00	0.367
2011-12	3239.10	8,251.20	0.393
2012-13	4183.10	9,372.50	0.446

Source: Balensheets of the company for the year 2008-13

Table: 2 Retained Earnings, total assets and ratios ((Rs in crore)

Year	Retained Earnings	Total Assets	Ratio(In Times)
2008-09	2,095.20	5,899.40	0.36
2009-10	2,638.70	6,477.80	0.41
2010-11	3,738.70	7,465.00	0.50
2011-12	3,780.90	8,251.20	0.46
2012-13	4,615.60	9,372.50	0.49

Source: Balensheets of the company for the year 2008-13

Table: 3 EBIT, total assets and ratio (Rs in crore)

Year	EBIT	Total Assets	Ratio(In Times)
2008-09	756.80	5,899.40	0.13
2009-10	1,100.70	6,477.80	0.17
2010-11	1,061.40	7,465.00	0.14
2011-12	1,328.10	8,251.20	0.16
2012-13	1,814.60	9,372.50	0.19

Source: Balensheets and profit&loss accounts of the company for the year 2008-13

TABLE: 4 Value of equity, Total Debits and ratios (Rs in crore)

Year	Value of Equity	Total Debit	Ratio(In Times)
2008-09	5259.10	640.3	8.21
2009-10	5,914.60	563.2	10.50
2010-11	6,020.20	1,444.80	4.17
2011-12	6,717.80	1,533.40	4.38
2012-13	7,783.40	1,589.10	4.89

Source: Balensheets of the company for the year 2008-13

TABLE: 5 Sales, Total Assets and ratios (Rs in crore)

Year	Sales	Total Assets	Ratio(In Times)
2008-09	3,999.50	5,899.40	0.68
2009-10	4,395.60	6,477.80	0.68
2010-11	5,188.50	7,465.00	0.70
2011-12	6,686.30	8,251.20	0.81
2012-13	8,434.00	9,372.50	0.99

Source: Balensheets of the company for the year 2008-1

Table: 6 Values of "Z"-Score ingredients

Ingredients	Financial ratios	2008-09	2009-10	20010-11	2011-12	2012-13
X1	Working Capital/Total Assets	0.409	0.272	0.367	0.392	0.446
X2	Retained Earnings/ Total Assets	0.36	0.41	0.50	0.46	0.49
X3	EBIT/ Total Assets	0.13	0.17	0.14	0.16	0.19
X4	Value of Equity/ Total Assets	8.21	10.50	4.16	4.38	4.89
X5	Sales/Total Assets	0.68	0.68	0.70	0.81	0.99

Findings:

Net Working Capital to Total Assets (X_1)

The ratio of working capital to total assets is calculated in table-1 as X_1.the working capital has increased during the study period 2010 onwards total assets are increasing year by year. That shows the company is concentrating on the investments in fixed assets.

Retained Earnings to Total Assets(X_2)

It is clear in the table-2 that the ratios are fluctuating through the study period. It is highest in the year 2010-11 at 0.50 and lowest in the year 2008-09 at 0.36 an an average it is 0.44.Which reflects that the company is financing more capital expenditure through the borrowings rather than retained earnings, but it is a healthy symptom that it is increasing entire years.

EBIT to Total assets(X3)

This ratio indicates the operating performance and productivity of the assets. EBIT to total assets were fluctuating every year during the study period, and not at the same level proportion. It was between 0.13 to 0.19which is seen in table-3, it indicates that the company's inability to operate the fixed assets properly.

Book Value of Equity to Book Value of Debit S(X4)

This ratio is used to ascertain the soundness of the long term financial policies. The company having 1:1 equity-debit mix is considered quit good. Excessive debit tends to cause insolvency. If debit is more than equity it will reduce the profits of the company, despite increase the profitability of the share holders. Equity proportion is an an average 6.43, it may concluded that the financial position of is too good.

Sales to Total Assets(X5)

Sales revenue plays a vital role in overall performance of the companies because more or less depends on sales revenue. Sales to total assets ratio measure the power of the assets in generating the sales. Higher ratio indicates the better performance and poor ratio indicates the poor financial management of the companies in the optimum utilization of its assets in generating the sales revenue. The ratio varies from companies to companies, this information can seen in table-5, it is observed that the average ratio of sales to total assets is 0.772, based on this information it is clear that the company is still having opportunity to improve revenue through the sales. It is suggested that the company has to take appropriate steps in the optimum utilization of its assets in generating more sales revenue.

Conclusion

On the bases of the results of all the financial ratios, it can be concluded that the value of Z score ingredients are in excess of the standard Z score value. Therefore the financial health of Dr Reddy laboratories limited Demonstrating Outstanding Performance during the Period under Study.

References

1. *Altman (1968),"Financial Ratio, Discriminate Analysis and the Prediction of Corporate Bankruptcy", Journal of Finance, 23(4): 589-609.*
2. *Dr. Maheswar Reddy and Dr. C.R.Reddy (2011), "Application of Z score analysis in evaluating the financial health of pharmaceutical companies-A Case study" International journal of research in commerce &management vol.2.issue no 5.*
3. *Praveen silalogeswaraan(2012),"Assessing the Financial Health of Seed industry in India – An Application of Altman's Model" International journal's research journal of economics and business studies vol.1,no.9.*
4. *Christinasheela and Dr.k.kartikeyan (2012). "Evaluating Financial Health of Pharmaceutical Industry in India Through 'z' Score Modal" International Journal of Social Sciences & Interdispencery Research vol.5.*
5. *S.Suriyamurthi and velavaran (2010) "Measuring Financial Health of E.D.IParry Sugar Limited Using 'z' Score Modal A-Study "Indian journal of finance.*
6. *Meherji Duvuuri (2012) "Financial Health of NFCL-A Z-Modal Approach" International Journal of Research in Management & Technology vol.2, No.1*