

FINANCIAL HEALTH OF SELECTED FERTILIZER COMPANIES IN INDIA – A Z-MODEL APPROACH

Ambika.T¹,

Ph.D Research Scholar,
PG and Research Department of Commerce,
Kaamadhenu Arts and Science College,
Sathyamangalam-638503.

Sengottaiyan .A²

Assistant Professor and Head,
PG and Research Department of Commerce,
Kaamadhenu Arts and Science College,
Sathyamangalam-638503.

Abstract

The Financial Statements indicate what happened during a particular year for which they concern. All the stakeholders are interested to know the financial position and thereby the strength of a company. Most of their concern is the success and solvency position of the company. Several tools were developed to diagnose the financial strength of a Company based on the Financial Statements. Ratio Analysis, Common Size Statements, Comparative Statement Analysis and Decision Theory etc., serve this purpose but they indicate the absolute results which are the parameters for the present position of the company. They failed to predict the future. The “Z Model” which is developed by Edward Altman, Professor in Finance at New York University predicts the future by measuring the financial health.

Key words: Financial statement, Stakeholders, Financial Strength, Solvency.

Introduction

India is basically an agricultural country in which economy depends largely upon its agrarian produce. Indian fertilizer industry has a tremendous scope in and outside the country as it is one of the allied parts of agriculture. Today, Indian Fertilizer Industry has been developing in terms of technology. Indian manufacturers are adopting advanced manufacturing processes to prepare innovative new products for Indian agriculture. India has been entitled as the third largest producer and exporter of nitrogenous fertilizer. In the present paper, an attempt has been made to measure the financial health of Selected Fertilizer companies in India by using the Z-Model, based on the past 13 years Financial Statements.

Review of Literature

Mansur A. Mulla (2002) in their research in ‘Use of ‘Z’ score analysis for evaluation of financial health of textile mills - A case study’ has been made an insight into the financial health of Shri Venkatesh Co-operative Textile Mills Ltd., Arunageri of Dharwad District. The ‘Z’ score analysis has been applied to evaluate the general trend in financial health of a firm over a period by using many of the accounting ratios. From the study it was concluded that the textiles mill under study was just on the verge of financial collapse. On the one hand, current assets declined because of the

negative profitability performance, whereas on the other hand, the current liabilities were on the increase because of poor liquidity performance of the mill.

Dheenadhayalan.V and Devianbarasi (2009) made "A Study on Financial Health of Co-operative Sugar Mills - A Case of NPKRR Co-Operative Sugar Mills Ltd". In this study they have used 'Z' score model. They have concluded that the financial health of co-operative sugar mills remained sick and was not healthy. They had suggested that those mills should take proactive approach in order to improve their financial performance in future.

A.Sivanandam and R.Angamuthu (2012) examined the "Financial Healthiness of Select Cement Industrial Units in Tamilnadu". The present study covered a period of 10 years from 2000-01 to 2009-10. The modified Altman's Z score model was used. The 'Z' value in all the years was negative (2001-10). Madras Cement was financially health where as Chettinad and Dalmia Cements were neither in distress nor was healthy, while India cement in financial distress during the period. Due to presence of TANCEM, the financial healthiness of the select cement companies was found to be in financially distress for most of the years but become unpredictable overall during the period. Financial healthiness of Madras Cement was better among units considered for the study.

Dr.A.Selvaraj and H.Chandra (2013) examined "Financial Health of the Indian Steel Companies". Financial health of selected steel companies with reference to liquidity, leverage, activity and profitability was identified with 'Z' score. On the basis of above analysis, it was clear that the financial health of small size steel companies were not satisfactory during the study period (Mean Z score = 1.65, in between 1.23 & 2.99). On the other hand, the medium and large size steel companies were in distress zone on an average over the period. It reveals that the financial health of selected steel companies was not in the safe zone during the study period. It was found that this may be due to failure to earn adequate surplus to meet non-operating activities and increase in EBIT did not match total assets and increased debt equity mix.

Objectives of the Study

1. To evaluate the financial efficiency and performance of the company.
2. To forecast financial health of the company.

Methodology

The research approach is descriptive and analytical nature. The study is mainly based on secondary data are collected as per requirements of the study. The secondary data is used for evaluation of financial performance appraisal. Secondary data is taken from CMIE, Prowess Database and published annual reports of the Fertilizer companies. In addition to that, financial literature and published articles on the related aspects are also considered. Other information related to the industry are collected from the Economic Times, Financial Express, Business Standard, RBI Bulletin, periodicals, journals and various documents of the companies.

Sampling Design

The study covers two major sectors engaged in manufacturing fertilizers viz. public and private. From the public sector undertakings, there are nine of which six companies were selected and included for the study. In the private sector, there are 18 fertilizer units, out of which eight

undertakings are selected for the study based on the availability of financial report and information. The details of the sample selection are

The study covers two major sectors engaged in manufacturing fertilizers viz. public and private. From the public sector undertakings, there are nine of which six companies viz., Madras Fertilizers Limited, Fertilizers and Chemical Travancore Ltd. Rashtriya Chemicals and Fertilizers Limited, National Fertilizers Limited, Steel Authority of India, and Neyveli lignite Corporation Limited. were selected and included for the study.

In the private sector, there are 18 fertilizer units, out of which eight undertakings viz., Southern Petrochemical Industries Corporate Limited (SPIC), Tuticorin Alkali Chemicals and Fertilizers Limited (TAC), Basant Agro Tech(India) Limited, Deepak fertilizer and Petrochemicals Corporation Limited, Coromandal Fertilizers Limited, Gujarat state fertilizers & Chemicals Limited, Mangalore chemicals & Fertilizers Limited, and Zuari Fertilizers and Chemicals Limited, are selected for the study based on the availability of financial report and information.

Tools of Analysis

In the course of analysis, Mean and Altman's Z Score discriminate models have been applied.

Limitations of the study

1. The study is limited to thirteen years from 1999 to 2012 only and is purely related to the Fertilizer industries in India.
2. Analysis of the study is based on financial data collected from CMIE Prowess Package. The quality of the study depends purely upon the accuracy, reliability and quality of secondary data.
3. The firms chosen are restricted to 14 companies due to limitations such as lack of continuous listing, non-availability of data pertaining to those firms in the data source.

Theoretical frameworks

Altman's Multiple Discriminate Analysis Model (Z score Analysis)

At the age of 40, 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, named as Z-score which is a general measure of corporate financial health. 20 Based on Multiple Discriminate Analysis (MDA), the model predicts a company's financial health based on a discriminate function of the company.

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

Where:

Z	=	Discriminant function score of a firm
X1	=	Working Capital / Total Assets
X2	=	Retained Earnings / Total Assets
X3	=	Earnings before interest and taxes / Total Assets

X4 = Market Value of Equity / Book value of Total Liabilities or Reciprocal of Debt-Equity Ratio

X5 = Sales / Total Assets.

Data Analysis and Interpretation

Financial Strength of the Selected Fertilizers Companies in India

Table 1.1

Z Score of Selected Public and Private sector Fertilizers Companies in India

$$(Z = 0.012X1 + 0.014X2 + 0.033X3 + 0.006X4 + 1.0X5)$$

Year	Public Sector						Private Sector								Industry Average
	FCTL	RCFL	NFL	SAIL	NLC	BATL	TACFL	GFCL	SPICL	MCFL	DFPCL	ZFCL	CIFL		
1999-00	0.69	1.19	1.16	1.13	0.72	0.23	1.71	0.89	0.63	12.21	2.45	1.08	1.45	1.67	1.94
2000-01	1.52	1.45	1.06	1.23	0.77	0.23	1.46	0.82	0.71	9.50	2.61	0.94	1.88	1.42	1.83
2001-02	1.46	1.19	1.16	1.56	0.83	0.30	1.24	0.95	0.83	7.63	1.90	1.13	1.70	2.05	1.71
2002-03	1.54	1.30	1.14	2.08	1.14	0.40	1.24	0.87	0.93	4.58	1.23	1.14	1.42	1.42	1.46
2003-04	0.21	1.18	1.60	2.02	1.60	0.37	1.57	1.27	0.99	4.33	1.31	0.80	1.32	3.09	1.55
2004-05	1.95	1.70	1.70	2.83	1.82	.36	.51	1.72	1.29	4.55	1.85	0.80	1.88	2.47	1.89
2005-06	2.12	2.13	.72	2.46	1.70	.25	.01	1.52	1.29	6.00	2.04	0.77	1.81	2.27	2.01
2006-07	3.26	1.95	1.48	2.30	1.62	.23	.86	1.02	1.44	4.78	2.47	0.88	1.47	2.06	1.92
2007-08	3.75	1.23	1.87	2.16	1.56	.27	.81	1.14	1.77	1.96	2.81	1.02	1.57	2.24	1.80
2008-09	4.69	1.96	2.72	2.98	1.25	.26	.70	0.27	2.64	0.48	4.07	1.02	4.89	3.48	2.32
2009-10	4.38	1.65	1.80	2.59	0.83	.30	.55	0.20	1.44	0.79	3.19	0.79	2.00	2.00	1.68
2010-11	5.70	2.26	2.23	.55	0.76	.27	.50	3.49	1.50	2.58	3.60	0.87	2.54	2.34	2.30
2011-12	4.92	3.53	1.94	1.55	0.84	0.33	1.85	-3.15	1.31	1.33	5.37	1.19	2.17	2.05	1.80
Mean	2.78	1.75	1.66	2.11	1.19	0.29	1.62	0.85	1.29	4.67	2.68	0.96	2.01	2.19	

Source: Computed from Annual report of respective companies

The Altman Z-score is a combination of five weighted business ratios that is used to estimate the likelihood of financial distress. The following table shows the Altman's z score analysis of selected public and private sector fertilizer companies in India for the period of 1999-00 to 2011-12.

From the above table it is understood about the financial strength of the selected public and private sector companies in India for the period of 13 years between 1999-00 and 2011-12. In considering the public sector companies, it is found that mean values shows the two companies MFL and NFL has to be in critical situation that means these two companies are having a chance to going bankrupt with the next two years. In a detailed manner, MFL has a good financial strength after 2005-06, FCTL has a good financial strength at the end of the study period 2011-12, RCFL has not a good position in its financial health situation, NFL shows that the company may have a chance

to enter into the bankruptcy condition, the 'z' values of SAIL during the study period noticed that the company went into bankruptcy position and also the company NLC has not a good financial health during the study period.

In the case of private sector companies, it is noted that the mean values show the company SPICL has a good position in its financial health. Further, the three companies' viz., MCFL, ZFCL and CIFL has been moving towards bankruptcy in the next two years. On the other hand, the remaining four private sector companies' viz., BATL, TACFL, GFCL and DFPCL would be bankruptcy situation during the study period. In a detailed approach, SPICL has a good financial strength during the study period except the years 2008-09, 2009-10 and 2011-12. During the study period, the companies BATL, GFCL and DFPCL have not entered into the sound financial position and TACFL also have not a good financial strength except 2010-11 and 2011-12. Around 50 percent of the study period, MCFL and ZFCL have not a sound financial strength.

To conclude, no companies in public sector have a sound financial health except MFL and NFL has a moderate financial health. In the case of private sector fertilizer companies, only the company SPICL has a good financial position when compared to all the other private sector companies. Among the eight companies in private sector companies, three companies viz. MCFL, ZFCL and CIFL have the a moderate level of financial strength.

Year Wise Classification of the selected companies: Z-Score Analysis

An attempt has been made to classify the selected companies based on year wise through Z-score analysis. The selected fourteen companies have been classified under different zones by using Z-score.

TABLE 1.2
Z-Score Summary - Year Wise Classification - Different Zones

Year	No. of Companies			Total Companies
	Bankruptcy Zone (Z Score <1.81)	Grey Zone (Z Score between 1.81 - 2.99)	Healthy Zone (Z Score >2.99)	
1999-00	12	1	1	14
2000-01	11	2	1	14
2001-02	11	2	1	14
2002-03	12	1	1	14
2003-04	11	1	2	14
2004-05	7	6	1	14
2005-06	6	7	1	14
2006-07	7	5	2	14
2007-08	7	6	1	14
2008-09	6	4	4	14
2009-10	8	4	2	14
2010-11	5	6	3	14
2011-12	7	6	1	14

Source: Compiled

It could be noted from the above table that among the 14 companies, only one company has a sound financial strength for the study periods 1999-00, 2000-01, 2001-02, 2002-03, 2004-05,

2005-06, 2007-08 and 2011-12. For the years, 2003-04, 2006-07 and 2009-10, two companies are being the good financial condition. Further, at the year 2010-11, there are three companies are lying on the healthy zone. On the other hand, four companies are having a good financial strength in the year 2008-09.

Mean Value Wise Classification of the Selected Companies: Z-Score Analysis

The following table expressed the result of Z-score results based on the mean value classification in different zones.

Table 1.3
Z-Score Summary - Mean Value Classification - Different Zones

Year	No. of Companies	Name of the Company
Bankruptcy Zone (Z Score <1.81)	8	FCTL, RCFL, SAIL, NLC, BATL, TACFL, GFCL, DFPCL,
Grey Zone (Z Score between 1.81 and 2.99)	5	MFL, NFL, MCFL, ZFCL, CIFL
Healthy Zone (Z Score >2.99)	1	SPICL
Total	14	

From the above table 6.8 it is identified that among the 14 companies, eight companies viz. FCTL, RCFL, SAIL, NLC, BATL, TACFL, GFCL, DFPCL are not in the good financial strength ie., bankruptcy condition. Further, five companies viz. MFL, NFL, MCFL, ZFCL, CIFL are being moderate condition in its financial status. That means these five companies might become a bankruptcy position for the next two years. On the other hand, only one company SPICL has a sound financial position during the study period.

Conclusion

On basis of the above analysis a researcher may conclude that these results indicate that the company should maintain proper financial position. Otherwise it will not be able to meet uncertain requirements. This above study will benefit and contribute to the body of knowledge by identifying how selected Fertilizer companies in India manage their financial health in the most effective and efficient manner in order to ultimately maintain good will of the companies.

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