11

APPRAISAL OF FINANCIAL VIABILITY OF YASHWANT CO-OPERATIVE PROCESSORS LTD., ICHALKARANJI BY USING ALTMAN'S Z SCORE

Dr. Naushad M. Mujawar

Associate Professor & Head, Deptt. of Business Management ShriVenkateshMahavidyalaya, Ichalkaranji, Dist: Kolhapur.

ABSTRACT:- Profit is sine qua non for survival and growth of business. Financial viability and soundness has to be maintained under any circumstances. The firm has to be very cautious about its worsening financial position at right time. Any signal of danger to financial viability ...Page No - 43

APPRAISAL OF FINANCIAL VIABILITY OF YASHWANT CO-OPERATIVE PROCESSORS LTD., ICHALKARANJI BY USING ALTMAN'S Z SCORE

Dr. Naushad M. Mujawar
Associate Professor & Head, Deptt. of Business Management
ShriVenkateshMahavidyalaya, Ichalkaranji, Dist: Kolhapur.

ABSTRACT

Profit is sine qua non for survival and growth of business. Financial viability and soundness has to be maintained under any circumstances. The firm has to be very cautious about its worsening financial position at right time. Any signal of danger to financial viability and operational efficiency should be detected at early stage and be sorted out. Altman's Z Score is very useful tool to monitor the operational efficiency and financial viability of the firm.

KEY WORDS: *Viability, Operational Efficiency, Altman's Z Score*

1.1: INTRODUCTION

Textile manufacturing is one of the major industries in India, which is based on the conversion of fiber into yarn andyarn into fabric. Though different types of fibers are used to produce yarn, the cotton remains the most important natural fiber which is used for making fabric. The fabrics are then dyed or printed, fabricated into usable cloths. There are a number of processes available at the spinning and fabric-forming stages coupled with the complexities of finishing and colouration processes to the production of a wide range of products.

Textile processing is an important sub-sector in the textile industry, which converts a virtually unbrandable raw product to a differentiable consumer product. In so doing, it provides a link between the design and fashion requirements of the market and the processes involved in converting grey fabrics into finished fabrics. Textile wet Processing uses a large number of workers as well as huge quantities of water, steam (fuel) chemicals and dyes and is a big drain on resource as compared withthe other sub-sectors of the textile industry. At a process house, the processes like Bleaching, Mercerizing and Dyeing, Calendaring and Printing are carried out upon all sorts of 100% cotton fabrics, 100% synthetic fabrics &blended fabrics.The processing fabrics are given various finishing treatment as stenter, sanforising, decatising and calendaring as needed.

Yashwant Co-operative Processors Ltd. is a major house of textile processing unit with wide process capacity located in Ichalkaranji. This unit includes printing and dyeing for all types of fabrics including cotton, polyester, poly-cotton, poly-viscose, glazed cotton and other types of fabrics. The unit offers innovative textile process solutions in pre-treatment, dyeing, finishing, and printing. It has gained a reputation among their customers in both local and national market.This process house was established in the year 1963 under the leadership of Late

DattajiraoKadam and Late AnantraoBhide to cater to the needs of the local power-looms and hand-loom industry. It is registered under Maharashtra State Co-operative societies Act, 1960 vide Registration No. K.P.R./P.R.G. (1)/26 of 1963 dated 14-03-1963) and it had gone into production on 18-05-1963.This co-operative society was formed by a group of people basically owners of power looms and a few members were form the trading community.Yashwant Processors was formed to provide the processing facilities to small power-loom weavers to make the cloth marketable and for value addition. At present, total member of the society are 1540, which includes co-operative societies, individuals, firms, weavers and traders.

1.2: REVIEW OF LITERATURE

The review of relevant literatureis presented herebelow.

1)Mansur A.Mulla (2003) concluded that the unit under study was just on the verge of collapse. Its performance was unviable and apprehensions of a total failure of that unit were entirely justified. The unit faced the problems of over-trading owing to the inadequate level of working capital. Negative EBIT was a cause for serious concern and it was this that had eaten into the vitals of the current assets and ultimately the working capital. On the one hand, current assets declined because of the negative profitability performance and on the other, the current liabilities were on the increase on account of the poor liquidity performance. As regards volume, the company had failed to achieve the sales target set for different years mainly due to poor production performance owing to under-utilization of the available capacity, which contributed to the deteriorating financial health of the unit. Thus, managerial incompetence in some form accounted for almost all failures. It is imperative that the unit has to tone up the efficiency and effectiveness of all facets of the management.

2) Ali AbusalahElmabrok Mohammed (2012) found that there are financial distressed companies listed on the main board and are not classified as PN17 company and concluded that Edward Altman model and current ratio are useful tools for investor to predict financial failure of companies.

3) SanobarAnjum (2012) opined that one common theme throughout has been that a consensus has not been forthcoming as to which variables are most effective in predicting bankruptcy and the time period prior to failure. Most of the bankruptcy studies have used multiple discriminant analysis (MDA) statistical techniques to develop models and have included large and small firms, as well as private & publicly held firms. Dr. Altman's model has been well researched and many pioneering studies have been done under his z-score yardstick. The significant changes done on the Altman equation has improved the predictability of bankruptcy.

4) N.R.V. Ramana Reddy and K. Hari Prasad Reddy (2013) revealed that the sugar industry is an agro-based manufacturing industry. Its financial performance not only depends on its financial activity but also on climatic conditions and yield of sugarcane. From the analysis, it is clear that the liquidity, working capital turnover efficiency and solvency position of the Chittoor Co-Operative Sugars Ltd., Prudential Sugar Corporation Ltd., and Sri Venkateswara Cooperative Sugar Factory Ltd., is not good. The Z-score analysis shows the poor financial performance leading to bankruptcy of Chittoor co-operative sugars Ltd. However, the Z-score was in increasing trend from the year 2004 to 2010 indicating the company became aware of the financial performance and taken corrective measures to increase its financial performance. Comparatively the financial performance of Sri Venkateswara Sugars Factory Ltd. performance is good. All the three companies are facing financial distress. Therefore, it requires an all-round and valiant effort of all the people involved in it - managers, employees and other stakeholders. Especially, when the firm's financial position is tending towards bankruptcy, the turnaround is like an adventurous journey.

5) D. E. Idoge1 & C. O. Chukwuji (2014) investigated the financial health status of small scale poultry businesses in Delta State, Nigeria using Altman's Z-score model. The empirical study was undertaken to assess the solvency and hence future survivability of small scale poultry enterprises in the State. Financial data were extracted from three years (2010– 2012) financial statements of 125 small scale poultry farms purposively selected from farms operating in the State and incorporated with the Nigerian Corporate Affairs

Commission as limited liability agribusinesses. Descriptive statistics which include computed financial ratios, frequency distributions, percentages and tables were applied to analyze the content of the financial statements and Altman's Z-scores' were computed for each sampled farm for the three year period. The study shows that in 2010, 47.8 percent of farm enterprises had Z-scores between minus 0.60 to 1.55. In 2011 and 2012, 44.8 percent and 42.4 percent, respectively of the farms had Z-scores between negative 0.60 and 1.55. The study further indicates that 28 percent, 27 percent and 30.4 percent in 2010, 2011 and 2012, respectively, of the sampled farms had computed Z-scores between 2.64 and 4.79 farms. He recommended the use of Altman's Z-score by small scale investors as a technique for monitoring the financial health of their agribusinesses to prevent the ugly consequences of bankruptcy and liquidation.

6) VikasTyagi (2014) found that all the selected companies of Indian Logistic industry are financially healthy during the study period. Their average Z score was increasing during the study period i.e. from 2005 to 2012. And the operating efficiency of the firms is good for CC, All Cargo and Aegis. The retained earnings ratio is satisfactory in CC & All Cargo which strengthens the financial position over the period of time. He concluded that the financial health of a firm is a key indicator for share-holders. Any managerial decision of a firm is taken on the basis of financial health of a firm. In this context, Altman's Z score plays a vital role in deciding the financial bankruptcy of a firm and there by a firm can judge its financial position.

7) Shariq Mohammed (2016) opined that the fundamental financial health of a business firm is the main concern for the stakeholders. On the basis of the financial soundness, they take a decision regarding their possible involvement with a particular firm. The Altman Z score is the best measurement that can shape the decision of the stakeholders. He studied the financial health of Raysut Cement Company SAOG and its subsidiaries in Oman and revealed that Raysut Cement Company SAOG and its subsidiaries is financially sound as they have higher Z score than the benchmark (2.99) except in some years of study So, the findings of the study can be useful for the managers to take financial decision, the stockholders to choose investment options and others to look after their interest in the concern cement manufacturers of the country.

1.3: STATEMENT OF THE PROBLEM

Survival and growth is one of the important objectives of business and increasing sales and profitability is instrumental in it. However, due to poor management, high cost or poor financial management, the firm is likely to face the stringent financial condition. The firm has to be very cautious about its worsening financial position at right time. Any signal of danger to financial viability and operational efficiency should be detected at early stage and be sorted out. Altman's Z Score is very useful tool to monitor the operational efficiency and financial viability of the firm. It gives the warning signal of probable bankruptcy, if any, at real time.

On this background, the researcher has undertaken the study of assessing the financial viability and operational efficiency of a co-operative firm operating in textile processing sector of textile industry and captioned the study as, *"Appraisal of Financial Viability of Yashwant Co-operative Processors Ltd., Ichalkaranji by using Altman's Z Score"*

1.4: OBJECTIVES OF THE STUDY

1)To examine the operational efficiency and financial viability of Yashwant Co-operative Processors Ltd. by using Altman' Z Score.

2) To detect the grey areas in the operational efficiency of Yashwant Co-operative Processors. Ltd.

1.5: HYPOTHESES

H_0:There exists no significant correlation between Altman's five independent ratios and Z score.

1.6: RESEARCH METHODOLOGY

It is a case study which is entirely based on secondary data. The following methodology is adopted for the study.

1.6.1: Period of the Study

The study covered the period of consecutive five years from financial year 2012-13 to 2016-17.

1.6.2: Data Collection

The data required for calculation of Altman's Z score was collected from the audited annual reports of Yashwant Co-operative Processors Ltd. which were cross checked against its office records.

1.6.3: Analytical Tools

The following analytical tools are used for the study.

(a) Altman's Z Score:

The following formula of Altman's Z Score is used in the study, which is known as 5-factor model of the Altman Z-score, widely used for private manufacturing firms.

$$\text{Z-Score} = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.42X_4 + 0.998X_5$$

where,

X_1 = Working Capital / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 = Earnings Before Interest and Taxes / Total Assets

X_4 = Equity / Total Liabilities

X_5 = Sales / Total Assets

The calculated values of year-wise Z Score are placed in the following Zones of Discrimination for interpretation:

- 1.23 or less – Distress Zone
- from 1.23 to 2.9 – Grey Zone
- 2.9 or more –Safe Zone

(b) Correlation Matrix:

It is used to test the hypothesis of the study along with respective p-values of the Karl Pearson's Correlation Coefficient denoted by 'r'

1.7: DATA ANALYSIS AND INTERPRETATION

The data pertaining to financial position of Yashwant Processors for five years are analysed and presented in Tables 1 to 3. Table-1 explains the main features of data in the form of descriptive statistics, while Table-2 presents the Z Score values and Table-3 exhibits the correlation matrix of Altman's five ratios.

Table-1
Descriptive Statistics of Altman's Ratios computed for Yashwant
Co-operative Processors Ltd., Ichalkarnji

		Minimum	Maximum	Mean	S.D.
Independent Variables	Working Capital	-10.33	-15.26	-12.84	1.96
	Total Assets	39.58	33.67	37.03	2.20
	X1	-0.31	-0.39	-0.35	0.03
	Retained Earnings	16.98	16.53	16.74	0.20
	Total Assets	39.58	33.67	37.03	2.20
	X2	0.5	0.42	0.45	0.03
	EBIT	-1.12	-1.63	-1.38	0.22
	Total Assets	39.58	33.67	37.03	2.20
	X3	-0.03	-0.05	-0.04	0.01

	Market Value of Equity	3.65	3.6	3.63	0.02
	Total Liabilities	19.27	13.15	16.65	2.32
	X4	**0.27**	**0.19**	**0.22**	**0.03**
	Net Sales	9.47	6.51	7.60	1.17
	Total Assets	39.58	33.67	37.03	2.20
	X5	**0.26**	**0.18**	**0.21**	**0.03**
Dependent Variable	Z Score	**0.24**	**0.40**	**0.31**	**0.07**

Source:*Computed by Researcher*

There are five independent variables (T1 to T5) in Altman's Z Score model and the Z Score is the dependent variable. The first variable (X1) has a five-year's average of -0.35 with the Standard Deviation of 0.03, while the second variable X2 has an average of 0.45 with S.D. of 0.03. Variable X3, X4 and X5 have averages of -0.04, 0.22 and 0.21 with S.D. of 0.01. 0.03 and 0.03 respectively. Z Score, the dependent variable, has an average of 0.31 with the S.D. of 0.07.

Table-2
Altman's Z Score of Yashwant Co-operative Processors Ltd., Ichalkaranji for the period of five years from 2012-13 to 2016-17
(Amount in Crore Rupees)

Year	Altman's X1 (0.717)*			Altman's X2 (0.847)*			Altman's X3 (3.107)*			Altman's X4 (0.42)*			Altman's X5 (0.998)*			Altman's Z Score
	Working Capital	Total Assets	Ratio	Retained Earnings	Total Assets	Ratio	EBIT	Total Assets	Ratio	Market Value of Equity	Total Liabilities	Ratio	Net Sales	Total Assets	Ratio	
2012-13	-10.33	33.67	-0.31	16.91	33.67	0.5	-1.53	33.67	-0.05	3.61	13.15	0.27	6.51	33.67	0.19	0.349
2013-14	-11.66	36.5	-0.32	16.98	36.5	0.47	-1.63	36.5	-0.04	3.6	15.87	0.23	9.47	36.5	0.26	0.400
2014-15	-12.76	37.22	-0.34	16.53	37.22	0.44	-1.17	37.22	-0.03	3.65	17.04	0.21	7.68	37.22	0.21	0.333
2015-16	-14.18	38.17	-0.37	16.6	38.17	0.43	-1.44	38.17	-0.04	3.65	17.92	0.2	6.69	38.17	0.18	0.238
2016-17	-15.26	39.58	-0.39	16.67	39.58	0.42	-1.12	39.58	-0.03	3.65	19.27	0.19	7.65	39.58	0.19	0.252
													Five Year Average Z Score			1.573

***Altman's Coefficient Multipliers**

Source: *Annual Reports of Yashwant Co-operative Processors Ltd., Ichalkaranji*

Table-2 reveals that Yashwant Processors has the Z score for all the five years is below 1.23 which is a clear indication of its financial distress. The firm has negative working capital for the period under study. The same is the case with its EBIT. These two variables (X1 and X3)have caused to worsen its Z Score. The average Z Score for the study period is found to be 1.58, which indicates that the firm is in Grey Zone as regards its financial position.

Table-3 indicates the strength of correlation between five ratios of Altman's Model and his Z Score.

Table-3
Correlation Matrix of Altman's Five Ratios (T1 to T5)

Variables	X1	X2	X3	X4	X5	Z Score
X1	1					
X2	0.92 (.0033)	1				

	Very Significant					
X3	-0.66 (.1067) Not Significant	-0.84 (.0180) Significant	1			
X4	0.89 (.0073) Very Significant	0.99 (.0001) Extremely Significant	-0.85 (.0154) Significant	1		
X5	0.51 (0.2423) Not Significant	0.30 (.5133) Not Significant	0.04 (.9321) Not Significant	0.17 (.7156) Not Significant	1	
Z Score	0.89 (.0073) Very Significant	0.75 (.0522) Not Significant	-0.34 (.4556) Not Significant	0.67 (.0996) Not Significant	0.81 (.0272) Very Significant	1
't' value for Z Score	7.41	2.97	-0.67	2.10	4.08	--
tc@0.05, 4dof	2.132					

Values in parentheses denote p-values for 'r'

Source:*Values computed by researcher*

Table-3 reveals that there is significant correlation between X1 (Working Capital to Total Assets Ratio) and X2 (Retained Earnings to Total Assets Ratio) and also between X1 (Working Capital to Total Assets Ratio) and X3 (EBIT to Total Assets Ratio) Further, the significant correlation existed between X2(Retained Earnings to Total Assets Ratio), X3 (EBIT to Total Assets Ratio) and X4 (Equity to Total Liabilities) Significant correlation is found in X3 (EBIT to Total Assets Ratio) and X5 (Net Sales to Total Assets Ratio)Independent variables X1 and X5 have significant impact on the Z Score.

As calculated 't' values are more than critical value of 't' at 0.05, the null hypothesis is rejected. Therefore, it is established that there exists the significant correlation between five independent ratios and Z score.

1.8: FINDINGS

1) It is found that Yashwant Processors has very poor working capital position throughout the study period. There was deficit in working capital year after year by Rs.133.02 lakh in 2013-14, Rs. 110.08 lakh in 2014-15, Rs. 141.97 lakh in 2015-16 and Rs. 108.23 lakh in 2016-17.

2) There is a very little growth in Retained Earnings of Yashwant Processors during the study period. In the year 2013-14, retained earnings increased only by Rs. 6.28 lakh (0.37%), Rs. 6.7 lakh (0.48%) in 2015-16 and by Rs.6.54 lakh (0.39%) in 2016-17. It is worrisome that retained earnings have dropped by Rs. 44.29 lakh (-2.61%) in the financial year, 2014-15.

3) EBIT position of Yashwant Processors was found fluctuating during the study period. EBIT was reduced by Rs. -9.70 lakh in 2013-14 which amounted to 6.32%. However it improved by Rs. 45.87 lakh in 2014-15 which again diminished in 2015-16 by Rs. -26.47 (22.58%) again in 2016-17 it reduced by Rs. 32 lakh (-22.27%).

4) As the shares of a co-operative entity are not listed and traded on stock exchanges, the total amount of subscribed capital is considered for the study. It was found that the increased liabilities during the study period have led to reduce the equity liabilities ratio from 27% in 2012-13 to 19% in 2016-17.

5) Mixed trend is found in case of net sales of Yashwant Processors during the study period. Compared to 2012-13, its net sales grew by Rs. 295.72 lakh in 2013-14 registering the handsome growth percentage of 45.41%. However, in 2014-15, the net sales reduced by Rs. -179.21 lakh (-18.92%) and again by -98.41 lakh (-12.81%). However, in the year 2016-17, its net sales grew by Rs. 95.77 lakh (14.31%)

6) Every year, there was an increase in total liabilities of Yashwant Processors. Compared to 2012-13, its liabilities have increased by Rs. 271.35 lakh (20.71%) in 2013-14. Thereafter, in 2014-15, it increased by Rs. 116.71 lakh (7.35%) in 2015-16, by Rs. 88.31 lakh (5.18%) in 2016-17.

On the contrary, its total assets have shown poor growth during the study period. Compared to in 2012-13, the total assets of Yashwant Processors have increased by Rs. 282.63 lakh (8.93%) in 2013-14, by Rs. 72.41 lakh (1.98%), Rs. 95.02 lakh (2.55%) in 2015-16 and Rs. 141.03 lakh (3.69%) in 2016-17.

7) It is found that during the study period, the total liabilities have increased over total assets. Net increase in total assets was Rs. 591.09 lakh while net increase in total liabilities was Rs. 611.87 lakh, amounting to the gap of -20.78% in assets and liabilities.

8) The viability analysis (Z Score) of Yashwant Processors is found have reduced year after year during the study period. The firm had Z Score of 0.35 in 2012-13, 0.40 in 2013-14, 0.33 in 2014-15, 0.24 in 2015-16 and 0.25 in 2016-17 which has placed it in Distress Zone. However, the five-year average Z Score of the firm is arrived at 1.58, which has placed the firm in Grey Zone.

1.9: CONCLUSIONS

Based on the above study, the following conclusions are drawn.

1) Yashwant Processors has an unaffordable negative mismatch between its Total Assets and Total Liabilities, which has worsened its Working Capital position. It is the important grey area in its financial position.

2) It's retained earnings have dropped at a heavy rate than its growth rate.

3) EBIT is fluctuating and unsatisfactory. It is another attention-catching grey area.

4) Net sales have not grown at a satisfactory rate.

5) All throughout the study period, Yashwant Processors has been facing the acute problem of financial distress. It's overall viability and operational efficiency has stand at a danger bend.Further, it is also concluded that Altman's Z Score has power to predict the worsening financial position of the firm and signaling the forthcoming dangers and distress.

1.10: SUGGESTIONS

Apparently, it seems difficult to improve the financial position of Yashwant Processors in a short period. However, if the following suggestions would hopefully help the firm to revive in coming years.

1) The burden of liabilities should be reduced to an affordable level and care should be taken to maintain the current ratio upto a desirable standard.

2) Concrete efforts should be made to enhance net sales and thereby EBIT.

3) Every quarter the viability and operational efficiency of the firm should be tested with the use of Altman's Z Score.

REFERENCES:

(I) Books:

1)Altman, Edward. (1968). Financial Ratios, Discriminant Analysis and The Prediction of Bankruptcy, Journal of Finance, 23(4), 589-609.

2) R. Panneerselvam, 'Research Methodology'- Prentice Hall of India Pvt. Ltd., New Delhi, Ed.: 2010

3) Rajiv Srivastava and Anil Misra, 'Financial Management'- Oxford University Press, YMCA Library Building, New Delhi, Ed.: 2011.

(II) Articles:

1) Mansur, A Mulla (2002), "Forecasting the Viability and Operational Efficiency by Use of Ratio Analysis- A Case Study" Finance India, Vol.XVII,No.3. September, 2003,pp396-397.

2) Ali AbusalahElmabrok Mohammed and Kim-Soon, "Using Altman's Model and Current Ratio to Assess the Financial Status of Companies Quoted In the Malaysian Stock Exchange." International Journal of Scientific and Research Publications, Volume 2, Issue 7, July 2012 1 ISSN 2250-3153

3) SanobarAnjum, "Business bankruptcy prediction models: A significant study of the Altman's Z-score model" Asian Journal of Management Research, Volume 3 Issue 1, 2012, pp-218

4) N.R.V. Ramana Reddy and K. Hari Prasad Reddy, "Financial Status of Select Sugar Manufacturing Units-Z Score Model" International Journal of Education and Research, Vol. 1 No. 1 January 2013, pp-8.

5) D. E. Idoge1 & C. O. Chukwuji, "Assessing the Financial Health Status of Small Scale Poultry Businesses in Delta State, Nigeria." Sustainable Agriculture Research; Vol. 3, No. 4; 2014, ISSN 1927-050X E-ISSN 1927-0518

6) VikasTyagi, "A Study to Measures the Financial Health of Selected Firms with Special Reference to Indian Logistic Industry: An Application of Altman's Z Score" Industrial Engineering Letters, ISSN 2224-6096 (Paper) ISSN 2225-0581 (online)
Vol.4, No.4, 2014

7) Shariq Mohammed, "Bankruptcy Prediction by Using the Altman Z score Model in Oman: A Case Study of Raysut Cement Company SAOG and its subsidiaries" Australasian Accounting, Business and Finance Journal, Volume 10, Issue 4, 2016, PP-78

(III) Reports:

1) Annual Reports of Yashwant Co-operative Processors Ltd., Ichalkaranji (2012-13 to 2016-17)