FINANCIAL PERFORMANCE AND PREDICTING THE RISK OF BANKRUPTCY: A CASE OF SELECTED CEMENT COMPANIES IN INDIA

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ABSTRACT:

Bankruptcy is a situation where the liabilities exceed the assets in the company, generally it happens due to under capitalization, not maintain sufficient cash, sources are not utilize properly, in efficient management in all activities, sales decline and market situation etc. Predicting bankruptcy is a dire vital for taking curative and corrective measures for better financial planning, profitability, liquidity and solvency efficiency of the firm.in this study an attempt have been made know the financial performance and also to predict the risk of bankruptcy for selected cement companies from 2001-to-2010.to achieve these objectives a few financial ratios are calculated viz.,Liquidity Ratios; Working Capital Ratios, Solvency Ratios and Altman Z-Score Analysis was made to diagnose the problem of bankruptcy. The result reveals that liquidity, working capital turnover efficiency and solvency position of the selected cement companies are not satisfactory. In this study the Z-Score analysis results shows that KCP Ltd and Kesoram Industries Ltd have poor financial performance and Dalmia Bharat Ltd is at the edge of bankruptcy.

Key Words: Altman Z-Score Analysis, Bankruptcy, Liquidity Ratios,Solvency Ratios and Working Capital Ratios.

1. INTRODUCTION

There is a dire need for prediction of business failures since the results of business failure leads to heavy loses both financially and non-financially. Thus, accurately predicting business failure in time would be quite useful to the managers, shareholders,government, suppliers,employees and others.The prediction of business failure is an important for taking timely corrective and remedial measure for protecting the business firm from the problem of bankruptcy. The prediction of bankruptcy probably is the one of the most important business decision making and proper utilization of financial resources of the firm.

The problem of bankruptcy can be caused by poor management, improper sales forecasting, inexperience management, fraud changes in tastes and preferences of customers and rapid technological advances in the field of business and other variables. So, there are many forms of business failures. The first one is economic failure, this occurs when an organization is not able to generate profit/revenue that would be sufficient enough to meet creditors obligations and various costs/expenses associated with the operations of the firm. Financial failure may take the form of bankruptcy or insolvency. Insolvency refers to where a firm is unable to meet its current obligations as and when they fall due. These happen when the current liability exceed the current assets. Bankruptcy, in other hand,refers to where the total liabilities exceed the total assets. Financial statement is normally used to assess the performance of the firm in terms of profitability and solvency. There is a need for predicting financial failure on time for taking corrective measures in relating to investment and lending.

2. LITERATURE REVIEW: In this section an attempt have been made to study the empirical studies relating financial performance and predicting the risk of bankruptcy.

Altman's Z-score, the popular ones being predicting bankruptcy of private firms (Altman, 1993), no manufacturers'Z-score model, and the Emerging MarketsScore of Altman, (Altman, Hartzell, & Peck, Emerging Market Corporate Bonds: A Scoring System,, 1995).Altman and Narayanan (1997) present a review on international studies conducted in 22 countries in which half of them are on developing countries. The major conclusion of all these studies is that the multivariate techniques such as multiple discriminant analysis, logistic regression, and probit models built on the basis of accounting ratios are effective tools for predicting default companies. In many cases, accounting ratio-based credit scoring models have shown that they can perform quite well over many different time periods and across many different countries (Altman, Narayanan , & Paul, 1997). Among them, multiple discriminant analysis is found to be a superior and a more acceptable technique.

(Bhatia, 1988; Sahoo, Mishra , Soothpathy, & Mayadnar, 1996), examine the predictive power of accounting ratios on a sample of sick and non-sick companies by applying the multiple discriminant analysis technique. In both the studies, the selected accounting ratios are effective in predicting sickness with high level of accuracy. But, these studies have considered a select sample of sick companies as defined by the Sick Industries Companies Act (SICA) and not the firms under banking definition of default.(Gupta, 1983)Study on a sample of Indian companies financed by ICICI concludes that certain cash flow coverage ratios are better indicators of corporate sickness. The study has not favoured the application of either multiple discriminant analysis or any other.

(Aiyabei, 2002) discussed the theoretical aspect of a financially distressed firm based on a cyclical concept and examined the financial performance of small business firms based in Kenya using Z score model.(McClure, 2004) Had confirmed the 'Z' score model through his research study and he concluded that to keep an eye on their investments, investors should consider checking their companies' Z-score on a regular basis. A deteriorating Z-score can signal trouble ahead and provide a simpler conclusion than the mass of ratios. Given its shortcomings, the Z is probably better used as a gauge of relative financial health rather than as a predictor. Arguably, it is best to use the model as a quick check of financial health, but if the score indicates a problem, it's a good idea to conduct a more detailed analysis.

In Indian context, (Gupta, 1999) attempted a refinement of Beaver's method with objective of predicting the business failure. Whereas,(Mansur.A & Mulla, 2002)made a study in Textile mill with the help of Z score model for evaluating the financial health with five weighted financial ratios and followed by(Selvam, Vanitha, & Babu., 2004) had revealed about cements Industry's financial health especially India Cements Ltd. (krishnaChaitanya, 2005) used Z model to measure the financial distress of Industrial Development Bank of India (IDBI) and concluded that IDBI is likely to become insolvent in the years to com.

 (Mensah, 1984) Indicates that the past performance involved in a firm's accounting statements may not be informative in predicting the future, and thus suggests that it is necessary to regenerate the accounting-ratio-based models periodically.(Hillegeist, Keating Cram, & Lundstedt, 2004)Argue that the ability of accounting information in predicting bankruptcy is likely to be limited given the fact that they are formulated to describe the financial condition of the company under the "going-concern" principle (i.e., assuming it will not go bankrupt).

Based on the criticisms of accounting-ratio-based models, market-based models are proposed by (Black & Scholes, 1973; Merton, 1974).It is claimed that market prices reflect future expected cash flows, and thus should be more useful in predicting bankruptcy. Market-based models are further examined by a number of studies, including (Hillegeist, Keating Cram, & Lundstedt, 2004; Reisz & Perlich, 2004; Vassalou & Xing, 2004; Campbell, Hilscher, & Szilagyi, 2006) in assessing default probability.

The empirical evidence on the relative performance of market-based against accounting-ratio-based models is mixed performance of market-based against accounting-ratio-based models is mixed(Kealhofer & Kurbat, 2001; Oderda, Dacorogna, & Jung; Hillegeist, Keating Cram, & Lundstedt, 2004; Reisz & Perlich, 2004; Stein, 2005; Campbell, Hilscher, & Szilagyi, 2006; Blochlinger & Leippold, 2006; Agarwal & Taffler , 2008).

A company is financially distressed whenever its EBITDA is less than its interest expenses. Financial leverage involves the substitution of fixed-cost debt for owner's equity in the hope ofincreasing equity returns. Financial leverage improves financial performance when businessfinancial prospects are good but adversely impact on financial performance when things aregoing poorly. As a result, increasing the ratio of debt to equity in a company's capital structureimplicitly makes the company relatively less solvent and more financially risky than a companywithout debt. Capital adequacy relates to whether a company has enough capital to finance itsplanned future operations. If the company's capital is inadequate, then it must either be able tosuccessfully issue new equity, or arrange new debt. The amount of debt a company cansuccessfully absorb and repay from its continuing operations, is normally referred to as thecompany's debt capacity(Thynne, 2006).

For many small and newly formed businesses, this is often the single most important reason for business failure. The problem arises when the money coming into the company from sales is not enough to cover the costs of production. It is important to remember that it is a case of having the Money to be able to pay debts when the debts are due not simply generating enough revenue during a year to cover costs (Patrick & Ooghe, 2004).

Many new businesses will have to put together a business plan to present to the bank before it receives loans or financial help. The time and effort put into these plans is crucial for success. Bad planning or poor information on which the plan is based is likely to lead to difficulties for the firm. For example, if the firm plans to sell 2,000 units per month in the first year because it used only limited market research and ends up only selling 500 per month, it will soon be in serious danger of collapse(Charitou, 2002).

Falling sales might be a sign that there might be something wrong with the product or the price or some other aspect of the marketing mix. Sometimes the fall in sales might be as a result of the Competition providing a better product or service - in part the business can do something about this they have to recognize it in the first place (Moyer, Tuncan , Birgonul , & Dikmen, 2006).

Changing tastes, technology and fashion can cause demand for products to fall - the business needs to be aware of these trends. Demand might fall for other reasons not in the firm's control. It might be due to a change in the economic climate of the country. If the economy is experiencing a downturn then maybe people may not have as much money to spend on the

businesses products or services. The Bank of England may have increased interest rates and this has led to people cutting back their spending(Sipika & Smith, 2002).

Costs of production can rise for a number of reasons. There may have been wage rises, raw material prices might have increased (for example the price of oil or gas) the business might havehad to spend money on meeting some new legislation or standard and so on. In many cases, a firm can plan for such changes and is able take them into account but if the costs rise unexpectedly, this can catch a firm off guard and tip them into insolvency(Kip, 2002).

To project a high profile image for the company by hiring expensive office space and a fancy logo and website will not do much to facilitate in the success of your business. In fact high overheads, because of expensive space and website maintenance costs, can drive you out of business very fast, because the golden rule for the success of any business is to keep overheads low especially at the start up time(Argenti, 2003).Diversifying customer base is an important factor in building the business. Being flexible enough to adapt to new trends and ideas is important to staying in business(Eidleman, 2007).

Uncontrolled growth of the business can also cause it to fail if not handled appropriately. Obesity Is a problem in business as it is in an individual's health? Proper planning must be in place even for business growth. Successful growth requires a professional management team, flexible organization, and proper systems and controls(Eidleman, 2007).

For decades, considerable accounting and finance research was directed at finding a ratio that would serve well as a predictor of bankruptcy. One of the most comprehensive studies of that early era was(Beaver, 1967).Beaver studied the performance of various ratios as bankruptcy predictors and concluded that the cash flow to debt ratio was the single best predictor.

2.1 PREVIOUS STUDIES RELATING TO PREDICTING BANKRUPTCY:

The prediction of company failure has been well researched using developed country data (Beaver, 1967; Altman E. I., Corporate Financial Distress and Bankruptcy,, 1993; Altman E. I., 1968; Wilcox, 1973; Deakin, 1972; Ohlson, 1980; Taffler, 1982; Boritz, Efrim, Kennedy, & Sun, 2007).A variety of models have been developed in the academic literature using techniques, such as multplediscriminant analysis (MDA), logit, probit, recursive partitioning, hazard models, and neural networks. Summaries of the literature are provided in(Zavgren, 1983; Jones, 1987; O'Leary, 1998; Boritz, Efrim, Kennedy, & Sun, 2007; Agarwal & Taffler , 2008)).Despite the variety of models available, both the business community and researchers often rely on the models developed by (Altman E. I., 1968; Ohlson, 1980; Boritz, Efrim, Kennedy, & Sun, 2007). A survey of the literature shows that the majority of internationalfailure prediction studies employ MDA ((Altman E. I., Financial ratios, discriminant analysis and the prediction of corporation bankruptcy., 1968; Charitou, Neophytou, Evi, & Charalambous, 2004)

2.2 Bankruptcy prediction models:

2.2.1 Z-Score Financial Analysis Tool:

A common statistical way of standardizing data on one scale so a comparison can take place is using a z-score. The z-score is like a common yard stick for all types of data. Each z-score corresponds to a point in a normal distribution and as such is sometimes called a normal deviate since a z-score will describe how much a point deviates from a mean or specification point. Z-score means statistical measure that quantifies the distance a data point is from the mean of a data set. In a more financial sense, Z-score is the output from a credit-strength test that gauges the likelihood of bankruptcy. The formula may be used to predict the probability that a firm will go into bankruptcy within two years. Z-scores are used to predict corporate defaults and an easy-to-calculate control measure for the financial distress status of companies in academic studies. The Z-score uses multiple corporate income and balance sheet values to measure the financial health of a company. The z-score represents a point in time. As such, the z-scores should be examined over time. Consistently low scores each year are more of a concern than a onetime low score. The Z score has proven successful in the real world. It correctly predicted 72% of bankruptcies two years prior to the event. Z score profiles for failing businesses often indicate a consistent downward trend as they approach bankruptcy.

2.2.2 ESTIMATION OF THE 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 firms which had survived, with matching by industry and approximate size (assets). Altman applied the statistical method of discriminant analysis to a dataset of publicly held manufacturers. The estimation was originally based on data from. Publicly held manufacturers, but has since been re-estimated based on other datasets for private manufacturing, non-manufacturing and service companies. From about 1985 onwards, the Z-scores gained wide acceptance by auditors, management accountants, courts, and database systems used for loan evaluation (Eidleman). The formula's approach has been used in a variety of contexts and countries, although it was designed originally for publicly held manufacturing companies with assets of more than $1 million. Later variations by Altman were designed to be applicable to privately held companies (the Altman Z'-Score) and non-manufacturing companies (the Altman Z"-Score).All developers of prediction models warn that the technique should be considered as just another tool of the analyst and that it is not intended to replace experienced and informed personal evaluation. Perhaps the best use of any of these models is as a "filter" to identify companies requiring further review or to establish a trend for a company over a number of years. If, for example, the trend for a company over anumber of years is downward then that company has problems, which if caught in time, could be corrected to allow the company to

survive. Three modes of this z-score are used in the present study in order to Measure the 'Fiscal-Fitness' of a company. They are: Altman Model, Springate Model and Fulmer Model.

2.2.3. Altman Model (U.S. - 1968): The Z-score formula for predicting bankruptcy was published in 1968 by Edward I. Altman, who was, at the time, an Assistant Professor of Finance at New York University. He is the dean of insolvency predictors. He was the first person to successfully use step-wise multiple discriminate analyses to develop a prediction model with a high degree of accuracy. This can also be called as a company failure or bankruptcy prediction method. A company's Z score is a positive function of five factors: (net working capital) / (total assets) (retained earnings) / (total assets) (EBIT) / (total assets) (market value of common and preferred) / (book value of debt) (sales) / (total assets).Although the weights are not equal, the higher each ratio, the higher the Z score and the lower the probability of bankruptcy. Also called Zeta. Using the sampleof 66 companies, 33 failed and 33 successful, Altman's model achieved an accuracy rate of 95.0%. Altman's model takes the following form -:

$$Z = 1.2A + 1.4B + 3.3C + 0.6D + .999E \ldots\ldots\ldots\ldots\ldots (1)$$
Where, A = Working Capital/Total Assets
B = Retained Earnings/Total Assets
C = Earnings before Interest and Taxes/Total Assets
D = Market Value of Equity/Book Value of Total Debt
E = Sales/Total Assets
If Z < 2.675; then the firm is classified as "failed"

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Altman's work built upon research by accounting researcher William Beaver and others. In the 1930s and on, Mervyn and others had collected matched samples and assessed that various accounting ratios appeared to be valuable in predicting bankruptcy. William Beaver's work, published in 1966 and 1968, was the first to apply a statistical method, t-tests to predict bankruptcy for a pair-matched sample of firms. Beaver applied this method to evaluate the importance of each of several accounting ratios based on univariate analysis, using each accounting ratio one at a time. Altman's primary improvement was to apply a statistical method, discriminant analysis, which could take into account multiple variables simultaneously.

2.2.4. Springate (Canadian - 1978)

This model was developed in 1978 at S.F.U. by Gordon L.V. Springate, following procedures developed by Altman in the U.S. Springate used step-wise multiple discriminate analyses to select four out of 19 popular financial ratios that best distinguished between sound business and those that actually failed. The Springate model takes the following form

$$Z = 1.03A + 3.07B + 0.66C + 0.4D \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where, A = Working Capital/Total Assets
B = Net Profit before Interest and Taxes/Total Assets
C = Net Profit before Taxes/Current Liabilities
D = Sales/Total Assets
If $Z < 0.862$; then the firm is classified as "failed"

This model achieved an accuracy rate of 92.5% using the 40 companies tested by Springate. Botheras (1979) tested the Springate Model on 50 companies with an average asset size of $2.5 million and found an 88.0% accuracy rate. Sands (1980) tested the Springate Model on 24 companies with an average asset size of $63.4 million and found an accuracy rate of 83.3%.

2.2.5. Fulmer Model (U.S. - 1984): Fulmer (1984) used step-wise multiple discriminate analyses to evaluate 40 financial ratios applied to a sample of 60 companies -30 failed and 30 successful. The average asset size of these firms was $455,000.The model takes the following form:

$$H = 5.528 (V1) + 0.212 (V2) + 0.073 (V3) + 1.270 (V4) - 0.120 (V5) + 2.335 (V6) + 0.575 (V7) + 1.083 (V8) + 0.894 (V9) - 6.075 \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where, V1 = Retained Earning/Total Assets
V2 = Sales/Total Assets
V3 = EBT/Equity
V4 = Cash Flow/Total Debt
V5 = Debt/Total Assets
V6 = Current Liabilities/Total Assets
V7 = Log Tangible Total Assets
V8 = Working Capital/Total Debt
V9 = Log EBIT/Interest
If $H < 0$; then the firm is classified as "failed"

Fulmer reported a 98% accuracy rate in classifying the test companies one year prior to failure and an 81% accuracy rate more than one year prior to bankruptcy.

3. RESEARCH DESIGN AND METHODS: in this section an attempt have been made to present the research methodology for the present study.

3.1 Objectives of the Study:

➤ To know the liquidity position of selected cement companies in India
➤ To study the solvency position of the selected cement companies with the help of selected ratios

- ➢ To find out the working capital investment efficiency
- ➢ To predict the risk of bankruptcy with the help of Z-score model

3.2 Hypothesis of the study:

H_1: Liquidity position of the selected cement companies is not satisfactory.

H_2: Solvency position of the selected cement companies is not satisfactory.

H_3: Working capital investment efficiency is not good.

H_4: the selected cement companies are not at the edge of bankruptcy.

3.4. Sources of data: the study rests only on secondary data for the purpose of achieving the objectives. The data is collected form the annual financial reports of the selected cement companies from 2001-to-2010.

3.5 Sample of The Study: the selected cement companies for the study are Dalmia Bharat LTd; KCP Ltd and Kesoram industries Ltd.

3.6 Tools of Analysis: the study uses the following tools for the purpose of analysis and interpretation of results for drawing generalization.

3.6.1 Liquidity Ratios: Current Ratio (CR) and Acid Test Ratio (ATR)

3.6.2 Working Capital Ratios: Inventory Turnover Ratios (ITR), Inventory Conversion Period (ICP), Debtor Turnover Ratio (DTR) and Debtor Collection Period (DCP).

3.6.3Solvency Ratios: Working Capital to Total Assets, Retain Earning to Total Assets, Earning Before Interest and Tax to Total Assets, Equity to Total Assets and Sales to Total Assets.

3.6.4 Z– Score Analysis: To test the bankruptcy and financial risk of the selected companies of the study, we selected Edward Altman's Multiple Discriminant Analysis.

$$\sum_{i=1}^{n} Z_i = 0.717x_{1i} + 0.847x_{2i} + 3.107x_{3i} + 0.42x_{4i} + 0.998x_{5i}$$

Where i = year 1 to n

X_1 = Networking capital to total assets ratio

X_2 = Retained Earnings to total assets ratio
X_3 = EBIT to total assets ratio
X_4 = Capital funds to total liabilities ratio
X_5 = Net sales to total assets ratio

Test Results:
$Z < 1.21$ indicates bad financial performance leads to bankruptcy.
$Z \geq 1.21$ and $Z \leq 2.9$ indicates poor financial performance.
$Z > 2.9$ indicates good financial performance.

4.0. Analysis and implication: liquidity ratios are termed as short-term solvency ratios. Liquidity means the ability of a concern to meet its short-term current obligation as when these become due. Liquidity ratios are the class of financial metric which are used to assess the company's ability to pay off its short-term debts obligation. Generally, the higher the value of the ratio, larger the margin of safety that the company possesses to cover the short-term debts. The information provided in the table 4.1 depicted the liquidity position of the selected cement companies with the help of Current Ratio and Acid Test Ratio.

Table 4.1: Liquidity Ratios

	Dalmia Bharat Ltd		KCP Ltd		Kesoram Industries Ltd	
Year	CR	ATR	CR	ATR	CR	ATR
2001	4.34	1.06	1.10	0.39	2.03	1.10
2002	1.87	0.39	0.87	0.25	1.04	0.57
2003	1.70	0.38	0.91	0.28	1.05	0.49
2004	1.75	0.41	0.98	0.34	1.28	0.67
2005	1.42	0.37	1.06	0.33	1.22	0.59
2006	1.10	0.41	1.29	0.36	1.35	0.61
2007	0.65	0.30	1.12	0.42	1.53	0.64
2008	0.94	0.24	1.36	0.66	1.32	0.54
2009	0.93	0.30	1.34	0.64	1.54	0.65
2010	1.42	0.51	1.22	0.53	1.42	0.57

Source: Annual Reports from 2001 to 2010.

Inferences: from the Table 1 it is observed that the result of two important liquidity ratios viz., current ratio and acid test ratio are not satisfactory from 2001 – 2010 for selected Dalmia Bharat Ltd, KCP Ltd and Kesoram Industries Ltd. Except, in the case of Dalmia Bharat Ltd and Kesoram Industries Limited in the initial year 2001 are able to meet the standard norm of the

liquidityratio. The overall results reveal the poor liquidity position of the Selected Cement Companies the study period(2001-2010).

Working capital is the difference between current assets and current liabilities.it plays a significant role to meet the day-to day operations of the company. There is a dire need to have a sufficient funds at hand to meet successfully all current operations' of the firm such as wages, materials and other expenses.in this study a few selected working capital ratios are calculated to know the working capital management efficiency of the selected cement companies. The results are provided in the table 4.2.

Table 4.2 Working Capital Ratios

Year	Dalmia Bharat Ltd				KCP Ltd				Kesoram Industries Ltd			
	ITR	ICR	DTR	DCP	ITR	ICR	DTR	DCP	ITR	ICP	DTR	DCP
2001	1.67	215.56	10.60	33.96	3.16	113.92	9.26	38.87	5.25	68.57	5.80	62.06
2002	1.66	216.86	12.89	27.92	2.77	129.96	10.41	34.58	6.52	55.21	7.33	49.11
2003	2.33	154.50	16.55	21.75	3.35	107.46	9.04	39.82	5.33	67.54	7.59	47.43
2004	1.93	186.52	14.17	25.40	3.38	106.50	8.72	41.28	5.90	61.01	6.57	54.79
2005	2.01	179.10	8.73	41.23	3.06	117.64	8.91	40.40	5.71	63.04	7.05	51.06
2006	2.53	142.29	9.59	37.53	2.71	132.84	11.77	30.58	5.87	61.32	8.85	40.67
2007	3.68	97.82	11.98	30.05	2.98	120.80	8.95	40.22	4.80	75.00	9.03	39.86
2008	2.02	178.21	13.98	25.75	3.80	94.73	6.43	55.98	5.26	68.44	10.99	32.75
2009	2.36	152.54	8.22	43.79	3.23	111.45	5.45	66.05	5.53	65.09	10.25	35.12
2010	2.37	151.89	10.02	35.92	3.19	112.85	6.52	55.21	4.46	80.71	8.75	41.14

Source: Annual Reports from 2001 to 2010.

Dalmia Bharat Ltd: The ITR is increasing from 1.67 to 2.37 and fluctuations during the study period. The high ITR is 3.68 and less ITR is 1.66. ICP is fluctuation during the study period. The high ICP is 216.86 in 2002 and low ICP is 97.82 in 2007. The DTR is fluctuating during the study period. The low DTR is 8.22 in 2009 and high 16.55 in 2003.The high DCP is 43.79 in 2009 and low 21.75 in 2003. Overall ITR and DCP is low during the study period, indicates not good performance in inventory and debtors.

KCP Ltd : The ITR is low in 2006 (2.71) and high 3.80 in 2008.The low ICP is 94.73 in 2008 and high ICP is 132.84 in 2006.DTR decreased from 10.41 to 6.52 and fluctuations during the study period, DTR is low in 2009 (5.45) and high 11.77 in 2006. DCP increased from 34.58 to 55.21, low number of days 30.58 in 2006 and high number of days is 66.05 in 2009.ICP and DCP are high during the study period, not good for the company. So, the company takes measures to reduce the days in ICP and DCP.

Kesoram Industries Ltd: TheITR is decreased from 5.33 to 4.46; high ITR is 5.90 in 2004 and low is 4.46 in 2010. ICP is high in 2010 (80.71) and low in 55.21 in 2002. DTR is increased from 5.8 to 8.75, low DTR is 5.8 in 2001 and high 10.99 in 2008. DCP is high (62.06) in 2001 and low is 32.75 in 2008 during the study period. ITR and DTR ratios are low in study period, the company take necessary steps for improve the ITR and DTR.

The long-term financial soundness of any business can be judged by its long-term creditors by testing its ability to pay interest charges regularly and its ability to repay the principal as per schedule. Thus long-term financial soundness (or solvency) of any business is examined by calculating ratios popularly, known as leverage of capital structure ratios. These ratios help us the interpreting repay long-term debt and other obligations. The table 4.3 represents the selected solvency ratios from the 2001-2010.

Table 4.3: Solvency Ratios

	Dalmia Bharat Ltd					KCP Ltd					Kesoram Industries Ltd				
Year	WC/TA	RE/TA	EBIT/TA	EQ/TA	SA/TA	WC/TA	RE/TA	EBIT/TA	EQ/TA	SA/TA	WC/TA	RE/TA	EBIT/TA	EQ/TA	SA/TA
2001	0.33	0.05	0.13	0.49	0.69	0.02	0.03	0.12	0.58	0.67	0.21	0.49	0.16	0.38	1.17
2002	0.16	0.04	0.12	0.55	0.69	-0.04	0.05	0.12	0.71	0.71	0.01	0.05	0.16	0.43	1.43
2003	0.12	0.03	0.08	0.55	0.62	-0.02	-0.01	0.03	0.61	0.74	0.02	0.03	0.16	0.46	1.59
2004	0.14	0.04	0.08	0.55	0.58	0.00	0.00	0.08	0.62	0.79	0.12	0.08	0.16	0.47	1.79
2005	0.09	0.03	0.07	0.41	0.52	0.02	0.06	0.14	0.67	0.93	0.10	0.04	0.18	0.46	1.73
2006	0.02	0.07	0.07	0.38	0.51	0.09	0.10	0.15	0.64	0.97	0.12	0.04	0.13	0.42	1.68
2007	- 0.11	0.12	0.14	0.42	0.55	0.04	0.22	0.38	0.66	1.17	0.15	0.18	0.28	0.45	1.53
2008	-0.01	0.12	0.17	0.42	0.53	0.13	0.27	0.43	0.77	1.39	0.08	0.18	0.32	0.47	1.44
2009	-0.01	0.04	0.14	0.35	0.48	0.12	0.21	0.31	0.78	1.13	0.10	0.11	0.19	0.40	1.18
2010	0.07	0.03	0.11	0.32	0.50	0.05	0.11	0.20	0.59	0.73	0.09	0.05	0.14	0.33	1.01

Source: Annual Reports from 2001 to 2010.

Dalmia Bharat Ltd

The ratio of working capital to total assets of the company is changed from 0.33 to 0.07 during the study period. It is showing inefficient utilization of working capital. The retained earnings to total assets fluctuated during the study period; it indicates retained earnings are low. The ratio of EBIT to Total assets is low ratio during the study period, indicates that operating profit of the company low. The Equity to total assets ratio is low during the study period. It refers that interest of shareholders is low due to profit of the company low. The sales to total assets ratio is decreased from 0.69 to 0.50 during the study period, shows that satisfy the moderate level sales of the company. By and large solvency position of the company is not good.

KCP Ltd

The working capital to total assets ratio of the company varied from – 0.04 to 0.13 during the study period, showing inefficient mobilization of working capital. The ratio of retained earnings to total assets is positive in all years of study except in the 2003, it indicates retained earnings arelow. The EBIT to total assets ratio is fluctuated during the study period, it shows operating profit of the company low. The equity to total assets ratio varied from 0.58 to 0.78 during the study period, it shows that the company maintain equity position at satisfactory level. The ratio of sales to total assets varied from 0.67 to 1.39 during the study period, indicating that the sales of the company is low compared to total assets invested by the company. Overall the solvency position of the company is average.

Kesoram Industries Ltd

The working capital to total assets ratio of the company varied from 0.01 to 0.21 during the study period, showing inefficient mobilization of working capital. The retained earnings to total assets ratio of the company fluctuated and low during the study period, indicates that retained earnings mobilization is low. The ratio of EBIT to total assets varied from 0.12 to 0.32 during the study period, shows operating profit of the company is low. The ratio of equity to total assets fluctuated during the study period indicating low equity maintained by the company. The sales to total assets ratio decreased year by year indicating that sales of the company low when compared to invest in total assets by the company. Finally the solvency position of the company is average.

4.1. Z – Score Analysis: To test the bankruptcy and financial risk of the selected companies of the study, we selected Edward Altman's Multiple Discriminant Analysis. The results are presented in the table 4.1.1

Table 4.1.1: Z – Score values

Year	Dalmia Bharath Ltd	KCP Ltd	Kesoram Industries Ltd
2001	1.57	1.30	2.36
2002	1.34	1.38	2.13
2003	1.20	1.06	2.29
2004	1.07	1.28	2.60
2005	0.99	1.69	2.38
2006	0.96	1.82	2.35
2007	1.18	1.76	2.81
2008	1.32	3.34	2.81
2009	1.08	2.65	2.08
2010	1.04	1.70	1.66

Source: Annual Reports from 2001 to 2010.

Figure 4.1.2 : Z-score analysis
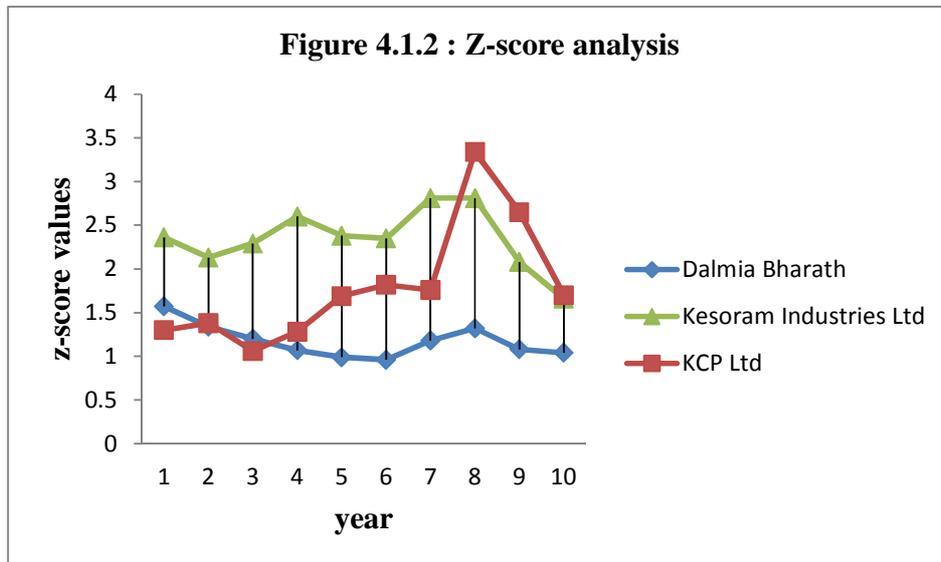
The Z – Score ofDalmia Bharat Ltd decreased from 1.57 to 1.04 during the study period, it is less than 2.9 indicate poor financial performance leads to bankruptcy. However the company came to know the financial performance and take measures to improve its financial performance. The Z – Score of KCP Ltd is showing fluctuated trends during the study period indicative of poor financial performance but not leading to bankruptcy because, the Z–Score values in between 1.21 and 2.9 during the study period. The Kesoram Industries Ltd Z-Score values are less than 2.9 during the study period. Hence, it has poor financial performance in the study period.

5.0 CONCLUSION:

There is a need for predicting financial failure on-time for taking curative and corrective measures in relating to financial investments, lending and borrowings. The problem of business failures are attributed to both financial and nonfinancial causes, such as poor planning, improper sales forecasting, inexperience management, technological advances, excessive manpower, frauds and changes in tastes and preferences of customers. The prediction of business failure is an important for taking timely corrective and remedial measures for protecting business from the problem of bankruptcy.

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