Research Guru
Online Journal of Multidisciplinary Subjects (ISSN : 2349-266X)
UGC Approved Journal No. 63726
Impact Factor: 4.081
Volume-12, Issue-3, December-2018 www.researchguru.net

Solvency Analysis of Textile Companies in India

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Abstract

The Solvency rating analysis with the help of Z-score model was enunciated by Professor Edward Altman in the year 1968. It was the first multivariate credit scoring model. The model can predict the likelihood that a firm will go bankrupt by combining five financial statement and market value measures to produce the Z-score. It measures the corporate financial health and provides a foundation for more secure investment decisions and better assessments of firms' credit worthiness. The Solvency ratings done with the Altman model of Z-score would provide the output of a credit strength test that gauges a publicly traded manufacturing company's likelihood of bankruptcy. In terms of the textile companies in India the given analysis is done for the first time. The current scenario of big companies and the fluctuations that are observed in the financial markets have brought awareness regarding the suitable tools for predicting the financial distress which is done with the given study. There were five ratios calculated for finding the Z-score. Zone. In the research paper the relationship between the Profit after Tax and Z-score is explained to further substantiate the solvency position of the textile companies. The regression technique is used for this purpose. It helps in predicting the changes in the dependent variable (Profit after Tax) which can be explained by the independent variable (Z-score).

Key words: Altman Z Score Model, Profit after tax, R square statistic, solvency analysis, textile companies

Introduction

The solvency analysis considered the seven variables such as Working Capital, Total Assets, Retained Earnings, Earnings before Interest and Taxes (EBIT), Market Value of Equity, Book Value of Total Liabilities and Sales. There are five ratios calculated with the help of these variables. These five ratios would be used for calculating the Z-score. Further the Altman Z Score model stated the zones of financial distress on the basis of Z score. If the Z score is greater than 2.99, then the company is considered to be in safe zone. If the Z score lies between 1.81 and 2.99 it is considered to be Grey Zone and if the Z score is less than 1.81, then it is considered to be the distress zone. It should be noted that Z-score is not 100% accurate. It is recommended that one should compare a company's Z-score over time in order to make an assessment of how it is doing. The model has high accuracy and is still quite robust despite being developed over 40 years ago. The Z-score model has become a popular tool among analysis because it has proved to be one of the best statistical models for determining the health of companies and estimating the likelihood of bankruptcy within 1 to 2

years. That is the reason for selecting Z-score model as the basis for the study of Solvency Rating.

Literature Review

(Grice & Ingram, 2012) had studied about the generality of application of Z-score. The studies shows that the Z-score which was originally developed for the bankruptcy could also be used for the prediction of financial distress of a firm.

(Calandro, 2013) gives an analysis of using the Altman Z-score as a strategic assessment and performance management tool. It could be employed as a distress metric in the areas like credit risk analysis, merger and acquisition analysis and turnaround management. The article provides manager's perspective on new research which indicates the potential of a popular financial distress metric in order to provide the insight in the entrepreneurship and strategic management areas.

(Hayes, Hodge, & Hughes, 2014) had conducted a study to know the efficacy of Altman's Z- score. They had selected few firms doing the specialty retail business and had taken their data for the period of 2014 and 2015. In eight comparisons, four in 2014 and four in 2015 the Z- score accurately predicted the bankruptcy filing for 94% of the time and accurately predicted financial distress for over 90% of the time.

(Lifschutz & Jacobi, 2015) had studied upon the forecasting of financial failure of the publically traded companies in Israel with the help of the Altman Z-score. It is essential for the users of financial statements because it can predict the bankruptcy of a company. With the help of the five ratios this model can make a good forecast about the financial collapse of a company.

(C.S. 2016) had done a study in order to identify the solvency of Nifty 50 companies and sectors. His study revealed that there were 26 companies which were in the Safe Zone, 9 companies in the Grey Zone and 5 companies in the Distress Zone. Z-score was good in the technology, FMCG and Health care sector. While the poor performers were Electricity Generation, Distribution, Metals and Oil & Gas sector. He concludes that Z-score could only try to assess the likelihood of economic bankruptcy.

(Patanwala, 2017) had examined the financial distress among the major players in the FMCG market. It would help the investors in making the decision regarding whether to buy or sell the stock of a company. It is beneficial in knowing that which major player may be in the financial stress and on the verge of bankruptcy. He had used the ANOVA test to know that whether the mean Z-score of the companies are statistically different from each other or not.

(Al-Rawi, 2018) had used the Altman Equation for predicting the bankruptcy in an industrial firm. He said that the financial statement analysis could be helpful for the creditors, managers and investors for answering various questions like Is the market of company growing or shrinking? Does the company effectively use the non-owner financing? Can the company pay the interest and principal on its debt? Etc. Hence to reduce the risk, uncertainty, and avoid bankruptcy he used the Z-score analysis to predict the firm's insolvency.

The relatable research on credit rating agencies are widely available but only limited ones had the application of Altman Model to examine the solvency of a

company. There were none article or paper which showed the application of Altman Model in context of the Solvency rating for Textile Industry. The major papers were focused on the working of the Credit Rating Agencies and the benefits of Rating for the clients. Also there were very few papers which were available in regard to India Ratings & Research. Thus, this research paper as a part of research gap will be covering a major aspect of application of Altman Model to review the solvency of the major textile companies in India.

Research Objective

To examine the impact of the Z score as identified from Altman Model on the Profit after tax of selected textile companies in India.

Research Methodology

The sampling process has been used for the study. The samples of the population (top 10 textile companies of India.). The non-probability convenience sampling method has been used in the research. The sample size is of 10 textile companies. The samples include the top ten textile companies of India based on market capitalization. For the research work the secondary data have been used. The secondary data have been collected for the period 2014-2018 form the money control website. The seven variables that are important and considered here are Working Capital, Total Assets, Retained Earnings, Earnings before Interest and Taxes (EBIT), Market Value of Equity, Book Value of Total Liabilities and Sales. There are five ratios calculated with the help of these variables. These five ratios would be used for calculating the Z-score. The topic of the research work is a theoretical topic and there is no need to have experiments.

Research Analysis

It describes the impact of the Z score on Profit after tax of selected textile companies in India. Hence the regression technique is used to identify the impact. If the value of R^2 statistic is more than 0.7, then it is suggestive measure of significant impact.

Results and Interpretations

Table 1: Correlation & Regression Summary Statistics

Sr. No.	Company	Dependent Variable	Independent Variable	R Statistic	R^2 Statistic	Inference
1	Raymond Ltd	Profit after tax	Z Score	0.629	0.395	Moderate Positive Correlation & Insignificant Impact
2	Bombay Dyeing	Profit after tax	Z Score	0.988	0.975	Very Strong Positive Correlation & Significant Impact
3	Jindal Worldwide Ltd.	Profit after tax	Z Score	0.854	0.730	Very Strong Positive Correlation & Significant Impact
4	Ruby Mills	Profit after tax	Z Score	0.075	0.006	Very Weak Positive Correlation & Insignificant Impact

5	Vardhman Textiles Ltd.	Profit after tax	Z Score	0.763	0.582	Strong Positive Correlation & Insignificant Impact
6	Arvind Ltd.	Profit after tax	Z Score	0.350	0.123	Weak Positive Correlation & Insignificant Impact
7	Lakshmi Mills	Profit after tax	Z Score	0.607	0.368	Moderate Positive Correlation & Insignificant Impact
8	Welspun India Ltd	Profit after tax	Z Score	0.915	0.837	Very Strong Positive Correlation & Significant Impact
9	Reliance ChemoTex	Profit after tax	Z Score	0.525	0.276	Moderate Positive Correlation & Insignificant Impact
10	SRF Ltd.	Profit after tax	Z Score	0.861	0.742	Strong Positive Correlation & Significant Impact

Source: Spss output

Interpretation Company-wise

1. **Raymond Ltd**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.629) shows a moderate positive correlation between the variables under investigation. This means the null hypothesis is accepted. Thus there is no significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.395. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 39.5%, thus, leaving out 60.50% (100% - 39.50%) unexplained. This means that null hypothesis is accepted. Thus there is no significant impact of Z score on Profit after tax in case of Raymond Ltd.

2. **Bombay Dyeing**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.988) shows a very strong positive correlation between the variables under investigation. This means the null hypothesis is rejected. Thus there is significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.975. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 97.5%, thus, leaving out 2.50% (100% - 97.50%) unexplained. This means that null hypothesis is rejected. Thus there is significant impact of Z score on Profit after tax in case of Bombay Dyeing.

3. **Jindal World wide**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation

coefficient (r = 0.854) shows a very strong positive correlation between the variables under investigation. This means the null hypothesis is rejected. Thus there is significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.730. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 73%, thus, leaving out 27% (100% - 73%) unexplained. This means that null hypothesis is rejected. Thus there is significant impact of Z score on Profit after tax in case of Jindal World wide

4. **Ruby Mills**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.075) shows a very weak positive correlation between the variables under investigation. This means the null hypothesis is accepted. Thus there is no significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.006. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 0.6%, thus, leaving out 99.40% (100% - 0.60%) unexplained. This means that null hypothesis is accepted. Thus there is no significant impact of Z score on Profit after tax in case of Ruby Mills.

5. **Vardhman Textiles Ltd.**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.763) shows a very strong positive correlation between the variables under investigation. This means the null hypothesis is rejected. Thus there is significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.582. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 58.20%, thus, leaving out 41.80% (100% - 58.20%) unexplained. This means that null hypothesis is accepted. Thus there is no significant impact of Z score on Profit after tax in case of Vardhman Textiles Ltd.

6. **Arvind Ltd**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.350) shows a weak positive correlation between the variables under investigation. This means the null hypothesis is accepted. Thus there is no significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.123. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 12.30%, thus, leaving out 87.70% (100% - 12.30%)

unexplained. This means that null hypothesis is accepted. Thus there is no significant impact of Z score on Profit after tax in case of Arvind Ltd.

7. **Lakshmi Mills**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.607) shows a moderate positive correlation between the variables under investigation. This means the null hypothesis is accepted. Thus there is no significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.368. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 39.5%, thus, leaving out 63.20% (100% - 36.80%) unexplained. This means that null hypothesis is accepted. Thus there is no significant impact of Z score on Profit after tax in case of Lakshmi Mills.

8. **Welspun India Ltd**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.915) shows a very strong positive correlation between the variables under investigation. This means the null hypothesis is rejected. Thus there is significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.837. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 83.70%, thus, leaving out 16.30% (100% - 83.70%) unexplained. This means that null hypothesis is rejected. Thus there is significant impact of Z score on Profit after tax in case of Welspun India Ltd.

9. **Reliance ChemoTex**

   The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.525) shows a moderate positive correlation between the variables under investigation. This means the null hypothesis is accepted. Thus there is no significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.276. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 27.60%, thus, leaving out 72.40% (100% - 27.60%) unexplained. This means that null hypothesis is accepted. Thus there is no significant impact of Z score on Profit after tax in case of Reliance Chemo Tex.

10. **SRF Ltd.**

    The R-value: shows the direction and the strength of the correlation. The bigger the value the more significant it is. In this case, the Pearson correlation coefficient (r = 0.861) shows a strong positive correlation between the variables under investigation. This means the null hypothesis is rejected. Thus

there is significant relationship between profit after tax and Z score. Further R^2 statistic helps in explaining changes in the dependent variable (profit after tax). Based on the results the (R square) value is 0.742. This means that the independent variable (Z score) predicts the changes in dependent variable (profit after tax) by 74.20%, thus, leaving out 25.80% (100% - 74.20%) unexplained. This means that null hypothesis is rejected. Thus there is significant impact of Z score on Profit after tax in case of SRF Ltd.

Conclusion

Thus we can conclude that in the recent era bankruptcy is a serious problem for corporate world. There are many companies which are struggling in the market to manage sound solvency position. There is a high requirement to predict about the financial position in the early stage. In the given study from the Z-score there are chances to predict the PAT and know how profitable the company will be in future. So the given study provides necessary information to management of sample units (i.e. the selected textile companies) to predict financial bankruptcy and financial position of units. Furthermore the study has a relevance as regard to the investment decision in open market. The ratios that are a part of Altman Model shows the utilization of power of fund. Some of the management decisions could be taken with the help of the given study.

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