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A study on bankruptcy prediction of selected paint companies with reference to springate's model

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Abstract
The main aim of this study is to predict the financial failure of selected paint companies in India. In this study researcher has select two companies namely Akzo Nobel and Shalimar paints by using simple random sampling. For the bankruptcy prediction researcher has use Springate's model as a measuring tool. Researcher used Independent t-test for hypothesis testing. The major finding of this study is Akzo Nobel is a Performant company in all the selected financial years whereas Shalimar paints is a risk of bankruptcy in all selected financial years.

Keywords: bankruptcy prediction, springate's model, paint industry

Introduction

In this current scenario easy availability of housing loan and rapid growth of urbanization this Paint Industry play very important role in economic sector. Average growth increased by around 50% of revenue in this sector. So that this industry considered as a prime driver of economic growth. Paint industry has classified in two parts: Decorative Paints and Industrial Paints. Decorative Paints are usually meant for the housing sector. Distemper is mostly affordable by all and used in the suburban as well as rural markets. Amusingly, 20% of all decorative paints in India are distempers. This products are highly in require in countries of US, China, India, UK, Australia, Pakistan, HONG KONG, Canada, etc forming the turning points in the paint industry of India.

Springate's model

Gordon L.V Springate developed a bankruptcy prediction model in the year 1978. It is based on four financial ratios. Springate's model are as follow:

Z = 1.03X1+3.07X2+0.66X3+0.4X4

X1= Working capital/Total Assets
X2= EBIT/Total Assets
X3= EBT/Current Liabilities
X4= Sales/Total Assets.

Table 1

Z Criteria	Result
Z>0.826	The company is Performant
Z<=0.826	The company is bankrupt

Review of Literature

(Alali, 2018) [2], in this paper researcher was analysed one of the risks investors face when investing in any company is the risk of bankruptcy, with leman brothers setting the best example for that matter. It has been well familiar that such collapse does not come all of a sudden, but there are some signs that would indicate such scenario. Researcher was found out one of the most used models for predicting financial distress for any company was Altman's z-score model.

(Yaser, 2019) [5], has analysed financial soundness of the insurance sector use the Altman model to know the failure indicators. In this study researcher measures the relationship between Z-score and share price of these companies. This study was based on the belief that financial reports provide information to investors which can be taken as indicators of the financial failure or success of companies. Major findings were no statistically significant relation between Altman's score and the share price indicating that the financial failure score. (Hantono, 2019) [4], conduct a study with aims to detect the financial distress on consumer goods companies listing on the Indonesia stock exchange for the five years period of study started 2012-13 to 2016-17 by using Altman score, Grover score, Springate's score, Zmijewski score. 24 companies are taken for the analysis. Purposive sampling method was used to select a sample. Researcher was concluding that Springate's model was found best.

Objectives of the Study

To measure financial distress of selected Paint companies.
To estimate risk of bankruptcy with the help of Springate's model.
To know which company is performing best.

Hypothesis of the Study

H0= There is no significant difference between z-score of selected Paint companies in India at 5% level of significance.
H1= There is a significant difference between z- score of selected Paint companies in India at 5% level of significance.

Research Design

Table 2

Types of Study	Analytical study
Types of Data and Data collection	Secondary data calculated from moneycontro.com
Period of Study	Five years study period started from 2016-17 to 2020-21
Target Population	In the present study all Paint companies in India considered as a target population.
Sampling Technique	Simple Random Sampling (lottery method)
Selected Sample Units	1. Akzo Nobel 2. Shalimar Paints
Statistical tools	Independent t-test assuming equal variance
Accounting tools	Ratios given in Springate's model

Data Analysis and Interpretation

Table 3: Table showing Z-score of selected companies

Akzo Nobel	**1.03X1**	**3.07X2**	**0.66X3**	**0.4X4**	**Z-score**	**Criteria**
2016-17	0.21719	0.17185	0.4085	1.3657	1.567185	Performant
2017-18	0.29606	0.12692	0.326	1.2187	1.397234	Performant
2018-19	0.25035	0.15049	0.3569	1.3916	1.512034	Performant
2019-20	0.25879	0.13899	0.3409	1.1446	1.376077	Performant
2020-21	0.25929	0.11	0.2549	0.9573	1.155926	Performant
Average z-score					1.4017	Performant
Shalimar paint	1.03X1	3.07X2	0.66X3	0.4X4	Z-score	Criteria
2016-17	-0.0181	-0.0291	-0.05	0.6797	0.13085	Bankrupt
2017-18	-0.1748	-0.1406	-0.207	0.5683	-0.52079	Bankrupt
2018-19	0.04871	-0.189	-0.415	0.4994	-0.60433	Bankrupt
2019-20	-0.0827	-0.1075	-0.236	0.6617	-0.30634	Bankrupt
2020-21	-0.1061	-0.0481	-0.094	0.6687	-0.05131	Bankrupt
Average z-score					-0.27039	Bankrupt

(Sources: Computed from moneycontrol.com)

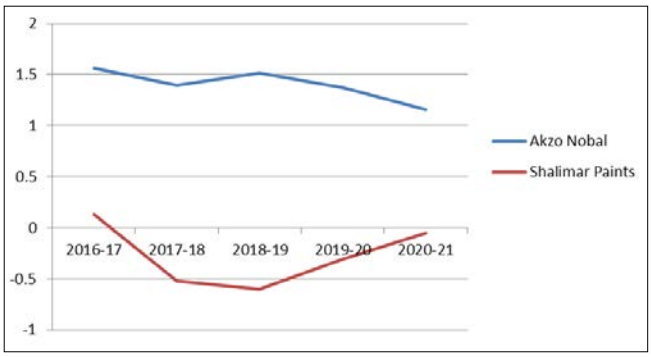

Fig 1: Springate's Z-score

Interpretation

From the above table and graphical representation shown the Springate's z-score of Akzo Nobel and Shalimar Paints. Average z-score of Akzo Nobel was 1.4017. In the year 2016-17 z-score of Akzo Nobel was 1.5671 and it was decreased in the 2017-18 up to 1.39172. In the year 2018-19 z-score was 1.5120 and it decreased up to 1.3761 in the year 2019-20 and also decreased in the year 2020-21 up to 1.559. The data of Akzo Nobel was in the fluctuated trend. In all the selected financial years Akzo Nobel was a Performant company because z- score of this company was greater than 0.826. Average z-score of Shalimar paints was -0.2739. In the year 2016-17 it was seen in positive z-score that was 0.13085 and yet it was a bankrupt because its z-score was less than 0.826. Remaining all the selected financial years it was seen in negative score. It means the performance of Shalimar Paints was very poor and totally bankrupt company as per Springate's model.

Independent t-test

Table 4

t-Test:	**Variable-1**	**Variable-2**
Mean	1.401691	-0.27039
Variance	0.02516	0.096125
Observations	5	5
Hypothesized Mean Difference	0	
Df	8	
t Stat	10.73587	
t Critical two-tail	2.306004	

The calculated value of Independent t-test was 10.74 where as the table value was 2.31 which were lower than the calculated value. So that, here our H0 (null hypothesis) was rejected and H1 (Alternative hypothesis) was accepted. It means there is a significant difference between the Springate's Z-score.

Conclusion

In this study researcher was analysed the risk of bankruptcy in selected sample companies: Akzo Nobel and Shalimar Paints. This study was conclude that the Akzo Nobel was Performant company in all the selected financial years and Shalimar Paints was Bankrupt company in all the selected financial years as per the failure prediction model. The researcher was found that working capital of Shalimar paints was adverse (negative) in all the years. Researcher was also suggesting that Shalimar Paints should manage their liquidity position and it was helpful to become a Performant company.

References

1. (n.d.). Retrieved from www.moneycontrol.com.
2. Alali M. The application of Altman's z- score model in determining the financial soundness of healthcare companies listed in Kuwait stock exchange. International Journal of economics papers, 2018.
3. CR K. Research methodology. New Delhi: New Age International (p) Ltd, 2014.
4. Hantono. Predicting financial distress using Altman score, Gover score, Springate's score, Zmijeweski score. Accountability journal creative common attribution on commercial international licence, 2019.
5. Yaser A. Exploring the probability of bankruptcy for conventional insurance companies listed at Kuwait stock exchange and its effect on their share price. The journal of social sciences research,2019:5(9).