Corporate Drift to Financial Distress: Analysis of Mumbai Based Pharmaceutical Companies

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Abstract

Indian pharmaceutical industry is one of the prominent players of manufacturing sectors catering almost 95% of the health care needs of the country. Out of all pharmaceutical manufacturers, 29.7% are based in Maharashtra. The present study is under taken to predict financial distress of 06 selected Mumbai based pharmaceutical companies i.e. Cipla Ltd., Lupin Laboratories, Aurobindo Pharma, Arati Drugs, JB Chemicals and Indoco Remedies. Altman's Z score model has been applied over a period of 10 years i.e. 2005 to 2014. The study revealed that, Cipla Ltd., Lupin Labs, JB Chemicals and Indoco Remedies have Z Scores above 2.9 during all years under study. These four companies have very strong financial position. The Z scores of Arati Drugs stayed in bankruptcy zone in 2006 & 2008 and in grey zone in rest years under study. The Z scores of Aurobindo Pharma stayed in both very healthy as well as grey zone during the study period. The analysis revealed healthy financial position of Arati Drugs and Aurobindo Pharma and there are no possibilities of bankruptcy in future next two years. Arati Drugs need to give more emphasis on better liquidity management to improve its financial performance.

Key Words: Altman's Z score model, bankruptcy, financial distress

Introduction:

Indian pharmaceutical industry is one of the prominent players of manufacturing sectors catering almost 95% of the health care needs of the country. Indian pharmaceutical industry ranks at 3rd and 14th in terms of volume and value of production in global pharmaceutical industry. Export of Indian pharmaceutical industry is increasing at a rate of 13% during 2010 to 2014 and there have been an increase of INR 200-500 crore per year in pharmaceutical exports. According to the first census of Indian pharmaceutical industry in 2010, there were 10563 pharma manufactures in the country. Two-third of the total Indian pharmaceutical units are concentrated in five states i.e. Maharashtra (29.7%), Gujarat (14.4%) and west Bengal (7.2%), Andhra Pradesh (6.9%)

Tamilnadu (5.4%) whereas, rest all states account for only one-third of the pharma manufacturers in the country. In India most pharma manufactures are located in Goa, Mumbai, Pune and Hyderabad.

Literature Review:

Saif H and Al Zaabi (2015) has applied Z score on Islamic banks of UAE and compared past three years score with current year's score. They found that, the Islamic banks of UAE are financially sound and healthy and the ratios used for the Z score calculation can be considered to provide valuable instrumental indicators.

Panda and Behera (2015) had attempted to predict the financial distress of five pharmaceutical units for a period of 11 years from 2002 to 2012. The study revealed that, Ranbaxy Lab is in the threshold of bankruptcy and Glaxo Smithkline pharmaceutical is having a very healthy financial position. Cipla Ltd., Dr. Reddy's Labs and Sun pharmaceuticals found to be in grey zone which necessitate more focus on generation of sales revenue in future to improve financial performance.

Nilanjana Kumari (2013) has evaluated the financial health of MMTC of India through Z score model. From the study of five years (2007-08 to 2011-12) it was found that, the profit earning capacity and short-term investing capacity of MMTC was quite good but its financing position in assets is relatively poor. MMTC's Z score indicated a strong financial position of the company.

Dan Hu & Haiya Zheng (2011) had made a study to investigate the degree of corporate financial distress and its relationship with ownership structure. The study was made on 378 Chinese listed companies who got into financial distress between 2000 and 2008 by applying the panel data analysis. The investigation revealed that, a concentrated ownership structure is negatively related to the degree of financial distress. The study further found that, a state owned status helps a firm in decreasing their degree of financial distress and the separation of cash-flow rights and control rights is positively related to degree of financial distress. Arindam (2006) had applied Altman's Z score model as well as logistic regression model to predict the probability of default of Indian corporate bonds. He revealed that, inclusion of financial and non-financial parameters would be useful in more accurately describing default risk.

Objectives of the Study:

The objectives of the study are as follows:

1. To analyse the financial distress position of the selected Mumbai based pharmaceutical companies.
2. To give suggestions on the basis of findings of the study.

Methodology of the Study

The present study has applied Altman's Z score model for evaluating bankruptcy position of six Mumbai based pharmaceutical companies i.e. Cipla, Lupin Labs, Aurobindo Pharma, Arati Drugs, JB Chemicals and Indoco Remedies. The study is based on a period of 10 years from 2005 to 2014. Only Secondary data collected from the CMIE prowess database and BSE website has been taken for analysis purpose.

Altman's Z Score Model

Altman's Z score model is a multivariate model developed by Edward. I. Altman in 1968. Applying this model one can predict future bankruptcy of a company by finding out Z scores of the company.

$Z = 1.2\,X_1 + 1.4\,X_2 + 3.3\,X_3 + 0.6\,X_4 + 1.0\,X_5$

Where X_1=   Net working capital /total assets.

X_2=   Retained earnings / total assets.

X_3 =   EBIT/total assets.

X_4=   Market value of equity/book value of total liabilities.

X_5=   Sales/total assets

Z=   Overall Z score.

The Z score of a company is interpreted as follows:

Z Score	Financial position	Remark
Below 1.8	Bankruptcy Zone	Likely to face bankruptcy within two years
Between 1.8 and 2.99	Grey Zone	Financial viability is treated as healthy
Above 2.99	Very healthy	Financial viability is very stable and treated as too healthy

Data Analysis:

Cipla

The Z score of Cipla during the period under study is presented in table no 1 and figure no 1. The Z scores of Cipla always stayed above 2.99 and varied within a range between 7.38 (2009) and 18.59(2010). During the last three years, a decline in the Z score was observed which was due to higher proportionate increase in the total assets and decrease in net working capital. However, the ratio stayed much above 2.99 during the last three years.

This revealed a very healthy financial position of Cipla during the period under study. The healthy performance of Cipla is reflected in higher market value during the study period. The company has generated higher sales, higher EBIT and higher retained profits in comparison to its total assets. Again, its working capital position was always positive during the period under study. From the analysis it can be concluded that, the financial position of Cipla is very strong and has a very strong future prospects.

Table no.1

			Z Scores Of Cipla			
	X1	X2	X3	X4	X5	Z-Score
2005	0.19	0.8	0.74	6.69	0.92	**9.34**
2006	0.19	0.78	0.79	10.78	0.89	**13.43**
2007	0.32	0.98	0.7	16.87	0.83	**19.7**
2008	0.19	0.88	0.57	7.26	0.75	**9.65**
2009	0.07	0.77	0.59	5.25	0.7	**7.38**
2010	0.15	0.94	0.64	16.19	0.67	**18.59**
2011	0.23	1.01	0.53	11.03	0.71	**13.51**
2012	0.25	1.07	0.62	15.27	0.73	**17.94**
2013	0.13	0.34	0.64	8.86	0.68	**10.65**
2014	0.06	0.29	0.52	8.39	0.66	**9.92**

Source: Computed

Figure 1

Z Score of Cipla
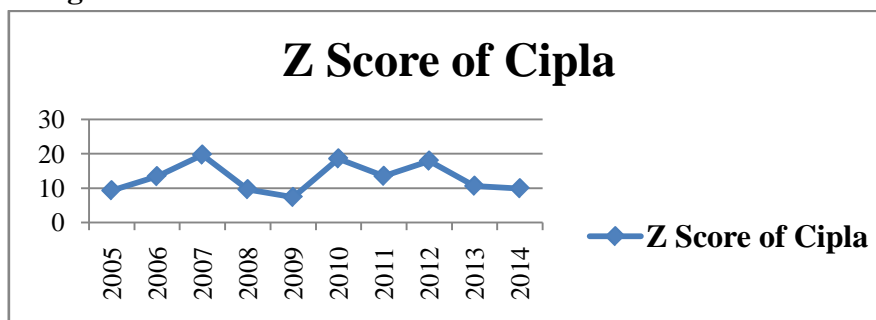
Lupin Labs

The Z score values of Lupin labs are presented in table no 2 and figure no 2. The Z scores of Lupin labs found to be in increasing trend during study period. The Z scores increased from 3.71 in 2005 to 22.91 in 2014 indicating a very healthy financial progress of the company during the study period. Among all five variables under study, X4 was found to have contributed highest to the higher Z score of the company. X1 of the company stayed negative in 2005 and stayed positive during rest years under review. This analysis reveals a very healthy liquidity position of the company. The retained profits of the company reduced during 2013 and 2014. However, its EBDITA during 2013 and 2014 was found to have increased proportionately. Hence Lupin's profitability as well as cumulative profit positions was strong during the period under study. Again the sales of the company were found to be increasing during the period. It can be concluded that, the company's financial position is very healthy and it is far away from financial distress condition in near future.

Table no. 2

	X1	X2	X3	X4	X5	Z-Score
Z Scores Of Lupin Labs						
2005	-0.04	0.49	0.37	1.96	0.93	3.71
2006	0.33	0.42	0.51	2.02	0.86	4.14
2007	0.38	0.49	0.7	2.39	0.9	4.86
2008	0.33	0.58	0.77	1.73	0.9	4.31
2009	0.09	0.53	0.57	1.99	0.88	4.06
2010	0.15	0.74	0.6	5.72	0.81	8.02
2011	0.07	0.78	0.57	6.61	0.81	8.84
2012	0.19	0.82	0.61	7.17	0.87	9.66
2013	0.31	0.26	0.88	10.21	1.01	12.67
2014	0.44	0.23	1.24	19.99	1.01	22.91

Source: Computed

Figure 2
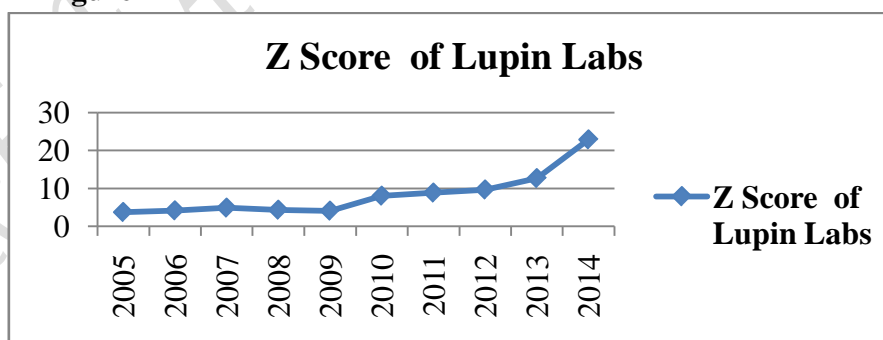
Aurobindo Pharma

Table no 3 and figure no 3, reveals that, the Z scores of the Aurobindo Pharma stayed above 2.99 (in very healthy zone) in 2006, 2010 2011 & 2014 and in grey zone in rest six years i.e. 2005, 2007, 2008, 2009, 2012 & 2013. From the analysis it was found that, the company has maintained a positive net working capital during the study period. Hence liquidity position was found to be satisfactory during the study period. The total assets of

the company has increased steadily from 1947.7 crore in 2005 to 8608.88 crore in 2014. The sales of the company has also increased from 1161.83 crore in 2005 to 7269.53 crore in 2014. Hence, the company has satisfactorily employed its total assets to generate sales during the period under study. A wide fluctuation in the market value of the company was observed, which led to significant variation in X4 variable during the study period. In 2012, a plunge in X3 was observed due to heavy decline in EBIT. This has resulted in a significant decrease in the Z score of the company from 3.25 in 2011 to 2.22 in 2012. However, the company has quickly recovered from plunge in EBIT in next year. A sharp decline was observed in X2 from 0.56 in 2012 to 0.13 in 2013. This lower value of X2 has kept Z score value of the company lower within gray zone during 2013. The Z value of the company has increased significantly from 2.3 in 2013 to 4.28 in 2014. From the above analysis it was found that, the company stayed in the grey zone or in very healthy zone during study period and its financial position found to be stable and healthy. Due to significant increase in the Z score to 4.28 in 2014, it is concluded that, there is no possibility of bankruptcy of the company during near future.

Table no. 3

Z Scores Of Aurobindo Pharma						
	X1	**X2**	**X3**	**X4**	**X5**	**Z-Score**
2005	0.12	0.55	0.25	0.85	0.6	2.37
2006	0.16	0.49	0.29	1.47	0.58	2.99
2007	0.28	0.38	0.41	0.95	0.59	2.61
2008	0.25	0.47	0.45	0.43	0.68	2.28
2009	0.14	0.44	0.53	0.23	0.69	2.03
2010	0.15	0.57	0.62	1.26	0.72	3.32
2011	0.25	0.6	0.57	1.11	0.72	3.25
2012	**0.18**	**0.56**	**0.16**	**0.61**	**0.71**	**2.22**
2013	**0.2**	**0.13**	**0.5**	**0.68**	**0.79**	**2.3**
2014	**0.3**	**0.24**	**0.79**	**2.11**	**0.84**	**4.28**

Source: Computed

Figure 3
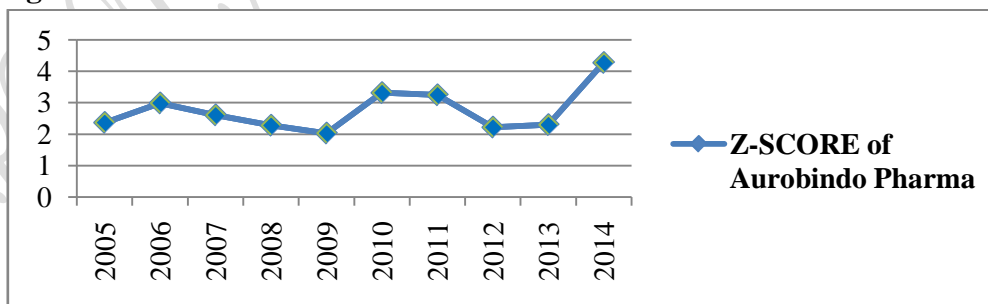
Arati Drugs & Pharmaceuticals Table no 4 and figure no 4 reveals that, the Z score values of Arati drugs stayed in bankruptcy zone during 2006 & 2008 and stayed within grey zone during rest of the period under study. The Z scores of the company varied within a range of 1.75 (2006) to 2.49(2014). The analysis of X1 revealed that, the company has maintained a negative working capital for the year 2011 & 2012 and negligible working capital in 2014. This indicates that the

company has maintained a very lower proportion of working capital during the study period. Analysis of X2 variables revealed that, the retained earning position of the firm with respect to the total assets of the firm was satisfactory. The company maintained X2 above 30% during the period under study. The analysis of X3 of Arati drugs revealed that, its EBIT position with respect to total assets remained healthy during the study period and varied within 33% to 60%. X4 values remained lower during the period under study. Its market price per share found to have declined continuously during the first five years under study and it recovered immediately from decline in 2010. However, the increase in market prices per share in the last five years could not increase the value of the X4 due to

substantial increase in total debt. The analysis of sales of the company indicates that, there is a continuous increase in total sales of the company during study period. Total sales increased from 265.27 crore in 2004 to 1044.35 crore in 2014. Hence, the company's performance in terms of sales is satisfactory. Value of X5 remained above 1 during the last six years of study. Hence, it is concluded that, the company's ability to generate sales from its employed assets is quite satisfactory. As the company's Z score remained above the bankruptcy threshold of 1.8 during the last six years under study, its financial position of the company are revealed to be healthy. The company is required to improve its liquidity position by improving its working capital in future to bring further improvement in its financial performance.

Table no. 4

			Z Scores Of Arati Drugs			
	X1	**X2**	**X3**	**X4**	**X5**	**Z-Score**
2005	0.08	0.32	0.41	0.51	0.92	2.24
2006	0.03	0.31	0.33	0.27	0.81	1.75
2007	0.07	0.35	0.35	0.19	0.91	1.87
2008	0.08	0.34	0.35	0.14	0.85	1.76
2009	0.05	0.39	0.51	0.11	1.06	2.12
2010	0.16	0.44	0.6	0.31	1.21	2.72
2011	-0.03	0.39	0.42	0.28	1.01	2.07
2012	-0.01	0.38	0.44	0.18	1.14	2.13
2013	0.02	0.04	0.57	0.22	1.23	2.08
2014	0	0.31	0.6	0.35	1.23	2.49

Source: Computed

Figure 4
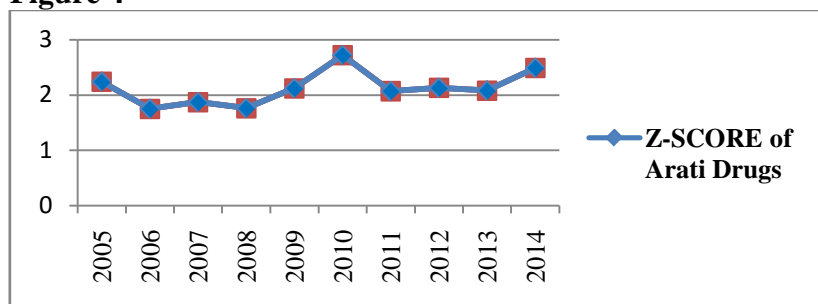
Jb Chemicals

The Z score of JB chemicals are presented in the table no 5 and figure no 5. It is found that, the company's Z score remained above 2.9 during all years under study. The Z scores varied within a range of 3.44 (2008) to 7.03 (2005).The Z scores values had an inclining trend from 3.44(2008) to 6.2 (2012). A sharp decline in the Z scores was observed during 2007 and 2013. During 2007, there was a heavy purchase of assets and also increase in total book debt leading to decline in the Z scores. In 2013, company's working capital position and EBIT had significantly declined leading to decrease in the Z score of the company. The X1 of the company found to be always positive indicating a satisfactory liquidity position of the company during the study period. Variable X2 of the company remained higher during first eight years and had a sharp decline in the last three years of study. The analysis revealed that, there was a sharp decline in retained earnings in last two years of study. The profitability position of the company found to be satisfactory except last two years of study. The market value of equity/total value of debt of the company was found to be satisfactory during the all years under study. The X4 (sales /total assets ratio) of the company had marginally decreased during the study period. X4 decreased significantly in 2012 due to sharp decrease in sales from 811.23crore (2011) to 651.76crore (2012). A gradual increase in total sales revenue of company was observed from 2012 onwards. Overall analysis of sales revenue of the company revealed that, its ability to generate sales revenue from its assets was average. The overall study of Z score of the company indicates that, the financial position of the company was healthy due to its healthy working capital, healthy reserve & surplus and healthy market value during the study period. Hence it can be concluded that, the company has no possibility of becoming bankrupt during near future.

Table no.5

Z Scores Of JB Chemicals						
	X1	**X2**	**X3**	**X4**	**X5**	**Z-Score**
2005	0.48	0.92	0.65	4.07	0.91	7.03
2006	0.48	0.87	0.65	3.94	0.95	6.89
2007	0.32	0.8	0.48	1.6	0.77	3.97
2008	0.36	0.84	0.46	1.01	0.77	3.44
2009	0.46	0.9	0.86	0.81	0.87	3.9
2010	0.58	0.95	0.6	1.71	0.79	4.63
2011	0.57	0.96	0.58	2.74	0.8	5.65
2012	0.31	1.11	2.48	1.75	0.55	6.2
2013	0.24	0.52	0.38	1.93	0.64	3.71
2014	0.17	0.2	0.35	2.87	0.71	4.3

Source: Computed

Figure 5
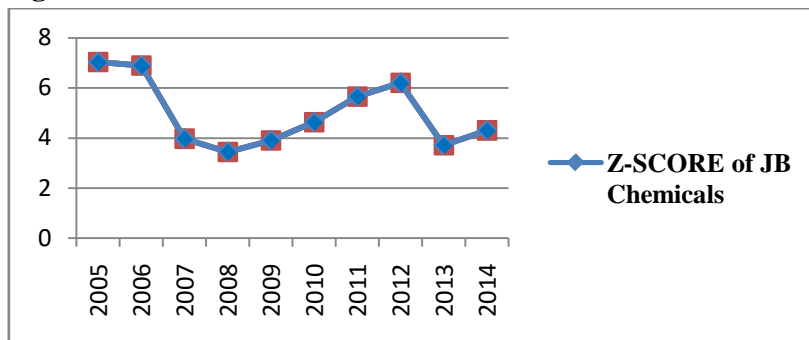
Indoco Remedies

Table no 6 and figure no 6 reveals that, the Z scores of Indoco remedies are above 2.99 during all ten years under study. Its Z scores varied within a range of 3.0 (2013) and 5.62 (2014). The X1(working capital / total assets) remained positive during the study period indicating adequate liquidity position of the company under study period. Values of X2 were low during last two years under study. It was due to decrease in retained earnings and increase in the total assets of the company during the last two years. However, during rest eight years, the ratio remained at very high level above 0.79 indicating a very strong cumulative profit position of the company. The value of X3 was found to be above 0.43 during the period under study. Hence the profitability position of the company

was satisfactory during study period. Variable X4 remained the major contributor to the value of Z score of the company. It was found that, the market value of the company increased around 04 times during the study period. The analysis revealed that, the market value position of the company was satisfactory during the period under study. It was also found that, the sales position of the company found satisfactory in proportion to its total assets. There was a dip in sales in 2013 but the company recovered immediately in next year. Hence the revenue generating ability of the firm was satisfactory. The company was found to have very healthy financial position during study. It can be concluded that there is no probability of facing any financial distress in near future by Indoco remedies.

Table no. 6

			Z Scores Of Indoco			
	X1	**X2**	**X3**	**X4**	**X5**	**Z-Score**
2005	0.23	0.8	0.53	2.18	0.87	4.61
2006	0.28	0.85	0.56	2.25	0.9	4.84
2007	0.3	0.89	0.65	2.41	1.08	5.33
2008	0.29	0.9	0.43	2.46	1.37	5.45
2009	0.3	0.89	0.5	0.94	1.41	4.04
2010	0.29	0.87	0.48	2.27	1.41	5.32
2011	0.24	0.84	0.44	1.93	1.55	5
2012	0.17	0.79	0.44	1.34	2.51	5.25
2013	0.12	0.4	0.45	1.46	0.57	3
2014	0.14	0.29	0.55	3.85	0.79	5.62

Source: Computed

Figure 6
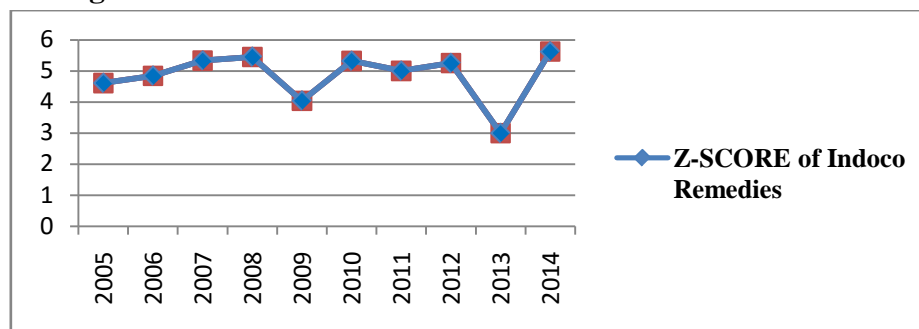
Findings and Conclusion:

Altman's Z score model is one of the most powerful techniques for predicting bankruptcy position of a company. If the Z score falls within bankruptcy zone, then it can be concluded that the company is likely to fall into bankruptcy within two next financial years. The present study revealed that, Z score of Cipla Ltd. stayed within a range between 7.38 (2009) and 18.59(2010). The company has maintained higher sales, higher EBIT and higher retained profits proportionate to its total assets. The Z scores of Lupin labs was in increasing trend from 3.71 (2005) to 22.91 (2014). Lupin's profitability as well as retained profits positions was found to be healthy during the study period. Again, sales revenue of the company was in increasing trend. It is concluded that, Lupin Lab's financial position is very healthy and it is far away from any bankruptcy in near future. The Z scores of Aurobindo Pharma stayed above 2.99 (in very healthy zone) in 2006, 2010 2011 & 2014 and in grey zone in rest six years i.e. 2005, 2007, 2008, 2009, 2012 & 2013. The liquidity position of the company was found to be satisfactory. The sales revenue as well as the total assets were found to have increased significantly during the study period. A wide variation in X4 of the company was observed due to heavy fluctuation in the market value of the company. The company's financial position was found to be healthy during the study period. The Z scores of Arati drugs stayed in bankruptcy zone during 2006 & 2008 and in grey zone during rest years under study. The financial position of Arati drugs was found to be healthy and stable. The company had growing sales during the study period and its EBIT and retained earning positions were also found to be satisfactory. Arati drugs did better in the last five years in comparison to first five years under review. However, the company has maintained negative working capital or very low level of working capital during the study period. There should be more focus on the working capital position as well as market value by Arati drugs to improve its Z score in future. The Z score of JB chemicals remained above 2.9 during all years under study. The Z scores varied within a range of 3.44 (2008) to 7.03 (2005). A decline was observed in Z score of the company during 2013, which was due to decline in its working capital as well as EBIT. The overall study of Z score of JB chemicals indicated that, the financial position of the company was very healthy due to its healthy working capital, healthy reserve & surplus and healthy market value during the study period. It is concluded that, the company has no possibility of becoming bankrupt during near future. The Z scores of Indoco

remedies were above 2.99 during all ten years under study. Its Z scores varied within a range of 3.0 (2013) and 5.62 (2014). The market value of the firm has increased around four times during the study period. The liquidity and profitability as well as retained earning positions were found to be satisfactory. The sales revenue has increased proportionately to its total assets. The company has a very healthy financial position and there is no probability of facing any financial distress in near future.

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