"An Analytical Study on Financial Health of Selected Pharmaceutical Companies by using Kida's Model."

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Abstract:

In today's competitive world it is necessary to evaluate the performance of the firm or industry on the regular basis to sustain in the market. With the help of evaluation of performance we can find out the efficient and inefficient units and can take several measures to turn inefficient unit into efficient unit. In this research work Kida Model is used to measure efficiency of Pharmaceutical Companies. 5 Companies are selected and the study period is 2015, 2016 and 2017. ANOVA and Kida's Model are used for data analysis. According to Kida's Model the company which has Z score more than 0.38 is consider as safe. So all selected companies having Z score more than 0.38. So, all selected pharmaceutical companies are in safe zone during study period. And hypothesis tested with the help of ANOVA. It conclude that null hypothesis expected. So results are as per expected.

Key Words: Financial Health, Kida's Model, Z score

Introduction:

Every business undertaking is carried out with an objective of making profit. All the stakeholders of company or the business organization will want to know whether an organization will do well in future in order to keep their interest in that organization. Forensic Accounting is one of the forms of investing accounting that helps to examine the financial records of the company with respect to fraud and distress. In today's competitive world it is necessary to evaluate the performance of the firm or industry on the regular basis to sustain in the market. With the help of evaluation of performance we can find out the efficient and inefficient units and can take several measures to turn inefficient unit into efficient unit.

Kida's Model is one of the model that helps to measure the financial efficiency of the companies. It Model is used to measure financial health of company.

Kida's Model:

$$Z = 1.042X_1 + 0.42X_2 + 0.461X_3 + 0.463X_4 + 0.271X_5$$

Where X_1 = Net Profit After Tax / Total Assets

X_2 = EBIT / Total Assets

X_3 = Accounts Payable / Total Sales * 12

X_4 = Sales/ Total Assets

X_5 = Cash/ Total Assets

Z > 0.38	Safe Zone
Z < 0.38	Grey Zone/ Distress Zone

Review of Literature:

Studies done with the help Kida Model:

1. Altman (1968) established a model that consist of a set of financial ratio. It was based on the assumption of a relationship between financial ratio in previous years and the time of bankruptcy for the study period.

2. Apoorva (2019) Seven companies have been selected to check the efficiency and accuracy of this model. In conclusion it can be applied for Indian Companies but the same was not 100% accurate.

3. Rohini Sajjan (2016) this study tries to apply the model to understand financial health of selected firms for the years 2011-2015 which are listed in BSE and NSE. Companies are selected from manufacturing and non manufacturing sector. It reveals that none of the companies completely belongs to safe zone except for few years. Most of the firms are in distress zone.

4. Setyani Dwi Lestari (2016) the study was based on effect of z score to stock price is significantly 0.004. the study period was 2009 to 2014. Retained earning to total assets have no significant effect. Ratio of z score only EBIT to total assets and significantly affect stock price partially.

5. Scaanesh C. (2016) "The Analytical study of Altman Z score on Nifty 50 Companies" it concludes that 26 Companies are in safe zone. 9 companies are in grey zone and 5 companies are in distress zone.

Research Gap:

1. Study Period

2. Samples

3. Test

Title of the Study:

"An Analytical Study on Financial Health of Selected Pharmaceutical Companies by using Kida's Model."

Objectives of the Study:

1. To measure the financial health of selected companies

2. To identify the zone (Safe/Grey/Distress)of selected companies

3. To estimate likelihood of financial distress by applying Kida's Model

4. To give suggestions

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Research Methodology

Population / Universe of Study:

The population of the study is all listed Pharmaceutical Companies in BSE India.

Sample Design:

From the whole population a sample of 5 Companies randomly selected.

Data Collection:

There are basically 2 methods of data collection. They are Primary and Secondary data collection. This study will be based on secondary data collection in which data is collected from the selected companies annual reports , websites and magazines. For the calculation of various ratios money control and annual report of respective companies

Period of the Study:

The period of the study is 3 years. i.e. 2014-15 to 2016-17

Hypotheses:

1.   There is no significant difference between X1 Ratio of the selected Pharmaceutical companies during the study period.

2.   There is no significant difference between X2 Ratio of the selected Pharmaceutical companies during the study period.

3.   There is no significant difference between X3 Ratio of the selected Pharmaceutical companies during the study period.

4.   There is no significant difference between X4 Ratio of the selected Pharmaceutical companies during the study period.

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5. There is no significant difference between X5 Ratio of the selected Pharmaceutical companies during the study period.

Tools and Techniques:

Data Analysis is considered as the core part of any research. In this research, data analysis is done by using statistical tools like ratios, and ANOVA test along with Kida's Model

Data Analysis and Interpretation:

Aurbindo Pharma:

Ratio		Year			Weight	Multiplication		
		2015	**2016**	**2017**		**2015**	**2016**	**2017**
X1	Net Profit	1516.35	1626.7	1706.76				
	Total Assets	8256.07	10617.76	11306.35				
		0.183665	**0.153206**	**0.150956**	**1.042**	0.191379	0.15964	0.157296
X2	EBIT	8255.886	10617.61	11306.2				
	Total Assets	8256.07	10617.76	11306.35				
		0.999978	**0.999986**	**0.999987**	**0.42**	0.419991	0.419994	0.419994
X3	Trade Payable	11460.4	12786.7	12677				
	Total Sales	8,244.84	9,322.76	9,781.21				
		16.68011	16.45869	15.55268	**0.461**	7.689529	7.587455	7.169784
X4	Sales	8,244.84	9,322.76	9,781.21				
	Total Assets	8256.07	10617.76	11306.35				
		0.99864	**0.878035**	**0.865108**	**0.463**	0.46237	0.40653	0.400545
X5	Cash	11.13	330.81	33.64				
	Total Assets.	8256.07	10617.76	11306.35				
		0.001348	**0.031156**	**0.002975**	**0.271**	0.000365	0.008443	0.000806

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						8.763634	8.582063	8.148426

Sun Pharmaceutical Industries:

Ratio		Year			Weight	Multiplication		
		2015	**2016**	**2017**		**2015**	**2016**	**2017**
X1	Net Profit	-1474.13	-1073.36	-22.84				
	Total Assets	28209.4	27146.75	25827.15				
		-0.05226	**-0.03954**	**-0.00088**	**1.042**	-0.05445	-0.0412	-0.00092
X2	EBIT	-1007.72	-537.27	146.69				
	Total Assets	28209.4	27146.75	25827.15				
		-0.03572	**-0.01979**	**0.00568**	**0.42**	-0.015	-0.00831	0.002385
X3	Trade Payable	15767.7	17724.5	20942				
	Total Sales	8,017.19	7,614.46	7,683.96				
		23.60084	27.93291	32.70501	**0.461**	10.87999	12.87707	15.07701
X4	Sales	8,017.19	7,614.46	7,683.96				
	Total Assets	28209.4	27146.75	25827.15				
		0.284203	**0.280493**	**0.297515**	**0.463**	0.131586	0.129868	0.137749
X5	Cash	416.46	169.39	170.28				
	Total Assets.	28209.4	27146.75	25827.15				
		0.014763	**0.00624**	**0.006593**	**0.271**	0.004001	0.001691	0.001787
						10.94612	12.95912	15.21801

Cipla

	Ratio	Year			Weight	Multiplication		
		2015	**2016**	**2017**		**2015**	**2016**	**2017**
X1	Net Profit	1181.09	1462.3	947.94				
	Total Assets	12461.79	13117.69	13124.84				
		0.094777	**0.111475**	**0.072225**	**1.042**	0.098758	0.116157	0.075258
X2	EBIT	1676.02	1884.04	1233.07				
	Total Assets	12461.79	13117.69	13124.84				
		0.134493	**0.143626**	**0.093949**	**0.42**	0.056487	0.060323	0.039459
X3	Trade Payable	1382.23	990.84	1298.21				
	Total Sales	10,224.72	12,117.72	10,768.49				
		1.622221	0.981214	1.446676	**0.461**	0.747844	0.45234	0.666918
X4	Sales	10,224.72	12,117.72	10,768.49				
	Total Assets	12461.79	13117.69	13124.84				
		0.820486	**0.923769**	**0.820466**	**0.463**	0.379885	0.427705	0.379876
X5	Cash	82.76	53.01	58.46				
	Total Assets.	12461.79	13117.69	13124.84				
		0.006641	**0.004041**	**0.004454**	**0.271**	0.0018	0.001095	0.001207
						1.284773	1.05762	1.162718

Cadila Healthcare:

	Ratio	Year			Weight	Multiplication		
		2015	**2016**	**2017**		**2015**	**2016**	**2017**
X1	Net Profit	1271.1	2037.5	661.9				
	Total Assets	5788.6	7310.5	9403.3				

		0.219587	**0.278709**	**0.07039**	**1.042**	0.228809	0.290414	0.073347
X2	EBIT	1507.4	2513.3	645.2				
	Total Assets	5788.6	7310.5	9403.3				
		0.260408	**0.343793**	**0.068614**	**0.42**	0.109372	0.144393	0.028818
X3	Trade Payable	6796	6043	15456				
	Total Sales	5,284.40	7,032.00	3,230.70				
		1.28605	**0.859357**	**4.784103**	**0.461**	0.592869	0.396164	2.205471
X4	Sales	5,284.40	7,032.00	3,230.70				
	Total Assets	5788.6	7310.5	9403.3				
		0.912898	**0.961904**	**0.343571**	**0.463**	0.422672	0.445362	0.159073
X5	Cash	129.4	163.7	16.8				
	Total Assets.	5788.6	7310.5	9403.3				
		0.022354	**0.022392**	**0.001787**	**0.271**	0.006058	0.006068	0.000484
						1.359779	1.282401	2.467193

Lupin:

Ratio		Year				Multiplication		
		2015	**2016**	**2017**	Weight	**2015**	**2016**	**2017**
X1	Net Profit	2397.35	2830.87	3141.33				
	Total Assets	9067.83	12299.89	15368.75				
		0.26438	**0.230154**	**0.204397**	**1.042**	0.275484	0.239821	0.212982
X2	EBIT	3217.09	3868.24	4208.48				
	Total Assets	9067.83	12299.89	15368.75				
		0.354781	**0.314494**	**0.273834**	**0.42**	0.149008	0.132087	0.11501
X3	Trade Payable	3224.5	876.7	834.5				

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	Total Sales	9,752.47	11,219.84	12,626.20				
		3.96761	0.93766	0.793113	**0.461**	1.829068	0.432261	0.365625
X4	Sales	9,752.47	11,219.84	12,626.20				
	Total Assets	9067.83	12299.89	15368.75				
		1.075502	**0.91219**	**0.82155**	**0.463**	0.497957	0.422344	0.380378
X5	Cash	59.3	34.96	172.84				
	Total Assets.	9067.83	12299.89	15368.75				
		0.00654	**0.002842**	**0.011246**	**0.271**	0.001772	0.00077	0.003048
						2.753289	1.227284	1.077042

Above all table shows X1, X2, X3, X4 and X5 ratio of Aurbindo Pharma, Sun Pharmaceutical Industries, Cadila, Cipla and Lupin Companies for study period i.e. 2015, 2016 and 2017. After that result of ratios multiply with weights. Then after all the figures after multiplication are added and final figure compare with 0.38. Final value of Aurbindo Pharma is 8.763634,   8.582063 and 8.148426, Sun Pharmaceutical Industries is 10.94612, 12.95912 and 15.21801, Cipla is 1.284773, 1.05762 and 1.162718, Cadila health care is 1.359779, 1.282401 and 2.467193, Lupin is 2.753289, 1.227284 and 1.077042 respectively for the year 2015, 2016 and 2017.

ANOVA:

RATIO	Source of Variation	SS	df	MS	F	F crit	H_0
	Between Groups	0.35404	2	0.17702	0.23195	3.88529	
X1	Within Groups	9.15795	12	0.76316			Accept
	Total	9.51199	14				

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RATIO	Source of Variation	SS	df	MS	F	F crit	H_0
X2	Between Groups	0.40824	2	0.20412	0.33203	3.88529	Accept
	Within Groups	7.37715	12	0.614763			
	Total	7.7854	14				
RATIO	*Source of Variation*	*SS*	*df*	*MS*	*F*	*F crit*	*H_0*
X3	Between Groups	8.78749	2	4.393746	0.030213	3.885294	Accept
	Within Groups	1745.12	12	145.4267			
	Total	1753.90	14				
RATIO	*Source of Variation*	*SS*	*df*	*MS*	*F*	*F crit*	*H_0*
X4	Between Groups	0.104113	2	0.052057	0.598675	3.885294	Accept
	Within Groups	1.04343	12	0.086953			
	Total	1.14754	14				
RATIO	*Source of Variation*	*SS*	*df*	*MS*	*F*	*F crit*	*H_0*
X5	Between Groups	0.00016	2	0.00008	0.98483	3.88529	Accept
	Within Groups	0.00097	12	0.0000812			
	Total	0.00113	14				

Findings and Conclusion:

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It is concluded that in all the cases F calculated is less than F tabulated so null hypothesis is accepted. So result is as per expectation. And according to Kida's model all selected Pharmaceutical Companies are in safe zone during study period.

Company	Score			Type
Aurbindo Pharma	8.763634	8.582063	8.148426	Safe Zone
Sun Pharma Industries	10.94612	12.95912	15.21801	Safe Zone
Cipla	1.284773	1.05762	1.162718	Safe Zone
Cadila Healthcare	1.359779	1.282401	2.467193	Safe Zone
Lupin	2.753289	1.227284	1.077042	Safe Zone

All the companies having score more than 0.38 so it can be concluded that all the companies are in safe zone.

Significance of the Study:

With the help of this study a stakeholder can easily identify the company which is in Safe Zone, Grey Zone and Distress Zone. Same way company also can know about the financial health and zone which it belongs to.
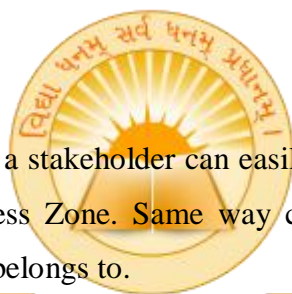
Limitations of the Study:

1.   Sample selected for the research work is randomly

2.   Due to time constrain on 5 Companies are selected from whole population

3.   Study period is only 3 years.

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