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A study on financial performance of selected companies in sugar industry, India

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Abstract
Financial Analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the Balance Sheet and the Profit and Loss Account. The project work is an outcome of "A Study on Financial Performance of Selected Companies of Sugar Industry in India". The study was carried out for the period of five years to analyze the financial performance of the company. The main aim of the present study is to find out the Financial Performance of selected Sugar Companies in India. The sample for the present study constituted 20 sugar companies in India. The research design adopted for the present study is analytical in nature and secondary data was collected from the published websites of organization for the research. In the present study Financial Performance is measured using ratio analysis, Altman's Z-score analysis and correlation analysis. The present study would reveal the financial performance of the selected sugar companies in the elaborate manner.

Keywords: Financial Performance, Ratio Analysis, Sugar industry.

1. Introduction
Indian sugar industry, the second largest agro based processing industry after the cotton textiles industry in the country, has a lion's share in acceleration industrialization process and bringing socio-economic changes in under developed rural areas. The sugar industry covers around about 7.5 percent of total rural population and provides employment to around about 5 lakh people in rural and the semi rural areas. About 4.5 crores farmers are engaged in sugarcane cultivation in India. Sugar mills (co-operative, private and public) have been instrumental in initiating a number of entrepreneurial activities in rural India. The sugar factories not only boosted the economic status of individual farmers but also it pushed the GDP of Indian economy on the upper scale by the increase in the exports of sugar. India is the sixth largest exporter of sugar in the world. Further, the increase in irrigation facilities, cultivation techniques and expertise knowledge boosted the number of sugar factories in India. In last five decades Indian Sugar production share has gone up from 5% to >15% in global sugar production.

2. Objectives
- To predict the financial health and viability of the 20 companies in the years to come with an objective to improve its operational efficiency and profitability.
- To find out the relationship of total assets with Liquidity, Leverage, Profitability and Activity Position of the selected companies in the sugar industry.
- To provide useful suggestions to improve the financial performance of the companies selected for the study.

3. Review of Literature
N. R. Inamdar, (1964) "Government and Co-operative Sugar Factories" is a study of Government and Co-operative Sugar factories in Maharashtra and contains measures for the promotion of co-operative enterprises.

Dr. O. P. Talwar (1968) Practical Hints on Sugar Factory Control by deals with measures to remedy unknown losses in sugar industry, raise clarification efficiency, minimize losses by various pan boiling schemes, as well as lower the final molasses purity by high speed electrical centrifugation.

S. V. Parthaswathy (1972) "Sugar Cane in India" discusses soil, climate, botany of sugarcane, land preparation, seed, planting and Inter-culture, pests and diseases. Sugar from scarcity to surplus by Hubert (1958) gives factual information on many facets of sugar cane cultivation, irrigation system, construction of factories, old and new equipment, trouble shooting, comparative value of different labour forces, role of chemists in scientific quality control and production efficiency.

4. Scope of the Study
This study "Financial Performance of Selected companies of Sugar Industry in India" is vital because just earning profit is not enough, a business should earn sufficient profit to cover its cost of capital and create surplus to grow. So finding the surplus profit is made essential. The analysis of financial statements helped to judge the financial strength of the firm. This study further gives valuable suggestion to the union to increase its performance by making a comparison with a firm in the same industry. The study will help the union to learn whether the performance creates value to its investors thereby looking for the opportunities to increase the investment.

5. Limitation of the Study
- The study period is limited to five years hence the result may not be useful for projecting the trend.
- Some of the company's data is not fully available for the study period even though they have got a high net profit.
- The accuracy of the data depends on the accuracy of the data available in the balance sheet of the company.

6. Research Methodology

Research

According to Clifford Woody research comprises defining and redefining problems, formulation hypothesis or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis.

Research Design

A research design is the arrangement of condition for collection and analysis of data in a means that aims relevance to the research purpose with economy in procedure. In the present the researcher has adopted analytical research design.

Source of Data Collection

- **Secondary Data**

Secondary data is used for the study. The required data for the study is collected and compiled from "Money Control.com". In addition to this, supportive data is collected from RBI bulletin, research publication such as Capital Market, Facts for You, Fortune India, Management and Accounting Research, The Management Accountant, Books and Various Newspapers.

Period of Study

The study covers a period of five years from the financial year 2009-10 to 2013-14.

Tools Used For Analysis

- **Z-score analysis**
- **Correlation analysis**

The list of companies selected for the study includes

S. No	Name of the Company	Abbreviation
1	Andhra Sugars	AS
2	Isgec Heavy Engineering	ISGECHE
3	DCM Shriram Sugars	DCM
4	Bannariamman Sugars	BAS
5	Kcp Sugar Ind Corp	KCP
6	Eid Parry (India)	EID
7	Piccadilly Agro Industries	PAI
8	Km Sugar Mills	KMS
9	BalrampurChini Mills	BCM
10	Shree Hanuman Sugar & Industries	SHSI
11	Dalmia Bharat Sugar And Industries	DBSI
12	Dhampur Sugar Mills	DSM
13	India Sucrose	IS
14	Piccadilly Sugar And Allied Industries	PSAI
15	Riga Sugar Company	RSC
16	Ponni Sugars (Erode)	PS
17	ThiruArooran Sugars Industries	TASI
18	Kesar Enterprises	KS
19	Jeypore Sugar Company	JSC
20	Dwarikesh Sugar Industries	DSI

7. Z - Score Analysis

Altman's 'Z' Score analysis has been applied by Financial Analyst to evaluate the general trend in the financial performance of an enterprise over a period. The required information for the analysis was obtained from the annual financial reports of the company. The formula used to evaluate 'Z' Score analysis is analysis is:

$$\mathbf{Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + .999X_5}$$

Where, X_1 = Working Capital / Total Assets.
X_2 = Retained earnings/ Total Assets.
X_3 = EBIT / Total Assets.
X_4 = Market Value of Equity / Total Liabilities
X_5 = Net Sales / Total Assets.

Altman came up with the following rules for interpreting a firm's Z-Score:

- Below 1.8 indicates a firm is headed for bankruptcy;
- Above 3.0 indicates a firm is unlikely to enter bankruptcy; and
- Between 1.8 and 3.0 is a statistical "gray area."

In the present study, researcher has used Altman's 'Z' Score Analysis to identify the financial health of the company.

Table showing z-score values

Values / Company Name	Z-Score					Mean
	2009-10	2010-11	2011-12	2012-13	2013-14	
AS	2.6012	1.8260	2.6199	2.7822	2.9009	2.5460
ISGECHE	4.6883	5.0922	5.2775	4.2756	2.6576	4.3982
DCM	2.1874	1.9896	2.5055	3.0945	3.7117	2.6977
BAS	2.8135	1.6895	2.3222	2.5185	1.3191	2.1326
KCP	2.8412	2.2112	2.3849	3.4337	2.4607	2.6663
EID	2.1860	1.7927	1.9580	1.8173	1.3572	1.8222
PAI	2.8398	2.8691	2.4031	2.8865	3.1634	2.8324
KMS	1.4833	0.9172	4.4982	0.7680	3.0749	2.1483
BCM	1.4963	1.8378	1.3811	2.2352	1.8623	1.7625
SHSI	1.4963	1.8378	1.3811	1.5999	1.6072	1.5845
DBSI	1.3253	0.0936	1.3131	1.5876	1.7320	1.2103
DSM	1.7219	2.4452	1.9470	0.4936	1.6987	1.6613
IS	1.3524	1.0582	2.8027	2.9196	0.8328	1.7931
PSAI	3.5783	3.4897	3.2097	1.0906	0.9945	2.4726
RSC	1.2948	1.2208	1.2904	1.5629	1.4126	1.3563
PS	4.7362	4.5641	3.8223	2.0933	1.6995	3.3831
TASI	3.1545	1.9278	2.8572	2.0045	1.1187	2.2125
KS	1.7634	1.0891	2.1783	1.4309	1.1268	1.5177
JSC	2.1589	1.7011	2.1592	1.3303	1.2434	1.7186
DSI	1.5845	1.3894	1.4700	1.8238	2.7146	1.7965

Healthy Area

- Isgec Heavy Engineering
- Ponni Sugars (Erode)

Grey Area

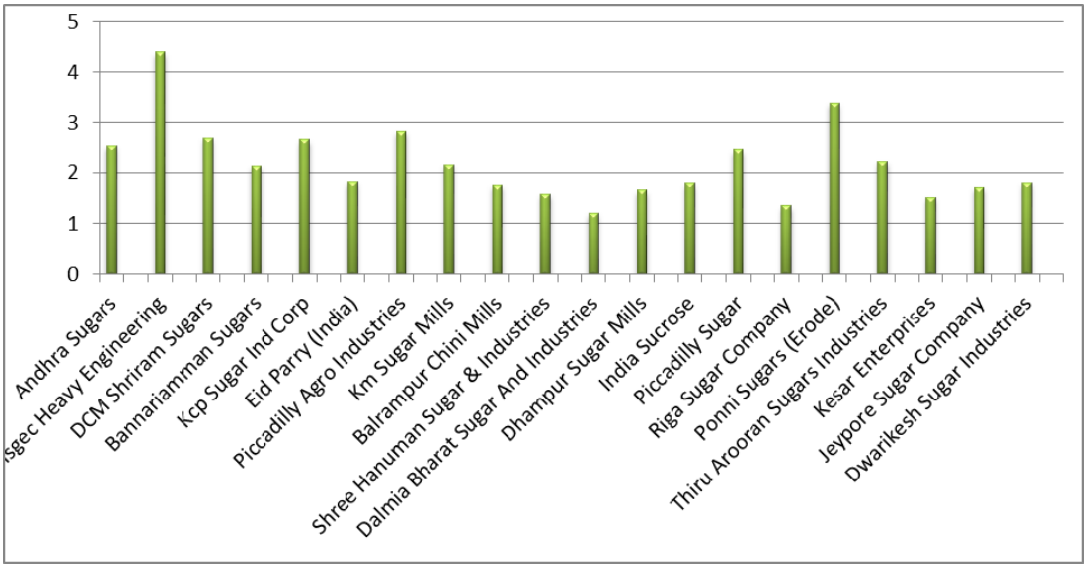
- Andhra Sugars
- DCM Shriram Sugars
- Bannariamman Sugars
- Eid Parry (India)
- Kcp Sugar Ind Corp
- Piccadilly Agro Industries
- Km Sugar Mills
- Piccadilly Sugar And allied Industries
- Thiru Arooran Sugars Industries

Bankruptcy

- Balrampur Chini Mills
- Shree Hanuman Sugar & Industries

- Dalmia Bharat Sugar And Industries
- Dhampur Sugar Mills
- India Sucrose
- Riga Sugar Company
- Kesar Enterprises
- Jeypore Sugar Company

Dwarikesh Sugar Industries



8. Correlation Analysis

- The formula for the calculating 'r' value using Karl Pearson's coefficient of correlation is:

$$r = \frac{X * Y}{\sqrt{\sum \overline{X} * \sum \overline{Y}}}$$

- The 'r' value which we get from the above formula is tested to test the significance by the formula:

$$t = r\sqrt{n-2/1-r^2}$$

- In the present study, researcher has attempted to test the relationship existing between the following set of variables using Karl Pearson's coefficient of correlation:

- Total Assets and Liquidity.
- Total Assets and Leverage.
- Total Assets and Asset Management.
- Total Assets and Profitability.

Level of Significance = 5%. , Degree of Freedom = 3.

If the calculation value is between – 3.182 and + 3.182 there exist relationship between Total Assets and Dependent Variable (Liquidity, Leverage, Asset Management and Profitability).

Correlation Analysis

Company		Liqudity Ratio			Leverage Ratio			Profitability Ratio					Activityratio	
		CR	QA	CP	DER	ICR	FAR	GPR	NPR	OPR	ROA	ROER	ITR	DTR
A S	R	0.945	0.741	-0.393	-0.329	0.036	0.839	-0.796	-0.496	-0.798	-0.355	-0.448	-0.885	-0.975
	T	5.004	1.911	-0.740	-0.603	0.062	2.671	-2.278	-0.989	-2.293	-0.658	-0.868	-3.292	-7.600
Isgeche	R	0.825	0.912	0.884	0.675	0.920	-0.839	-0.376	-0.549	-0.443	-0.977	-0.961	-0.087	-0.736
	T	2.529	3.851	3.275	1.585	4.066	-2.671	-0.703	-1.138	-0.856	-7.936	-6.019	-0.151	-1.883
Dcm	R	0.941	0.264	-0.318	0.793	-0.930	-0.479	-0.978	-0.846	-0.938	-0.748	-0.773	-0.634	-0.231
	T	4.816	0.474	-0.581	2.255	-4.382	-0.945	-8.120	-2.748	-4.687	-1.952	-2.110	-1.420	-0.411
Bas	R	0.999	-0.294	-0.519	0.903	-0.678	-0.507	-0.281	-0.822	-0.231	-0.829	-0.848	-0.931	-0.108
	T	38.701	-0.533	-1.053	3.640	-1.598	-1.019	-0.507	-2.500	-0.411	-2.567	-2.771	-4.418	-0.188
Kcp	R	0.969	0.837	0.723	0.659	-0.120	-0.006	-0.615	0.042	-0.387	0.035	0.235	-0.312	-0.524
	T	6.793	2.653	1.815	1.518	-0.209	-0.010	-1.351	0.073	-0.727	0.061	0.419	-0.569	-1.066
Eid	R	0.976	-0.074	-0.624	-0.992	-0.570	-0.821	0.031	-0.221	-0.054	-0.294	0.019	-0.973	-0.320
	T	7.763	-0.129	-1.383	-13.611	-1.202	-2.491	0.054	-0.392	-0.094	-0.533	0.033	-7.302	-0.585
Pai	R	-0.037	-0.485	0.791	-0.668	-0.598	0.865	-0.517	-0.165	-0.548	-0.067	-0.229	-0.261	-0.028
	T	-0.064	-0.961	2.239	-1.555	-1.292	2.986	-1.046	-0.290	-1.135	-0.116	-0.407	-0.468	-0.049
Kms	R	0.496	0.307	-0.456	0.691	0.793	0.514	0.888	0.933	0.896	0.914	-0.896	-0.078	0.168
	T	0.989	0.559	-0.887	1.656	2.255	1.038	3.345	4.490	3.495	3.902	-3.495	-0.136	0.295
BCM	R	0.927	0.559	-0.300	0.963	-0.293	-0.147	-0.411	-0.502	-0.388	-0.422	-0.275	-0.688	-0.029

	T	4.281	1.168	-0.545	6.189	-0.531	-0.257	-0.781	-1.005	-0.729	-0.806	-0.495	-1.642	-0.050
SHSI	**R**	-0.397	-0.390	-0.381	0.582	0.492	-0.488	0.913	0.067	0.245	-0.194	-0.020	-0.539	0.475
	T	-0.749	-0.734	-0.714	1.240	0.979	-0.968	3.876	0.116	0.438	-0.343	-0.035	-1.108	0.935
DBSI	**R**	-0.550	0.678	0.983	0.986	0.388	-0.854	0.430	0.970	0.899	0.916	0.942	0.947	-0.371
	T	-1.141	1.598	9.273	10.242	0.729	-2.843	0.825	6.911	3.555	3.955	4.862	5.106	-0.692
DSM	**R**	0.698	-0.504	-0.659	0.967	-0.869	0.917	-0.894	-0.622	-0.885	-0.619	-0.651	-0.681	-0.006
	T	1.688	-1.011	-1.518	6.574	-3.042	3.982	-3.456	-1.376	-3.292	-1.365	-1.485	-1.611	-0.010
IS	**R**	0.932	0.176	-0.028	0.996	-0.646	-0.079	-0.447	-0.662	-0.764	-0.856	-0.862	-0.622	-0.708
	T	4.454	0.310	-0.049	19.307	-1.466	-0.137	-0.866	-1.530	-2.051	-2.868	-2.945	-1.376	-1.736
PSAI	**R**	0.899	0.670	0.454	0.743	-0.082	-0.432	-0.108	-0.273	-0.758	-0.691	-0.194	-0.988	0.065
	T	3.555	1.563	0.883	1.923	-0.143	-0.830	-0.188	-0.492	-2.013	-1.656	-0.343	-11.079	0.113
RSC	**R**	0.893	-0.804	-0.702	-0.615	-0.984	0.530	-0.970	-0.980	-0.954	-0.996	-0.989	-0.777	-0.426
	T	3.437	-2.342	-1.707	-1.351	-9.566	1.083	-6.911	-8.530	-5.511	-19.307	-11.581	-2.138	-0.816
PS	**R**	0.309	0.741	0.961	0.974	-0.883	-0.677	-0.613	-0.586	-0.463	-0.816	-0.672	-0.289	-0.653
	T	0.563	1.911	6.019	7.447	-3.258	-1.593	-1.344	-1.253	-0.905	-2.445	-1.572	-0.523	-1.493
TASI	**R**	0.869	-0.366	-0.376	-0.995	0.029	0.267	0.645	-0.270	0.508	0.020	0.014	-0.799	-0.117
	T	3.042	-0.681	-0.703	-17.255	0.050	0.480	1.462	-0.486	1.022	0.035	0.024	-2.301	-0.204
KS	**R**	-0.727	0.057	-0.346	0.940	-0.842	-0.186	-0.553	-0.952	-0.504	-0.935	-0.953	-0.198	-0.790
	T	-1.834	0.099	-0.639	4.772	-2.703	-0.328	-1.150	-5.387	-1.011	-4.566	-5.448	-0.350	-2.232
JSC	**R**	-0.421	0.022	-0.398	-0.964	0.034	-0.660	-0.173	0.065	-0.208	-0.016	0.024	0.645	-0.172
	T	-0.804	0.038	-0.751	-6.279	0.059	-1.522	-0.304	0.113	-0.368	-0.028	0.042	1.462	-0.302
DSI	**R**	-0.040	0.055	0.251	0.991	0.512	-0.899	0.579	0.353	0.592	0.035	0.523	-0.270	-0.962
	T	-0.069	0.095	0.449	12.823	1.032	-3.555	1.230	0.653	1.272	0.061	1.063	-0.486	-6.102

Relationship between Ratios

Company	**Liqudity Ratio**		**Leverage Ratio**		**Profitability ratio**			**Activity Ratio**	
	Cr	**Qa**	**Der**	**Icr**	**Gpr**	**Npr**	**Opr**	**Itr**	**Dtr**
As	Ns	S	S	S	S	S	S	Ns	Ns
Isgeche	S	Ns	S	Ns	S	S	S	S	S
Dcm	Ns	S	S	Ns	Ns	S	Ns	S	S
Bas	Ns	S	Ns	S	S	S	S	Ns	S
Kcp	Ns	S	S	S	S	S	S	S	S
Eid	Ns	S	Ns	S	S	S	S	Ns	S
Pai	S	S	S	S	S	S	S	S	S
Kms	S	S	S	S	Ns	Ns	Ns	S	S
Bcm	Ns	S	Ns	S	S	S	S	S	S
Shsi	S	S	S	S	Ns	S	S	S	S
Dbsi	Ns	S	Ns	S	S	Ns	Ns	Ns	S
Dsm	S	S	Ns	S	Ns	S	Ns	S	S
Is	Ns	S	Ns	S	S	S	S	S	S
Psai	Ns	S	S	Ns	S	S	S	S	S
Rsc	Ns	S	S	Ns	Ns	Ns	Ns	S	S
Ps	Ns	S	Ns	Ns	S	S	S	S	S
Tasi	S	S	Ns	S	S	S	S	S	S
Ks	S	S	Ns	S	S	Ns	S	S	S
Jsc	S	S	Ns	S	S	S	S	S	S
Dsi	S	S	Ns	S	S	S	S	S	Ns

Ns- Not Significant S- Significant

9. Findings

From the present study based on the analysis, researcher has concluded with the following findings:

- It is found from the table that 'Z' Scores is fluctuating in all the companies during 2009-10 to 2013-14. It is clear that 9 companies out of 20 companies in Balrampur Chini Mills, Shree Hanuman Sugar & Industries, Dalmia Bharat Sugar And Industries, Dhampur Sugar Mills, India Sucrose, Riga Sugar Company, Kesar Enterprises, Jeypore Sugar Company, Dwarikesh Sugar Industries is likely to become bankrupt because their 'Z' Score is below 1.81, two out of twenty companies i.e. Isgec Heavy Engineering, Ponni Sugars (Erode) are financial sound and other nine companies are in the grey area.
- It is found from the correlation analysis table that there exists a relationship between total asset and activity ratios for Isgec Heavy Engineering, DCM Shriram Sugars, Kcp Sugar Ind Corp, Piccadilly Agro Industries, Km Sugar Mills, Balrampur Chini Mills, Shree Hanuman Sugar & Industries, Dhampur Sugar Mills, India Sucrose, Piccadilly Sugar And Allied Industries, Riga Sugar Company, Ponni Sugars (Erode), Thiru Arooran Sugars Industries and Jeypore Sugar Company.

10. Suggestions

- Reduce Inventory
- Reduce current liability
- Reduce Receivables
- Reducing expenses
- Increase In profit
- Increasing Current Asset, Sales

11. Conclusion

In the era of globalization, sugar industry needs more competitive edge which can be given by way of modernization, enhancing productivity, and manufacturing excellent quality sugar at competitive prices. It needs quality management at every level of activity to enhance its performance. The Indian sugar industry uses sugarcane in the production of sugar and hence, the maximum number of companies is likely to be found in the sugarcane growing state of India, Including Uttar Pradesh, Maharashtra, Gujarat, Tamilnadu, Karnataka and Andhra Pradesh.

The financial performance of the company is very important for the effective performance of any company. From the study it is found that some of the sugar companies selected for the present study is not efficient in maintaining its liquidity, leverage, profitability and activity ratios. Hence various suggestions were given to the selected sugar companies to improve their financial position by improving their liquidity, profitability, asset management and leverage.

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