

Trend analysis of annual sales of select private sector paper industry in India

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Abstract

The pulp and paper industry is one of India's oldest and core industrial sector. The socio-economic importance of paper has its own value to the country's development as it is directly related to the industrial and economic growth of the country. Paper industry in India is the 15th largest paper industry in the world. It provides employment to nearly 1.5 million people and contributes Rs 25 billion to the government. Objectives of the study, to analyze the estimates of trend co-efficient and sales of the selected private sector paper industry in India. Methodology of the study, Secondary data has been used in this study. Top ten paper industry has been selected for the study. The period for this study covered ten years from 2004-2005 to 2013-2014 and the essential data for this period have been collected. Descriptive statistics and Trend analysis has been used this study. Suggested this study, when taking into consideration the sales of all the firms found to be good except few companies. Conclude this study, It is confined only during few periods the companies shows negative trends otherwise it reflects profitability on a whole. The management shall concentrate to avoid entering the grey zone, which reveals the position of the firms may reflect different scenario.

Keywords: Trend analysis, annual sales, paper industry, economic growth

1. Introduction

The pulp and paper industry is one of India's oldest and core industrial sector. The socio-economic importance of paper has its own value to the country's development as it is directly related to the industrial and economic growth of the country. Paper industry is a diverse industry which produces a wide range of pulp, paper and paperboard products to meet specific end user requirements. The Indian Paper Industry accounts for about 1.6% of the world's production of paper. The estimated turnover of the industry is INR 50,000 crore approximately and its contribution to the exchequer is around INR 4500 crore. The industry provides employment to more than 0.5 million people directly and 1.5 million people indirectly.

Trend analysis is a mathematical technique that uses historical results to predict future outcomes. It uses run charts to analyze variances in cost and schedule performance when compared to the baseline. It can also track technical performance by analyzing the variance between defects reported and the defects corrected. Trend estimation is a statistical technique to aid interpretation of data. When a series of measurements of a process are treated as a time series, trend estimation can be used to make and justify statements about tendencies in the data, by relating the measurements to the times at which they occurred. This model can then be used to describe the behavior of the observed data. Trend analysis is a Method of time series data analysis involving comparison of the same item such as monthly sales revenue figures over a significantly long period to detect general pattern of a relationship between associated factors or variables, and to project the future direction of this pattern.

1.1. Statement of the Problem

Paper industry in India is the 15th largest paper industry in the world. It provides employment to nearly 1.5 million people and contributes Rs 25 billion to the government. Outlook for paper

industry in India looks extremely positive as the demand for upstream market of paper products, like, tissue paper, tea bags, filter paper, light weight online coated paper, medical grade coated paper, etc., is growing up. The Indian government regards the paper industry as one of the 35 high priority industries of the country. In this study have selected following questions were raised in researcher mind

What is the financial strength of private sector paper industries in India?

What are the estimates of trend co-efficient and sales of the selected private sector paper industry in India?

What are the estimates of trend co-efficient and total income of the selected private sector paper industry in India?

1.2. Objectives of the Study

- To analyze the estimates of trend co-efficient and sales of the selected private sector paper industry in India.
- To improve the suitable suggestions to offer sales of private sector paper industry in India.

2. Review of Literature

1. Geethanjali Chaturvedi *et al.* (2006) carried out a study on the growth and prospectus of Indian paper industry and highlighted the existing status of the Indian paper industry with respect to the key market indicator. They have discussed the basic issues and challenges confronting the industry with possible strategy to address the same. The authors have revealed that issues and concern of the industry include scale of operation and environmental issue.
2. K.S. Kavitha & Dr. P. Palanivelu (2014), in their article titled "A Study on Financial Performance of Iron and Steel Industries India" states that India is world's second largest producer of steel. High demand of Iron and steel by sectors like, Infrastructure, Automobile and Real estate have

given a boost to Iron and Steel Industry in India. Combined with huge production to the export of Iron and steel has also grown by 12.5%. They have used ANNOVA (Analysis of Variance) as a statistical tool. They concluded by stating that profit and utilize maximum production capacity. They can control the cost of goods sold and operating expenses. Improper planning and delays in implementation of projects lead to rise in their cost. So properly planning should be made. Companies try to increase production and sales for getting maximize profit to strengthen financial position.

3. Research Methodology

Research methodology deals with the research design, methods of data collection, period of the study, sampling design, statistical tools employed and interpretation of data. The following make up the framework of analysis as applied by the researcher, to identify the solutions to realize the objectives of the study.

3.1. Research Design

The design of the present study is descriptive, analytical and conclusive. It is the procedure of condition and analysis of data in a manner that aims to combine reference to the research purpose. It is the conceptual structure within which the research is conducted. In other words it is a blue print that is followed in completing a study that guides collection and analysis of data.

3.2. Period of the Study

The period for this study covered ten years from 2004-2005 to 2013-2014 and the essential data for this period have been

collected. This ten years period is chosen to have a fairly long, cyclically well balanced period, for which reasonably homogeneous, reliable and up to-date financial data would be available.

3.3. Tools Used

The following statistical tools have been used for the study purpose

1. Mean.
2. Standard deviation.
3. Estimates of trend co-efficient and
4. Compound annual growth rate.

4. Data Analysis and Interpretation

An attempt has also been made to estimate trend co-efficient for selected variables of selected paper industry in India during the study period by fitting a linear regression model. The liner model fitted is as follows.

$$P = \alpha + \beta t + e$$

Where 'P' is rate of selected variables, 't' is the time and 'α and βt' are the parameters [intercept and co-efficient respectively] and e is the error term. To test whether the difference between actual selected variables and estimated selected variables was significant or not, the following hypothesis is framed and tested. "There is no significant difference between actual values and the trend values of selected variables among different years". The annual sales of sample paper companies in India from the year 2004-05 to 2013-14 was taken from the annual reports of the respective firms and the annual sales of Indian paper companies over the study period were achieved through estimation of mean, co-efficient of variation and compound annual growth rate. The estimates were also presented in the following tables.

Table 1: Analysis Of Annual Sales Of Indian Paper Industry (2004-05 TO 2013-14) (Rs. In Crores)

Year	Ballarpur Industries Ltd	Spp Ltd	Jk Papers Ltd	Shreyans Industries Ltd	West Coast Paper Mills Ltd	Rainbow Papers Ltd	Emami Papers Ltd	Pudumjee Pulp and Papers Ltd	Shree Rama News Print Ltd	Star Paper Mills Ltd
2004-05	1802.27	385.56	653.51	143.46	463.78	106.53	142.96	124.19	287.7	181.53
2005-06	1878.94	419.17	756.63	178.63	529.81	130.52	155.69	128.18	321.59	188.2
2006-07	2167.78	457.6	848.73	198.25	555.21	146.51	160.12	188.41	351.47	316.65
2007-08	952.04	495.04	682.95	218.63	584.48	168.17	222.9	219.47	354.09	316.65
2008-09	1020.05	529.11	1200.42	258.38	619.75	229.6	420.87	220.3	341.61	360.26
2009-10	1061.72	509.26	1253.15	238.79	623.91	264.27	397.89	224.4	308.5	251.64
2010-11	1060.91	573.47	1385.38	255.8	1070.92	388.18	429.84	225.77	320.32	259.58
2011-12	1094.35	611.42	1491.85	275.84	1305.18	450.36	495.08	225.08	350.89	228.27
2012-13	984.68	834.49	1643.81	343.27	1454.62	526.73	510.02	209.05	382.83	272.93
2013-14	950.49	1013.38	1941.61	401.61	1562.33	656.14	546.57	236.17	408.45	275.02
Mean	1297	582.9	1186	251.3	877	306.7	348.2	200.1	342.7	265.1
SD	462	196.4	441	76.5	426	189	160.5	41	35.5	56.8
CV	35.58	33.69	37.22	30.45	48.6	61.62	46.09	20.48	10.36	21.41
Range	1217	627.8	1288	258.2	1099	549.6	403.6	112	120.8	178.7
CAGR	-0.06862	0.113349	0.128614	0.121179	0.144476	0.223841	0.160686	0.074027	0.03970	0.04724

Figures in brackets are indices (Rs in Crores)

Source: CMIE Database

The Annual sales of the sample paper companies were shown in Table 4.1.

The mean value was the highest in Ballarpur Industries Ltd i.e., 1297 followed by JK paper Ltd i.e., 1186. Sales of all the selected paper industries reflected that they were below the mean ratios in most of the years. Hence, it could be concluded

that the sales was in a satisfactory position of all the companies. The range of sales which worked out as 1288 of JK paper Ltd. showed highest among selected paper companies in India for the present study. The compound annual growth rate of Rainbow Papers Ltd had highest growth rate than the other companies (0.223841). The co-efficient of variation showed

that the sales of Rainbow papers Ltd. was more consistent (61.62) than the other companies and it was followed by West coast Papers Ltd. (48.06), Emami papers Ltd. (46.06), JK

papers Ltd.(37.22), Ballarpur Industries Ltd. (35.58), SPP (33.69) and so on.

Table 2: Estimates of Trend Co-Efficients for Sales of Indian Paper Industry (2004-05 to 2013-14)

Sl. No.	Companies	P = $\alpha + \beta t + e$				p-value	
		α	βt	R ²	F-value		
1	Ballarpur Industries Ltd	Yt = 1928.15	- 114.695*t	56.6	10.73	0.012	S
2	SPP	Yt = 264.778	57.8313*t	79.5	31.05	0.001	S
3	JK Papers LTD	Yt = 413.178	140.477*t	92.9	104.01	0.000	S
4	Shreyans Industries Ltd	Yt = 119.409	23.9739*t	90.1	72.17	0.000	S
5	West Coast Paper Mills Ltd	Yt = 157.867	130.751*t	86.3	50.26	0.000	S
6	Rainbow Papers Ltd	Yt = -24.4293	60.2055*t	93.1	106.49	0.000	S
7	Emami Papers Ltd	Yt = 68.6793	50.8208*t	91.9	91.13	0.000	S
8	Pudumjee pulp and Papers Ltd	Yt = 140.76	10.7895*t	63.6	13.96	0.006	S
9	Shree Rama News print Ltd	Yt = 296.808	8.35218*t	50.7	8.23	0.021	S
10	Star Paper Mills Ltd	Yt = 241.313	4.31994*t	40.7	4.45	0.522	NS

** P<0.01 *P<0.05

The results estimate of trend co-efficient for sales of sample paper companies presented in Table. It is clear that, the p-value is less than 0.01 and 0.05; the null hypothesis (There is no significant difference between actual value and the trend value of sales among different years of selected companies) is

rejected at 1 per cent and 5 per cent level of significance as there is significant difference between actual value and the trend value of sales among selected companies for different years expect Star Paper Mills Ltd

Table 3: Projections for Annual Sales of Indian Paper Industry (2014-15 TO 2018-19)

Year	Ballarpur Industries Ltd	SPP	JK PapersLTD	Shreyans Industries Ltd	West Coast Paper Mills Ltd	Rainbow Papers Ltd	Emami Papers Ltd.	Pudumjee Pulp and Papers Ltd	Shree rama news print ltd	Star paper mills ltd
2014-15	666.499	900.92	1958.43	383.123	1596.13	637.831	627.709	259.444	388.682	288.833
2015-16	551.804	958.75	2098.91	407.097	1726.88	698.037	678.53	270.233	397.034	293.153
2016-17	437.109	1016.58	2239.38	431.071	1857.63	758.242	729.35	281.023	405.386	297.473
2017-18	322.414	1074.42	2379.86	455.044	1988.38	818.448	780.171	291.812	413.739	301.792
2018-19	207.718	1132.25	2520.34	479.018	2119.14	878.653	830.992	302.602	422.091	306.112

Source: Computed (Rs in Cr)

The projections obtained for Indian Paper Industries by linear growth models listed in Table 5.16 & 5.17 shows that the selected companies have been growing marginally. The trend movement of Indian paper Industries for the year 2018-19 revealed the sales units will be highest in JK Paper Mills Ltd followed by West Coast Mills Ltd with the trend value of 2119.14 and 1132. The sales units will be lowest in Pudumjee pulp and papers Ltd with the trend value of 302.602.

5. Findings

1. The mean value was the highest in Ballarpur Industries Ltd i.e., 1297. The co-efficient of variation showed that the sales of Rainbow papers Ltd. was more consistent (61.62) than the other companies. The sale was in a satisfactory position of all the companies.
2. It is clear that, the p-value is less than 0.01 and 0.05; the null hypothesis is rejected at 1 per cent and 5 per cent level of significance as there is significant difference between actual value and the trend value of sales among selected companies for different years expect Star Paper Mills Ltd.
3. The projections obtained for Indian Paper Industries by linear growth models shows that the selected companies have been growing marginally.

6. Suggestions

- There was a negative performance when taking into consideration star paper mills Ltd. Even though there was improvement found in the subsequent years during the study period it is suggested that the overall sales margin of the firm reveals very marginal satisfactory situation that needs to be taken care by the management.
- Fixed asset reveals investment based on the net profit of the organizations, which affect the firm's position to accumulate its net block. Based on the study almost all the companies reveal marginal satisfaction towards their fixed asset position. However, the companies shall take initiatives to improve the fixed asset position.
- When taking into consideration the sales of all the firms found to be good except few companies.

7. Conclusion

Financial management means the entire gamut of managerial efforts devoted to the management of finance- both its sources and uses- of the enterprise. It has rightly been said that business needs money to make more money. Hence, efficient management of even business enterprise is closely linked with efficient management of its finance. A ratio is a simple

arithmetical expression of the relationship of one number to another. The relationship between two figures expressed mathematically is called a ratio. It is used as index or yard stick for evaluating the financial position and performance of a firm. Based on the analysis, this study will provide valuable suggestion, which will enable the companies to overcome its weakness and enhance its financial performance. The study is conducted to analyze the present performance and profitability position of the organizations. The present situation of the organization was taken for the study is through analyzing the ten years annual report which clearly depicts the balance sheet in which the source of funds, application of funds and current liabilities & provisions of the company. It is confined only during few periods the companies shows negative trends otherwise it reflects profitability on a whole. The management shall concentrate to avoid entering the grey zone, which reveals the position of the firms may reflect different scenario. The study concludes that the liquidity and profitability of the organizations were found to be excellent in every respect.

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