

Earning Per Share in the Plastic Industry of Gujarat.**Dr.Harshad M.Tandel****Rofel College , Vapi ,Gujarat, India.****Abstract**

In this research paper author have attempted to measure the profit available to the Equity Shareholder of growing sector of plastic industry of Gujarat during 2005-06 to 2014-15 by taking a sample of 14 public limited ,ie listed companies at BSE(Bombay Stock Exchange)Mumbai which are functioning in the Gujarat state Region of India on the basis of different Criteria. Then the researcher have collected 10 years Earning Per Share Ratios of 14 companies for the period 2005-06 to 2014 -15 and found out composite Earning Per Share ratios using `paid-up share capital` as weight and found out weighted mean of these ratios for the plastic industry of Gujarat Researcher have applied Mann-Kendall Trend detection test for testing the hypothesis .So far as earning per share ratio is concern, there is no trend in the series of Earning Per share ratio. At the beginning of the decade it was around 8.24 and it continuously raised up to the level of 14.89 and gone down to the level of 8.4.

Key Words – Plastics Industry, Composite Earning Per Share Ratios ,Weighted Mean, Trend Analysis**1.Introduction:**

The word plastic has originally been derived from the Greek word 'Plastikos' which means 'fit for moulding'. Now - a - days the use of plastic is so common that the current age can be called as Plastic age. Plastic have replaced a number of traditionally used materials like metals, ceramic etc. Recently, plastic has attained a great importance in every walk of our life, due to their certain unique properties. Therefore, plastics are widely used in manufacturing a large variety of articles like bowls, polythene bags, buckets, pipes, wrappers, insulators and electronics etc. are basically dependent on plastics. Plastics are basically, synthetic organic materials of high molecular weight, which can be moulded into any desired shape by the application of heat and pressure in the presence of a catalyst

Over the years, India has made significant progress in the industrial world with healthy economic growth. On purchase power parity basis, it is one of the top five global economics and is expected to be the third largest by the turn of this decade. Plastics are one of the fastest growing industries in India. Indian Plastics Industry is expanding at a phenomenal pace. Major international companies from various sectors such as automobiles, electronics, telecommunications, food processing, packing, healthcare etc. have set-up large manufacturing bases in India. Therefore, demand for plastics is rapidly increasing and soon India will emerge as one of the fastest growing markets in the world. The next two decades are expected to offer unprecedented opportunities for the plastic industry in India. This would necessitate industry initiatives to foster investments, expand the market, upgrade quality standards, enhance global participation, encourage Indian industry, to adopt and adapt to world class technology and manufacturing practices.

2. Growth of Plastic Industry:

2.1 Global Scenario:

Last few years have been tumultuous for plastics and petrochemical sector due to steep rise in oil prices, which has adversely affected the global economies. However, considering the feed stock advantage and abundance of oil reserves newer petrochemical complexes are being established in Middle-east countries i.e. Oman, Saudi Arabia, UAE, etc. It is projected that, Ethylene capacity in Middle-East would reach to about 35 million tons per annum and Polypropylene (PP) capacity to touch about 7 million tonnes per annum. The US Petrochemical sector may lose Export competitiveness as most of the Ethylene capacities in USA are Ethane based, which are not cost competitive and are capable to produce only Polyethylene (PE). Similarly, the revamping of European Petrochemical Complexes would be imperative as they are based on old and expensive technology and are not cost competitive with the Middle-East companies having the biggest advantage of raw material at their doorstep. China, Middle-East and India would be the major global players, where expansion and augmentation of existing petrochemical capacity would take place in the next 5 years.

Worldwide Plastics Industry witnessed a steady growth in the last decade which is reflected in the increased consumption figures of all types of plastics materials. Asia has been world's largest plastics consumer for several years, accounting for about 30% of the global consumption excluding Japan, which has share of about 6.5%. Next to Asia is North America with 26% share, then Western Europe with 23% share in the global market. In recent years, significant aspect of plastics material growth globally has been the innovation of newer application areas for plastics such as increasing plastics applications in automotive field, rail, transport, defence & aerospace, medical and healthcare, electrical & electronics, telecommunication, building & infrastructure, Plastics have become the key drivers of innovations & application development.

Polymer-Electronics is one such area which has opened up new avenues for plastics; from organic light emitting diodes to electro-optical and bio-electrical complements, from low-cost plastic chips to flexible solar cells. New plastics can conduct electricity and emit light. While polymers will not replace silicon as semiconductors, they do offer completely new opportunities for low-priced mass-manufactured products.

Radio-frequency identification (RFID) tags in smartcards for identification and access control, payment and ticket systems, price labels, product tracking systems in the logistics chain or packaging that monitors product quality – are in offing. Growth trend of plastics has proved that there has been a quiet “Plastics – revolution” taking World-wide, the plastics and polymer consumption will have an average growth rate place in the material – sector of 5% and it will touch a figure of 227 million tons by 2015. Globally, it is projected that PET (Bottle grade) will have the highest growth rate of about 11% AAGR.

2.2 Indian Plastic Industry:

The plastic processing sector in India comprises about 55,000 units employing around 3.6 million people – directly and indirectly; Gujarat contributes about one-fifth of the total number of units in the country. They are involved in producing variety of items through injection moulding, blow moulding, extrusion and calendaring. The country in general and Gujarat in particular possess necessary technical skills to produce high quality plastic goods, required machinery, efficient moulds and dyes. In view of the versatility of operations and low cost of production, the state has been ideally suited to serve as a sourcing base. Major international companies from various segments of industry including automobiles, electronics and communication, food processing and packaging have set up large manufacturing plants in the country and have helped to develop the market. India is emerging as one of the fastest growing

markets and is expected to grow annually by 12 to 15% in the coming years. Indian Plastics Industry gained momentum in early 90's when the economy opened up with liberal industrial policies. Since 2000-01, virgin polymer consumption in the country increased from 3.3 MMT to 7.5 MMT in 2009-10 with annual growth of 9.4%.

Plastics Industries' contribution to India's manufacturing GDP touched around 10% in 2009-10. Polymer demand is expected to touch 16.2 MMT by 2015-16 and 20 MMT by 2020.

2.3 Plastic Industry in Gujarat :

The Plastics Industry in Gujarat is one of the oldest in India and among the earliest initiatives towards polymer raw material manufacturing. Majority of India's plastics business revolves around packaging, and as Gujarat contributes 65-70 % to the country's plastics industry, it is home to many small and medium packaging industries. The Plastics Industry in Gujarat contributes 2.17% of India's total exports and is worth \$3513 millions. Thus, so far as growth of Indian economy is concerned, the plastic industry of Gujarat and therefore that of India is making considerable contribution. Therefore, the present study has got motivation from these aspects.

4.Objectives of the study:

- To analyze and evaluate the trend of Earning per share over a period of ten years for the plastic industry Gujarat.
- To compare with Earning Per Share of other industries.
- To make suggestions to the investors ,share brokers ,financial institutions,to take the decision on investment in equity shares of plastic manufacturing companies.
- To know the overall profitability of plastic industry in Gujarat.
- Make comparision with the industry average.

6.Population

For the present study all the plastics manufacturing (public limited companies) industrial units of Gujarat region which are listed at the Bombay Stock Exchange are the members the population. There were total 55 member companies in the GSPMA(Gujarat State Plastic Manufacturing Association). So there were total 55 companies in the population.

7. Sampling units

Out of 55 total numbers of units, I have selected 14 units in a sample on the basis of share capital, annual turnover, installed capacity, total number of workers and the date of incorporation of the company, I have classified all the units of population on the basis of size of the company, age of the company and area of the company.

Table No-1

Sr. no	Name of the company	Share Capital (in crore Rs.)	Annual Turnover 2010(in crore Rs.)	Installed Capacity (ton/year)	Incorporation (year)	Location
1.	JBF Industries ltd	31.2	3562.86	3000	1982	Sarigam
2.	Sintex Industries ltd	27.2	2618.85	60000tpa	1975	Kalol
3.	Nilkamal plastics ltd	14.92	1251.70	75120tpa	1985	Rakholi
4.	Styrolusion ABS (India) ltd	17.58	743.13	2000	1973	Baroda
5.	Essel propack ltd	31.31	418.34	5.7 crore units	1984	Vapi
6.	Plastiblends India ltd	6.5	276.90	50000	1991	Daman
7.	Gopala Polyplast ltd	15.51	190.96	489	1984	Kadi
8	Shree Rama Multi-Tech ltd	38.43	96.33	NA	1993	Kalol
9	Acrysil India ltd	2.97	55.45	220000 units	1987	Bhavnagar
10	Shree Jagdamba Polymers ltd	0.88	39.44	12000	1984	Ahmedabad
11	Gujarat craft Industry ltd	3.11	38.99	200	1984	Kadi
12	Polylink Polymers(India) ltd	15.51	33.36	NA	1993	Dholka
13	Promact Plastics ltd	6.51	9.40	300	1985	Mehsana
14	Ashish polyplast ltd	3.4	7.32	850000	1994	Naroda, Ahmedabad

[Source: - Money control.com, The Economic Times]

3.12 Sampling procedure

The present study covers only those companies which are located in Gujarat and listed on the Bombay Stock Exchange. There were 77 companies. Out of them, I have excluded the companies which are not directly concerned with plastic manufacturing. 18 such companies belong to Heavy Engineering, metals, cooling and chilling, trading companies and some functioning out of Gujarat region were excluded from the population.

The selection of the above companies of the sample have been on the basis of following criteria:

1. Whether the sample represent the companies of different sizes. Age..aeras.

Table no. - 2

Classification of companies based on different sizes

Size of the company	No. of companies	Sample units
Small	17	4
Medium	17	5
Large	21	5
Total	55	14

Table no. - 3

Classification of companies based on age

Year	No. of companies	Sample units
1951 to 1960	1	-
1961 to 1970	3	-
1971 to 1980	8	3
1981 to 1990	22	7
1991 to 2000	20	4
Total	54	14

Table no. - 4

Classification of companies according to the area or location

Area / Zone	Total no. of companies	Sample units
Ahmedabad	23	3
Baroda	6	2
Mehsana	6	3
Saurashtra	5	1
Panchmahal	6	1
South Gujarat	9	4
Total	55	14

So the sample represents whole population in terms of sizes, age and area of location

4.13 Tools and techniques

For the purpose of financial analysis of the plastic industry of Gujarat following accounting and statistical tools and techniques are used.

Accounting Technique:

1. Ratio analysis

Statistical technique:1. Coefficient of Determination (R^2)

2. Trend Analysis(Mann-Kendall Test)

5.4. Earning per Share Ratio:

- It measures the profit available to the equity share holders on a per share basis, i.e. the amount that they can get on every share held. It is calculated by dividing the profits available to the equity shareholders by the number of the outstanding shares. The profits available to the ordinary shareholders are represented by net profits after taxes and preference dividend. Thus,

$$\text{EPS} = \frac{\text{Net profit available to equity holder}}{\text{Number of ordinary share outstanding}}$$

It measures the profit available to the equality shareholders on per share basis, that is, the amount that they can get on every share held. It is calculated by dividing the profits available to the equality shareholders by the number of the outstanding shares. The profit available to the ordinary shareholders are represented by net profit after taxes and preference dividend.

As a profitability ratio, the EPS can be used to draw inferences on the basis of

i) Its trend over a period of time, ii) comparison of the EPS of the other firms, iii) comparison with the industry average.

Earning per Share (Table No.5)														
Composite Earning per Share Ratio based on Weighted Mean where weight (wi) are paid up capital & (Ri) are Earning per Share														
COMPANY NAME	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Σ(wiRi)	Σ wi	wei R -	w-
JBF	429.24	807.54	1387.04	762.44	1290.24	1313.34	479.65	492.43	121.50	1365.68	8449.10	637.04	13.26	63.70
Sintex	184.08	261.29	432.71	533.44	547.37	357.63	229.59	269.27	335.02	457.53	3607.92	283.88	12.71	28.39
Nilkamal	78.42	69.42	573.44	60.96	472.35	524.44	555.92	311.83	400.30	424.47	3471.54	130.08	26.69	13.01
Styrolusion ABS	162.88	270.89	349.69	179.59	490.06	700.43	539.84	631.48	505.18	350.39	4180.44	175.9	23.77	17.59
Essel Propack	459.78	82.06	74.54	54.50	69.22	88.01	98.03	99.60	109.03	113.08	1247.84	313.49	3.98	31.35
Plastiblends India	136.57	120.84	159.25	117.78	104.33	185.51	83.59	76.83	136.24	150.35	1271.27	65	19.56	6.50
Gopala Polyplast	10.29	6.17	-20.94	-33.72	-23.25	1.31	7.98	17.92	30.16	-47.10	-51.18	101.34	-0.51	10.13
Shaily Engineering	17.75	21.83	8.15	-23.94	21.15	38.21	54.90	36.23	65.88	130.12	370.29	69.7	5.31	6.97
Acrysil India	5.89	12.16	36.32	73.81	59.04	60.53	39.38	55.08	79.83	94.83	516.86	33.21	15.56	3.32
Jagdamba Polymers	2.93	5.66	2.74	10.89	11.45	12.16	16.63	31.76	31.58	28.05	153.85	8.8	17.48	0.88
Gujarat Craft Industry	2.92	11.63	2.86	2.83	3.02	6.31	6.69	11.04	11.71	0.00	59.02	29.42	2.01	2.94
Polylink Polymers	9.15	-10.86	0.78	-52.89	12.72	-6.51	20.79	4.87	5.20	1.88	-14.88	137.3	-0.11	13.73
Promact Plastic	-26.23	-78.12	53.45	-18.49	17.32	-9.50	-16.73	-28.77	-7.62	19.14	-95.56	64.02	-1.49	6.40
Ashish Polyplast	0.65	1.09	0.61	0.48	1.56	1.73	2.31	1.53	1.56	1.16	12.68	34	0.37	3.40
Σ(wjRj)	1474.31	1581.58	3060.62	1667.69	3076.56	3273.61	2118.58	2011.10	1825.58	3089.57			11.13	
Σ wj	178.96	188.83	206.50	208.31	208.45	219.91	215.83	220.41	213.72	222.26				
wei R -	8.24	8.38	14.82	8.01	14.76	14.89	9.82	9.12	8.54	13.90	11.13			
w-	9.94	10.49	11.47	11.57	11.58	12.22	11.99	12.25	11.87	12.35				

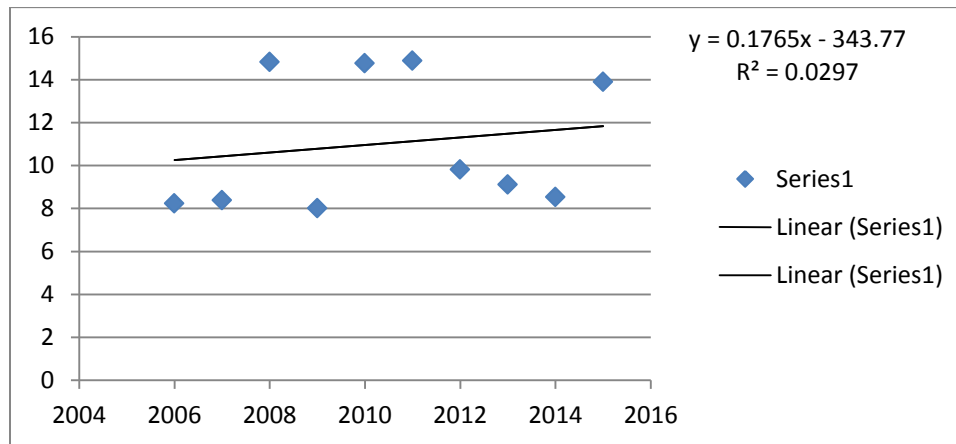
$$R_c = \frac{\sum W_i R_i}{\sum W_i}$$

Composite Earning Per Share Ratio

Table No-6

years	Composite Earning Per Share Ratio	Estimated Ratio (From The Curve/Line)
2005-06	8.24	8.919
2006-07	8.38	9.985
2007-08	14.82	10.829
2008-09	8.01	11.451
2009-10	14.76	11.851
2010-11	14.89	12.029
2011-12	9.82	11.985
2012-13	9.12	11.719
2013-14	8.54	11.231
2014-15	13.9	10.521

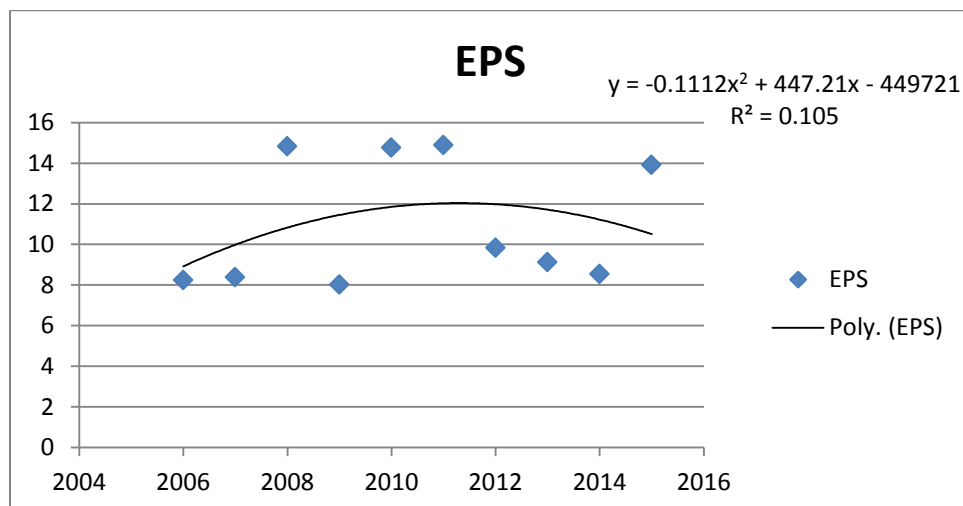
Chart-1



$$Y=0.176x-343.775$$

F statistics=0.244, R=0.17, $R^2=0.030$, Constant B=-343.775, slope=0.176, p value=0.634

Chart-2



To test the following H_0 related to goodness of fit, the Mann-Kendall test is applied to test the following hypothesis.

H_0 : There is no trend in the series of Composite Earning per Share Ratios of the plastic industry of Gujarat

H_1 : There is some trend in the series of Composite Earning per Share Ratios of the industry of Gujarat

Conclusion:

From the above trend detection test I have found that there is an upward trend. From fitted linear regression line the R^2 value is 0.030, and p-value is 0.634, $p > 0.05$ from which we can say that there is no trend in the series and the value of r^2 is so small and the model is not good fit. Therefore researcher have tried to fit 2nd degree polynomial equation on the series and get R^2 value is 0.105 and p value is 0.645 from which we conclude that the 2nd degree polynomial equation is also not good fit.

From the table no. - 1 and chart no.- 2 we can see that so far as earning per share ratio is concern, there is no trend in the series of Earning Per Share of the plastic industry of Gujarat. Ratio at the beginning of the decade it was around 8.24 and it continuously raised up to the level of 14.89 and gone down to the level of 8.4.

References:

- Anderson, Terry & Donald Leal, 1991, "Marketing Garbage: The Solution to Pollution" Free Market Environmentalism, Chapter 9, Pacific Research Institute, pp 123-142.
- Aline Marques Rolim, Luis Felip Nascimento, 2010 "Post – consumer plastic recycling" pp 2-9.
- Bast Joseph L, Hill Peter J & Rue Richard C 1994 "Eco-Sanity: A Common-Sense Guide to Environmentalism" The Heartland Institute, pp 206-210.
- B. K. Sharma 1996-97, Engineering Chemistry, Krishna Prakashan Media (P) Ltd., Meerut.
- C.R.Kothari-2014, New age, Research Methodology, Methods and technique (third Edition), page-7.
- C.J. Moore, G.L. Lattin, A.F. Zellers 2005 "Measuring the effectiveness of voluntary plastic industry efforts: AMRF'S analysis of operation clean sweep." pp - 2
- D'Mello, Pamela 1998 "Plastic Bag Problem" The Asian Age. pp - 163
- Eskeland, Gunnar S and Emmanuel Jimenez 1992 "Policy Instruments for Pollution Control in Developing Countries" The World Bank Research Observer, Volume 7, Number 2, July 1992, pp 145-169.
- Hamid Minhas 2006 - Regional business co-ordinator, plastic products cluster - Lahore diagnostic study- "Turn potential into profit", small and medium enterprise development authority. pp - 9
- Legesse Adane and Diriba Muleta 2011 "Survey on the usage of plastic bags, their disposal and adverse impact on environment: A case study in Jimma city, southwestern Ethiopia" – journal of toxicology and environmental health sciences vol. 3(8) pp. 234-248.
- Meng-yi Wang 2007 A study of "Risk-Taking in food and plastic industries of Taiwan, department and graduate institute of finance." pp – II Michael McDonald Crowley 2003 "Physicochemical and Mechanical characterization of hot-melt extruded dosage forms." pp - 70
- Narayan, Priya 2001, "Analyzing Plastic Waste Management in India: Case study of Polybags and PET bottles" published by IIIIEE, Lund University, Sweden, pp 24-25.

- Piyush Kunnapallil & Sruthijith K K, 2002 “The Plastics Conundrum What is the Way Out?” Centre for Civil Society // [ccsindia.org / ccsindia / policy / envirostudies/wp0033.pdf](http://ccsindia.org/ccsindia/policy/envirostudies/wp0033.pdf) pp- 155.
- Povl A Hansen, Goran Serin, 1993 – “Danish Plastic Industries”, Journal of Research Policy. Research paper no. 10/04, pp – 3-19.
- Prasanna Chandra 2008- 7th Edition - “Financial Management”, pp 67-83
- Rhian Tough 2007 - “Environmental impact and policy options, these submitted of Victoria University and Graduate Institute of Finance”. pp - 4
- Santanu Mandal 2011 - “Porter’s five forces analysis of the Indian plastic industry” International Journal of Multidisciplinary Research Vol.1 Issue 7, November 2011, ISSN 2231 5780 pp- 301.
- S. C. Gupta, 2004 – “Fundamentals of Statistics” – Sixth revised edition, Himalaya Publishing House pp 8.3- 8.7.
- Segal Geoffrey F and Moore Adrian T. 2000 “Privatizing Landfills: Market Solutions for Solid-waste Disposal”. Reason Public Policy Institute. Policy Study Number 267, pp – 33.
- Tammemagi Hans, 1999, “The Waste Crisis: Landfills, Incinerators and the Search for a Sustainable Future” Oxford University Press, New York, Volume –11, Number – 4, pp – 279.
- Dr. Tuong thi Hoi 2002 - Plastic Industry Environmental Review: “An Assessment of the significant environmental aspects and impacts associated with plastic manufacturing in Ho Chi Minh city, Vietnam” pp – 5.
- T. Mathiyazhagan, Deoki Nandan 2010, “Survey Research Method”, pp – 34.
- V. K. Puri, 1984 – “Fundamentals of Statistical Methods” – Allied Publishers Pvt. Ltd. pp - 366-381.
- Yuan- Tien Su 2003 - “A study of measuring the operational performance for the traditional plastic industry in Taiwan”, Department Engineering Management, pp: 1 – 84.
- ;Y.K.SingNew age,Fundamentals of Research Methodology and Statistics, page-79
- Web-site of All India Plastics Manufacturing Association-www.aipma.net
- Web-site of Gujarat State Plastic Manufacturers Association (GSPMA)
www.gspma.com
- Gujarat Industries Directory (Sixth Edition)
- Annual reports of concerned companies.
- <http://delhibird.org/conservation/conservedplastic.html>
- <http://www.economywatch.com/world-industries/plastic/india.html>: Plastic Industry in India. Visited on 19/6/2011
- Web –site of Indian Plastics Federation-www.plasticfederation.org
- Web –site of Life and Health Library.-<http://findarticles.com>
- Web –site of Organization of Plastics Processors of India-www.oppindia.org
- Web –site of Plastindia Foundation-www.plastindia.org
- www.academicjournals.org 2011
- www.dpinfonet.net
- www.bseindia.com
- www.gidonline.net
- www.cmie.com
- www.hotfrog.in/product/plastici
- www.indiainfoline.com
- www.lifeinplast.com
- www.moneycontrol.com
- www.plastemart.com/upload/gspma.as