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**STATEMENT OF THE PROBLEM**

**OBJECTIVES**

**HYPOTHESES**

**RESEARCH METHODOLOGY**

**RESULTS & DISCUSSION**

**FINDINGS**

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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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**WEBSITES**

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 <http://epw.in/user/viewabstract.jsp>



**AN ANALYTICAL STUDY FOR FINANCIAL MANAGEMENT OF FLAT GLASS INDUSTRIES IN INDIA**

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**GOVALI**

**ABSTRACT**

*Indian Flat Glass Industries is one of the core and fast developing industries of India. Flat Glass Industries produces flat glass for residential, commercial construction and automotive industries comprises significant 80% market share. The purpose of this study is to comparative study of financial performance of India leading flat glass industries. The most common tools for financial analysis is various Ratio as used. It is concluded that selected flat glass industries are not equally financial sound. A general conclusion that could be made from the analysis is that, in all the measures, there was a significant improvement in the Indian Flat Glass industries. It is concluded that overall financial performance of flat glass industries are satisfactory in Profitability level, short term liquidity position. Appropriate suggestions have also been provided by the researcher for selected flat glass companies towards the effectiveness of the profitability, working capital Ratio among the selected large, medium and small sized companies.*

**KEYWORDS**

Comparative study, efficiency, Flat Glass Industries, Financial Management, profitability.

**INTRODUCTION**

Despite of facing challenges in competitive market and turbulent external environment flat glass industries of India have made 2010-11 successful years, with achieving desired rate of growth and some of them achieving a double digit gains in profits.

The Indian glass industry is more than hundred years old. Today, the glass industry is estimated to be more than US \$2.5 billion. The growth of the Indian economy has given a fillip to the growth of glass industry in India. India has been able to maintain stable GDP growth rate despite global downturn. Some of the factors which have contributed to such growth are:

- Huge geographic & demographic spread
- Rising middle class population
- Increasing disposable income especially in the rural-agriculture sector
- Increasing employment opportunities specially in Service sector
- Easier availability of finance
- Booming Infrastructure & realty sector, especially through PPP route

Majority of raw materials required by the industry are available indigenously, providing excellent scope for growth and development.

In the recent years, the demand for flat/float glass has outpaced real GDP growth during the last few years. This is the result of growing Indian economy, where demand is boosted by the booming automotive and construction sectors. Innovations have extended the range of uses for glass and allowed it to play a greater role in the world in which we live. In a country like India where temperatures vary from 00 centigrade to over 450 centigrade, in many cities, usage of laminated and glazed glass play an important role in conserving energy.

In addition to, factors like increasing demand from emerging markets of India and China, rising cosmetic sales, changing lifestyle, increasing per capita income are also driving the growth of glass industry.

**DEVELOPMENT AND GROWTH**

Indian glass industry is at the early stage of maturity, but demand for glass is growing steadily. Aggressive and organized efforts on the part of manufacturers and processors are expected to achieve higher levels of awareness among glass specifiers and users. In the next five years, the Indian float glass market will move to higher maturity levels. Further, constant technical innovations by manufacturers are keeping customers constantly interested in glass and glass products. The growth of organized retail, infrastructural growth moving in tandem with the growth in the Indian economy has acted as catalyst for glass industry. It has increased the growth rate of packaging industry as well as the requirement of infrastructural materials. Glass being chemically inert, impermeable, FDA approved and environment friendly has distinct advantages over other forms of material. Also due to the constant lifestyle changes and the growing consumer consciousness about health, hygiene and eco-friendly products, glass is expected to grow at a higher rate in coming years.

The glass industry is still estimated to grow at a healthy rate largely driven by rapid Indian economic growth of 7-8% per annum, growing export potential to Europe, America and rest of the world (Increasing demand of superior packaging standards for the international market) and improved technologies being adopted by the glass manufacturing companies who are investing in innovative and state of the art technology for world class products.

A study was conducted to assess the financial management and efficiency of eleven flat glass companies of India are categorized in to three main segments Float glass, Figured glass and sheet glass.

The Global market for flat glass in 2005 is approximately 40 million tones. Around 70% of flat glass consumed in window for buildings, 10% in glazing products for automotive applications, and 20% used in furniture and other interior applications. Almost half of the world's glass is consumed in Europe and North America. Just four companies Pilkington, Saint-Gobain, Asahi and Guardian, Produce 60% of the world's high quality float glass. Much of the world's lower quality float and sheet glass production is being replaced by high quality float. This segment of the glass industry is still at the nascent stage with just 8 float glass lines compared to China having 196 lines.

India's total installed capacity for flat glass is around 3639.33 tons per day with worth around US \$0.75 billion. There has been an increase in demand for float glass as a result of increased investment from the construction and automotive sectors. Flat glass manufacturers are gearing up to meet this demand and are planning to increase their installed capacities. It has been growing with a CAGR of 13% over the last five years. The major source of revenue comes from Architectural-85 per cent, Automotive-10 per cent and others-5 per cent. The flat glass market of India has huge growth potential. It is seen that general awareness about glass as a building material is increasing. The construction and automobile sectors which are the largest users of float glass are expected to grow with CAGR of 20% and 15% respectively.

**REVIEW OF LITERATURE**

Roger Kennedy (1997), has made an attempt for study of The History and Future of the Flat Glass Industries. He analyzed that market of glass today is as unique as our individual cultures and customer bases. To prepare for the future, we simply have to listen to the needs of our customers and respond with the kinds of innovations that have characterized our industry for the past 3500 years. He elaborated that Using a wide variety of batch combinations, we take glass from our float lines and coat, bend, shape, laminate, and temper it. The resulting products provide us with year-round comfort, protect our fabrics from fading, reduce

our energy costs, block sound transmission, improve our security, and allow us to replace walls of brick and mortar with panoramas of light and natural beauty. Flat glass products also support leading edge technologies such as flat-panel displays, liquid crystal, and computerization.

Pilkington and the Flat Glass Industry (2010) discussed about growth of flat glass industries around the world and discussed that Over the long term, demand for float glass is growing at almost 5 percent per annum. This growth is fuelled by the demand for building glass and automotive glass, which in turn is driven by economic growth. The world flat glass market is expected to recover to over 57 million tonnes in 2010, including 2 million tonnes of rolled glass, from the recession-hit 2009 level of 52 million tonnes.

The goal of corporate finance usually includes wealth maximization, profit maximization, managerial reward maximization, behavioral goal, social responsibility. Modern managerial finance theory operates on the assumption that the primary goal of the business is to maximize wealth of its stock holder, which translates into maximize the price of the firm's common stock. The other goal mentioned above also influence the company's policy but are less important than stock price maximization. (Financial Management, Third edition, by Jaek. shim and Joel G. siegel.)

In past various research was done in the field of Financial Management of various industries have been reviewed during the literature review. Research was done in past for the topic of glass industries, but very few have talked about financial management.

## RESEARCH METHODOLOGY

### OBJECTIVE

To examine the financial management of sample units of flat glass.

### HYPOTHESIS

All the sample units of the flat glass industries are not equally financial managed/sound.

### PERIOD OF STUDY

Sample for five financial years i.e.2006-07, 2007-08, 2008-09,2009-10 and 2010-11 have been used for the purpose of present research work. A study of five years seems to be appropriate for establishing a trend.

### STATISTICAL TECHNIQUES USED

The present study has analyzed the financial management of Nine flat glass companies. In order to evaluate and compare the financial management of selected industries Ratio analysis techniques and average mean has been used.

### DATA COLLECTION

The present study is mainly based on secondary data which were collected from the annual reports, published research reports by various flat glass industries, and related websites.

## RESULT AND DISCUSSIONS

### (A) Inter company Analysis

#### (I) Profitability Ratio

##### (A) Net profit Ratio

TABLE 1: NET PROFIT RATIO

Years	ASAHI INDIA GLASS LIMITED	BHARAT GLASS TUBE LIMITED	GOLD PLUS GLASS INDUSTRY LIMITED*	GOPAL GLASS WORKS LTD	GUJARAT BOROSIL LIMITED	GUJARAT GUARDIAN LIMITED	HNG FLOAT GLASS LTD*	SAINT GOBAIN GLASS INDIA LIMITED**	TRIVENI GLASS LIMITED
2006-07	4.82	(0.13)	-	2.87	9.02	22.92	-	4.56	(13.72)
2007-08	1.16	0.37	-	3.34	6.03	17.68	-	-	(45.88)
2008-09	(3.08)	1.77	(9.59)	0.70	6.62	17.72	(225.97)	5.02	(48.25)
2009-10	0.08	(8.12)	(8.73)	2.53	(1.10)	12.87	(78.03)	8.45	(29.64)
2010-11	0.93	2.49	(25.11)	1.09	(22.18)	3.23	(13.98)	10.87	(52.36)

\*Started commercial production in 2008-09

\*\* Accounts prepared for 15 months from 1<sup>st</sup> January 2008 to 31<sup>st</sup> March 2009 in year 2009.

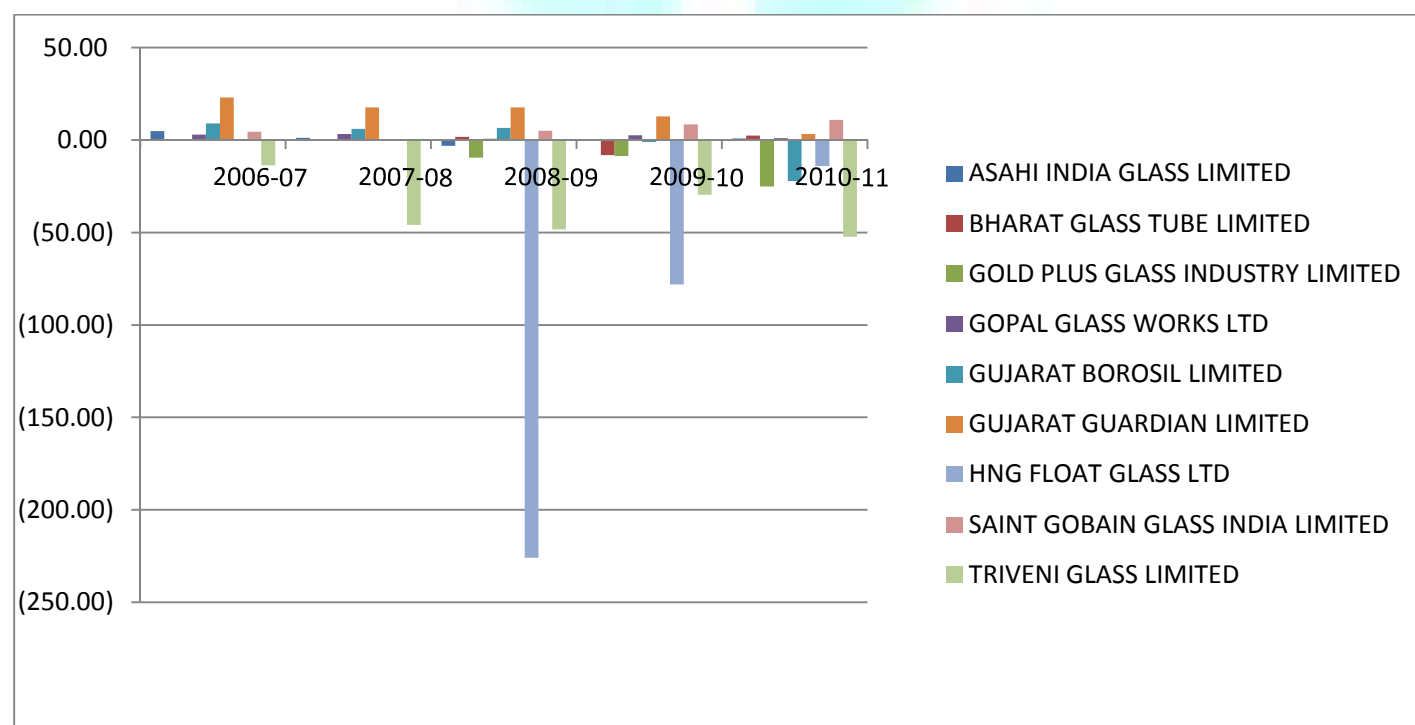


Table: 1 shows the Net Profit ratio of selected units of flat glass Industries. It shows that that the %age of Net profit is declining in each year other than M/S Saint Gobain Glass India Ltd.

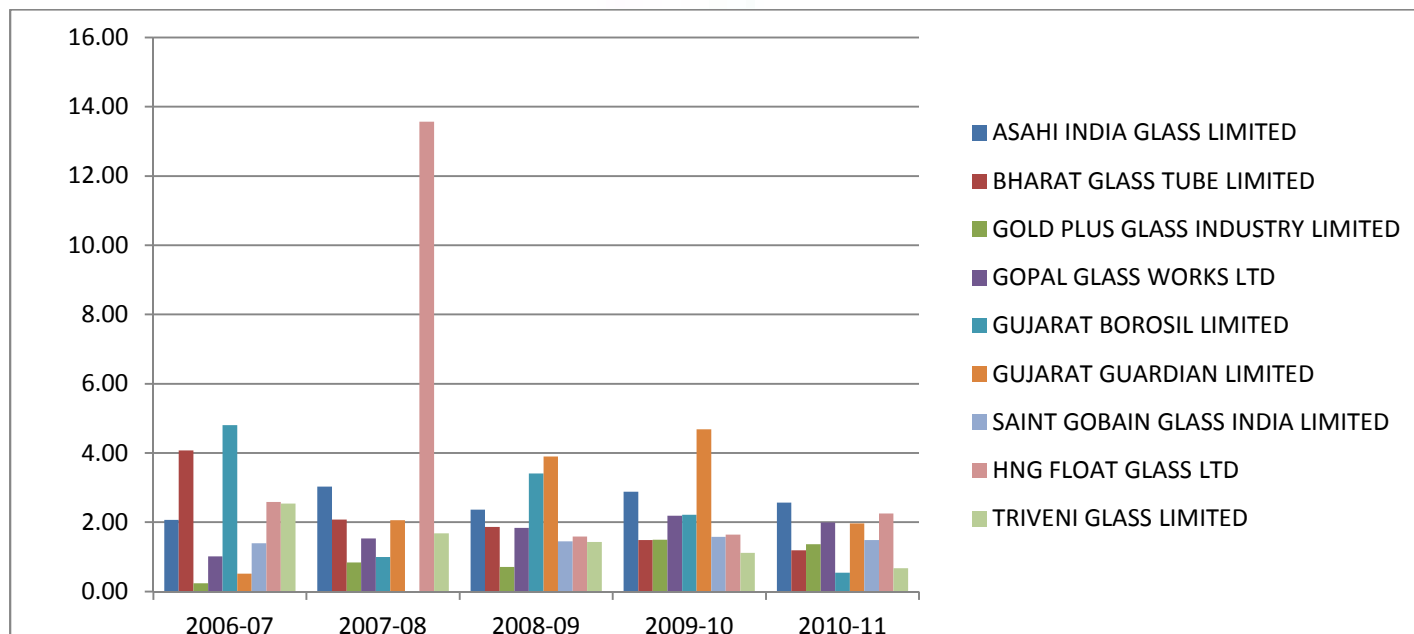


## (II) Financial Position

## (A) Current Ratio

TABLE 2: CURRENT RATIO

Years	ASAHI INDIA GLASS LIMITED	BHARAT GLASS TUBE LIMITED	GOLD PLUS GLASS INDUSTRY LIMITED	GOPAL GLASS WORKS LTD	GUJARAT BOROSIL LIMITED	GUJARAT GUARDIAN LIMITED	SAINT GOBAIN GLASS INDIA LIMITED	HNG FLOAT GLASS LTD	TRIVENI GLASS LIMITED
2006-07	2.07	4.08	0.24	1.01	4.81	0.52	1.40	2.59	2.54
2007-08	3.03	2.08	0.84	1.53	1.00	2.06	-	13.57	1.68
2008-09	2.36	1.87	0.71	1.84	3.41	3.90	1.45	1.59	1.43
2009-10	2.88	1.49	1.50	2.19	2.22	4.68	1.58	1.64	1.12
2010-11	2.57	1.19	1.36	2.00	0.54	1.97	1.49	2.26	0.67



Current Ratio is the study of current assets and current liability. Current Ratio of the company is 2 is good, less than 1 which is show's that current assets of company is insufficient to discharge it's current liabilities. Table 2 shows that Asahi India Glass Ltd has adequate current ratio.

## ACID TEST RATIO

TABLE 3: ACID TEST RATIO

Years	ASAHI INDIA GLASS LIMITED	BHARAT GLASS TUBE LIMITED	GOLD PLUS GLASS INDUSTRY LIMITED	GOPAL GLASS WORKS LTD	GUJARAT BOROSIL LIMITED	GUJARAT GUARDIAN LIMITED	SAINT GOBAIN GLASS INDIA LIMITED	HNG FLOAT GLASS LTD	TRIVENI GLASS LIMITED
2006-07	1.00	3.30	0.24	0.63	4.03	0.35	0.83	2.59	1.32
2007-08	1.25	1.55	0.84	0.90	0.82	1.36	-	13.45	1.18
2008-09	1.12	1.07	0.27	1.34	2.82	1.87	0.84	1.53	1.03
2009-10	1.43	0.98	0.61	1.49	1.56	1.39	0.95	1.14	0.97
2010-11	1.25	0.77	0.64	1.43	0.29	1.08	0.85	1.35	0.54

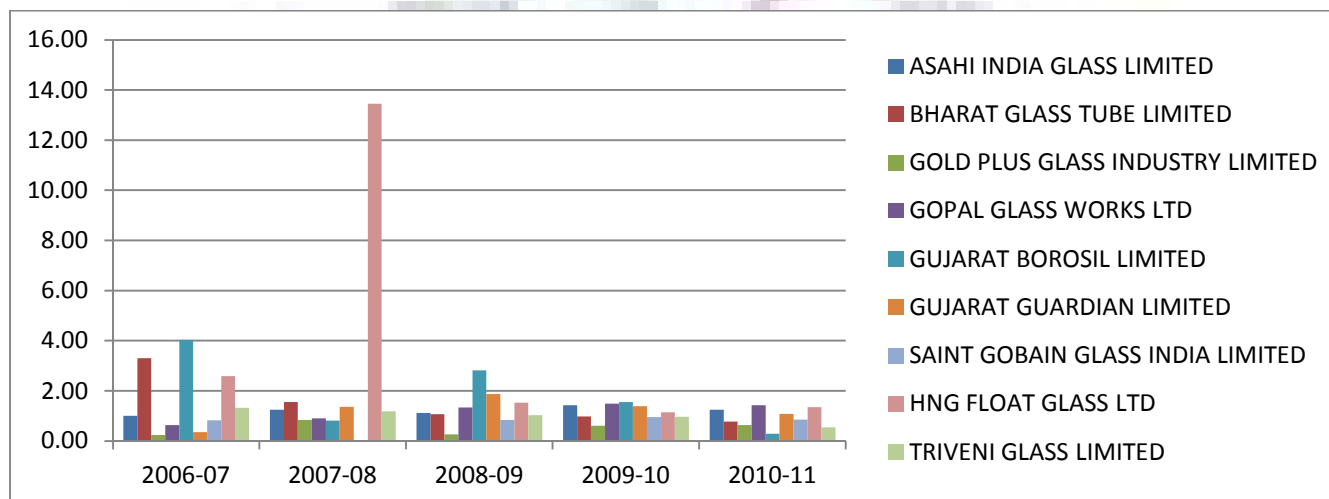
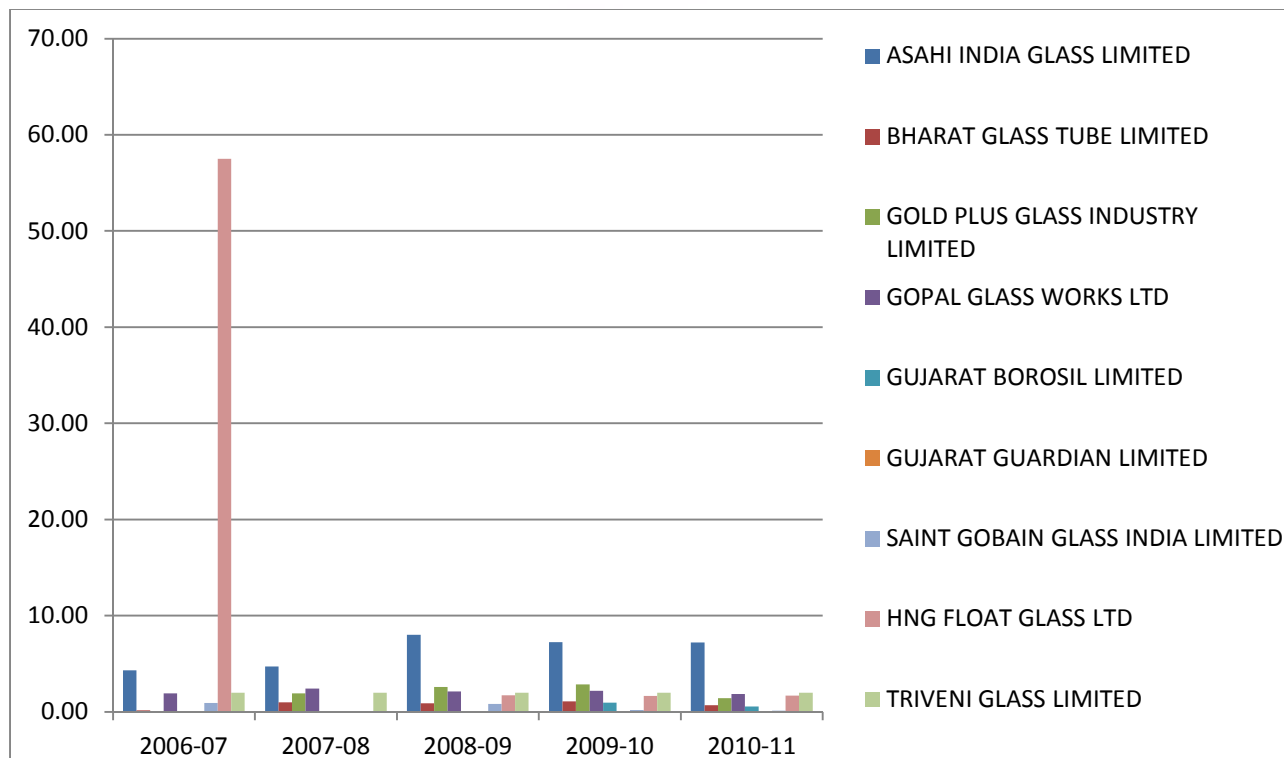


Table: 3 shows that all the companies has sufficient quick ratio, almost all companies' liquidity position is good. Asahi India Glass Ltd has sufficient quick Ratio and liquidity position is sound in comparison of other companies.

## DEBT EQUITY RATIO

TABLE 4: DEBT EQUITY RATIO

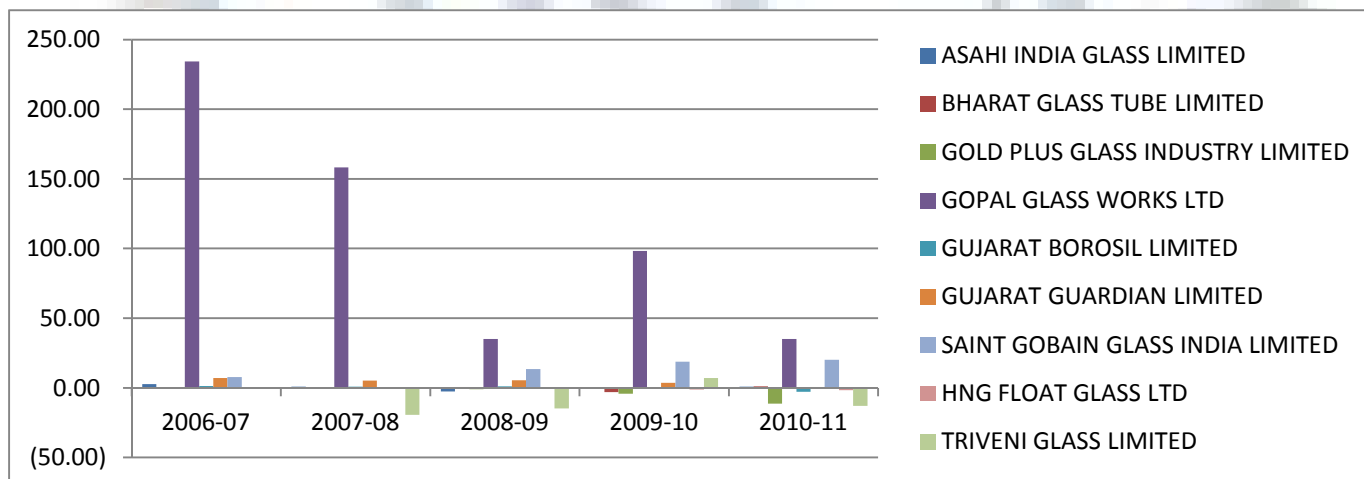
Years	ASAHI INDIA GLASS LIMITED	BHARAT GLASS TUBE LIMITED	GOLD PLUS GLASS INDUSTRY LIMITED	GOPAL GLASS WORKS LTD	GUJARAT BOROSIL LIMITED	GUJARAT GUARDIAN LIMITED	SAINT GOBAIN GLASS INDIA LIMITED	HNG FLOAT GLASS LTD2	TRIVENI GLASS LIMITED
2006-07	4.32	0.16	0.00	1.91	0.00	0.01	0.92	57.52	2.00
2007-08	4.73	0.99	1.92	2.42	0.02	0.01	-	0.00	2.00
2008-09	8.01	0.89	2.58	2.13	0.06	0.00	0.84	1.72	2.00
2009-10	7.24	1.08	2.85	2.19	0.97	0.00	0.20	1.66	2.00
2010-11	7.20	0.68	1.42	1.85	0.56	0.00	0.14	1.69	2.00



## EPS RATIO

TABLE 5: EARNING PER SHARE

Years	ASAHI INDIA GLASS LIMITED	BHARAT GLASS TUBE LIMITED	GOLD PLUS GLASS INDUSTRY LIMITED	GOPAL GLASS WORKS LTD	GUJARAT BOROSIL LIMITED	GUJARAT GUARDIAN LIMITED	SAINT GOBAIN GLASS INDIA LIMITED	HNG FLOAT GLASS LTD	TRIVENI GLASS LIMITED
2006-07	2.63	(0.03)	-	234.30	1.40	7.07	7.72	0.00	(0.24)
2007-08	0.83	0.05	-	158.25	0.82	5.16	0.00	0.00	(19.44)
2008-09	(2.54)	0.74	(0.89)	35.03	1.00	5.43	13.41	(0.40)	(14.70)
2009-10	0.08	(3.12)	(4.28)	98.36	(0.14)	3.59	18.76	(1.23)	7.08
2010-11	0.95	0.98	(11.29)	35.13	(2.77)	0.71	20.18	(1.69)	(12.83)

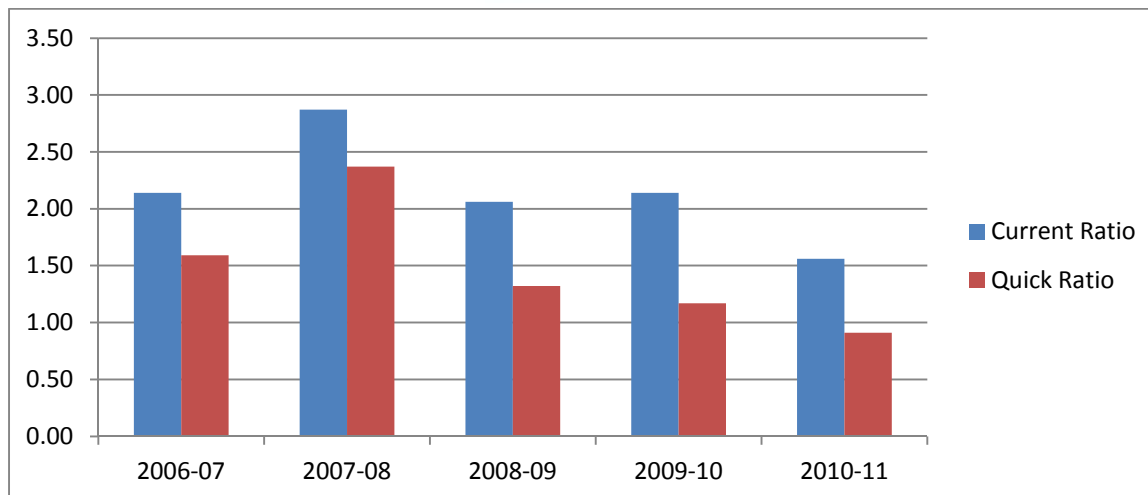


EPS shows the earning/share for share holders. Table 5 shows that in year 2006-07 to 2010-11 EPS of Gopal Glass Ltd was highest.

#### INDUSTRY ANALYSIS INTRA ANALYSIS

TABLE: 6

Years	Current Ratio	Quick Ratio
2006-07	2.14	1.59
2007-08	2.87	2.37
2008-09	2.06	1.32
2009-10	2.14	1.17
2010-11	1.56	0.91

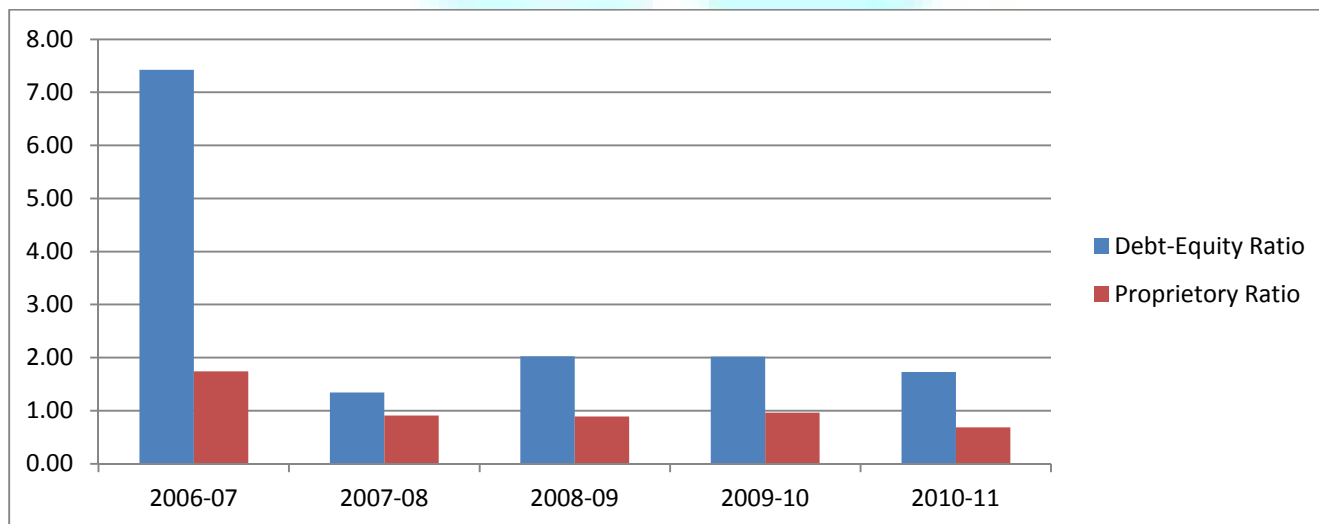


Current Ratio of the company 2:1 is satisfactory, which shows that all companies current assets are sufficient to pay off the current liabilities. A quick Ratio of 1:1 is considered satisfactory. All companies Quick Ratio is satisfactory.

#### SOLVENCY ANALYSIS

TABLE 7: SOLVENCY RATIO

Years	Debt-Equity Ratio	Proprietary Ratio
2006-07	7.43	1.74
2007-08	1.34	0.91
2008-09	2.03	0.89
2009-10	2.02	0.96
2010-11	1.73	0.68

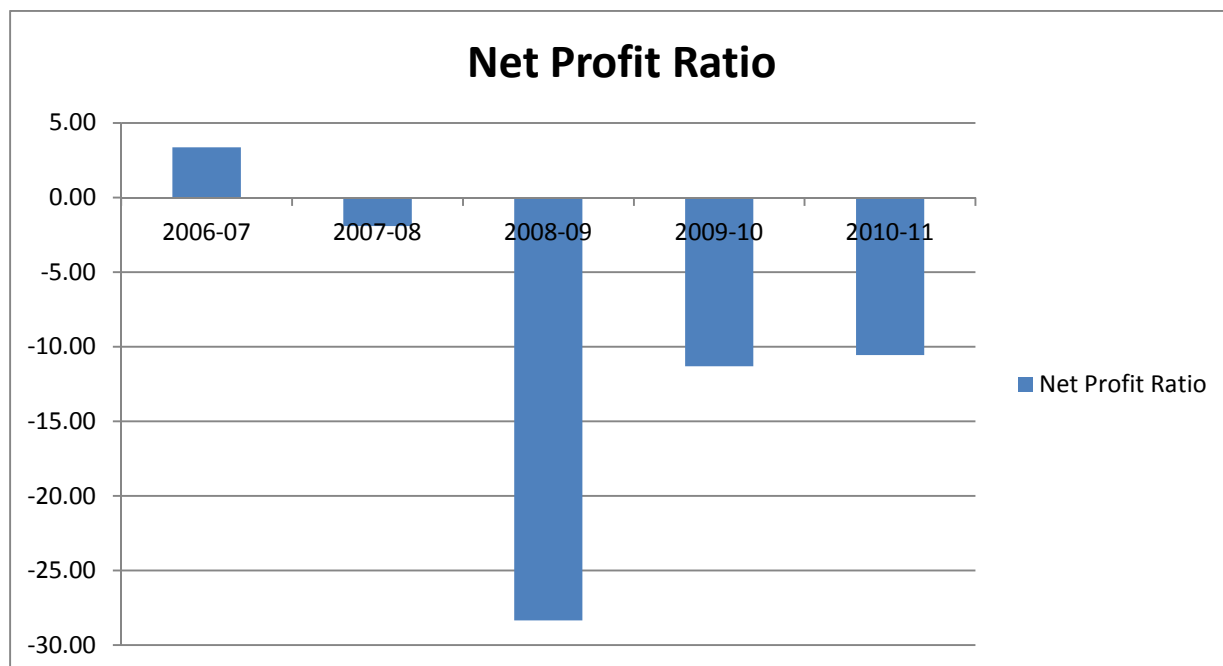


The overall solvency Ratio is unfavorable from shareholder point of view. Debt is higher in comparison of own Investment.

#### PROFITABILITY RATIO

TABLE 8: PROFITABILITY RATIO

Years	Net Profit Ratio
2006-07	3.37
2007-08	-1.92
2008-09	-28.34
2009-10	-11.30
2010-11	-10.56

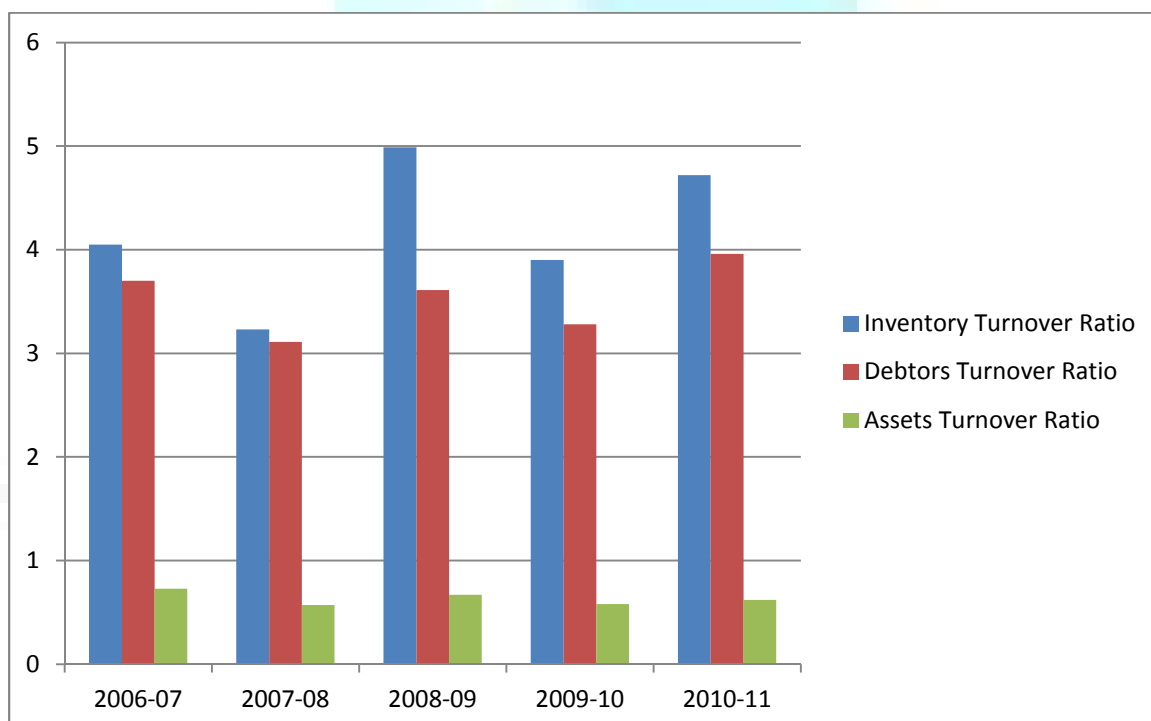


The Net profit Ratio is Negative in all years except 2006-07. The Net Profit indicates that the overall Profit in the industries is decreasing which indicates weak financial position of Flat Glass Industries.

#### EFFICIENCY RATIO

TABLE 9: EFFICIENCY RATIO

Years	Inventory Turnover Ratio	Debtors Turnover Ratio	Assets Turnover Ratio
2006-07	4.05	3.70	.73
2007-08	3.23	3.11	.57
2008-09	4.99	3.61	.67
2009-10	3.90	3.28	.58
2010-11	4.72	3.96	.62



In 2010-11 the stock turnover ratio is very high, which indicates Flat glass Industries has a less investment in Inventories. The Higher Debtors Turnover Ratio Indicates that debtors are more liquid, which is highest in year 2008-09. The total Assets turnover ratio shows the efficiency of fixed assets.

#### FINDINGS

The observations and findings of present study are as under:

1. Profitability: Decline
2. Working Capital: Satisfactory managed.
3. Solvency: Not Good.
4. Financial Strength: Not Satisfactory.

On the basis of the analysis of profitability ,working capital and solvency, It can be concluded that the overall performance of selected Nine companies of flat glass profitability is decline, short term financial position of satisfactory, company able to manage its working capital cycle satisfactorily and solvency position of selected companies are not up to mark.

## CONCLUSION

Indian Flat Glass Industries is independent industry. Industry has a mix of indian and multinational companies. It has a large domestic and export market. The main problems with Flat glass industries in india are relating to high cost of Raw Material like Soda ash, fuel prices, Cheaper import from China which require immediate imposition of anti dumping duty to safeguard domestic industries. One main causes of losses in this industries is turbulent Internal/external environment and thought competition which results in decrease in selling prices. Form the above study we can concluded that All Units of Flat Glass Industries of India are not equally Financially sound.

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