

# A Study on Solvency and Efficiency Analysis of Selected Cement Manufacturing Companies Having Plant in Gujarat

Ms. Rinkal A. Tanna, M.Phil.-NET, Gujarat University, India, rinkaltanna222@gmail.com

**Abstract:** Solvency indicates the company's ability to meet its long-term debts and other financial obligations. Along with liquidity, solvency enables businesses to continue operating. It helps us understand whether a firm is stout enough to pay off long-term debt. Efficiency analysis is used by analysts to measure the performance of a company's short-term or current performance. Therefore, the main objective of this paper is to analyze the solvency and efficiency of selected eight cement manufacturing companies having plant in Gujarat for the period of eight years from 2009-10 to 2016-17. To meet this objective the technique of accounting ratio analysis is used. To analyze solvency position debt-equity ratio and debt to assets ratio are used while for analyzing management efficiency the debtor's turnover, total assets turnover and fixed assets turnover ratios are used. Moreover, statistical tools like Arithmetic Mean, Standard Deviation, Co-efficient of Variation and Analysis of Variance are used for analysis to make data more meaningful and presented through graphs and tables to make them easily understandable. This study concludes that the solvency and efficiency position of sample companies were uneven. Some companies had satisfactory results whereas others need some necessary measures in some fields.

**Key words:** Cement industry, Solvency analysis, Efficiency analysis, debt to equity, debt to assets, debtor's turnover, total assets turnover and fixed assets turnover.

## I. INTRODUCTION

Cement is a key material required in diverse type of construction such as buildings, mighty dams, bridges, factories, houses etc. Indian Cement Industry is around 88 years old. Indian cement industry is the second largest cement producer in the world after China with nearly 420 million tons, as of year 2017. Of the total capacity 98 percent lies with private sector and remaining with public sector. The top 20 companies accounting for around 70 percent of the total production which indicates that large plants have a higher share in production.

Cement demand in India is expected to increase because of government's push for large infrastructure projects. The housing sector is the biggest demand driver of cement which is 67 percent of total consumption in India. In the coming years it is expected that Indian cement industry would have more growth. Despite it being second largest cement producers in the world, Indian cement industry is in the list of lowest per capita consumption of cement. The reason is poor rural people who can't afford the commodity. In a fast-developing economy as India there is a large possibility of expansion of cement industry.

## II. HISTORY OF CEMENT INDUSTRY

Manufacturing of cement was firstly started in 1889 by a Kolkata-based company. It had made cement from

Argillaceous. After that in early 1900's the industry started getting the organized shape in Madras. South India Industries Limited began manufacturing of Portland cement in 1904. But the effort failed and the company had to halt production.

Finally, the first licensed Cement Company 'INDIA CEMENT COMPANY LTD.' was established in 1914 in Porbandar. The capacity was 10000 tons and production of 1000 tons installed. During the World War 1 the first initial thrust to the cement industry in India and after that industry started growing at a fast rate in terms of production, manufacturing units and installed capacity. This stage in the history was known as Nascent Stage of Indian Cement Industry. In 1927, Concrete Association of India was established with a view to creating public awareness on the utility of cement. In the year 1956 the price and distribution control system was established to ensure the fair price model for consumers and manufacturers. In the year 1977, government authorized new as well as existing units to put higher price tag for their product. In 1982, government introduced a quota system to give encouragement to cement industry.

Complete freedom to cement industry was given to meet the challenges of free market competition in 1989. In the year 1991 liberalization policy was adopted and the cement industry was de-licensed. As a result, there was an

accelerated growth for industry. Major investors invested heavily for capacity expansion and laid greater focus on exports. The government played the determinant role in the growth of the industry. At present international standards and benchmarks in the quality of cement and building materials produced are met in India and is able to compete international markets.

### III. CEMENT INDUSTRY OF GUJARAT

Gujarat was the first state in which the first cement company was established. Hence, it can be said that Gujarat is the pioneer state for cement industries. The top 20 companies in production and export of cement includes companies which have cement plants in Gujarat. They are namely Ambuja cement limited, Ultratech cement and J.K. Lakshmi cement. The aim of this research I also to evaluate performance of selected cement manufacturing companies in Gujarat. In accordance with this aim profiles of selected cement companies in Gujarat are as under.

Sr.no.	Name of company	Symbol
1	Ambuja Cements Ltd.	ACL
2	Shree Digvijay Cement Co. Ltd.	DCL
3	Gujarat Sidhee Cement Ltd.	GSCL
4	Saurashtra Cement Ltd.	SCL
5	Sanghi Industries Ltd.	SIL
6	Ultratech Cement Ltd.	UTCL
7	JK Lakshmi Cement Ltd.	JKLC
8	Tata Chemicals Ltd.	TCL

### IV. LITERATURE REVIEW

[1] **Gu et al. (2016)** studied on performance evaluation for composites based on recycled polypropylene using principle component analysis and cluster analysis. The main objective was to evaluate the performance of plastic composites based on multiple properties. With the experimental research design plastic composites were tested by PCA and CA techniques. The conclusion was both virgin and recycled plastics are improved by the addition of fillers.

[2] **Vanitha (2017)** examined Intensifying performance of Indian manufacturing industries with an objective to analyze the growth performance of Indian manufacturing industries from 1991-92 to 2013-14. Economic survey was done for the purpose. With the technique of growth model

variables like manufacturing construction, electricity, gas & water supply and GDP were evaluated. Findings from the research was that analysis of growth performance of manufacturing industries, growth rate of secondary sector during intensive liberalization period was higher.

[3] **Vanishree (2011)** examined performance evaluation of Indian Textile Industries. The main objective was to evaluate performance of Indian textile industry. Descriptive research design was used. Secondary data from USDA office of global analysis was studied for the period of five years 2005-06 to 2009-10. By analyzing world cotton production, consumption, area and yield of cotton it was found that it is necessary to identify and highlight the key

strengths, the available resources and large growing domestic market through focused marketing efforts.

[4] **Kariithi & Kihara (2017)** in their study Factors affecting performance of manufacturing firms in Kenya: A case of pharmaceutical firms in Nairobi country. The main objective was to study how research constraints and ICT effects on the manufacturing performance of Kenya. The conclusive research was done on the primary data through questionnaire. 252 sample companies were studied and SPSS technique was applied on necessary variables. The result was ICT positively and significantly affected performance of pharmaceutical manufacturing industries in Kenya.

[5] **Gupta (2017)** worked on a study on 'Performance Evaluation of Select Textile Companies an Empirical Analysis'. The aim was to measure and compare the performance of selected textile companies in India during last five years. From research papers, reports published by IBEF and annual reports secondary data was collected and analysed. Sample size of seven companies was taken from 2011-12 to 2015-16. Different variables were tested for profitability, solvency and liquidity analysis. Various statistical tools, ratio analysis and ANOVA techniques were applied. It was concluded that there is a significant difference in the performance of all selected companies in textile industry in terms of their liquidity, solvency and managerial efficiency.

[6] **Saigeetha & Surulivel (2017)** worked on a study on financial performance using ratio analysis of BHEL, TRICHY with an objective to identify the cash fluctuations of profitability, liquidity positions in the BHEL. With the help of analytical design secondary data from annual reports and reference books was studied from the period 2011 to 2015. Ratio analysis was used to measure and the profitability. The finding was the decrease in profits for the company is due to the decreasing profitability and a company should reduce cost to improve profitability.

[7] **Bhunja (2011)** in his study financial performance analysis: A case study used secondary data from CMIE database and public enterprise survey. The main objective was to make a study on overall financial performance of selected public sector drug and pharmaceutical enterprises in India during the study period from 1997-98 to 2008-09. Techniques like ratio analysis and statistical tools A.M., S.D., C.V., linear multiple regression and T-test were applied to measure the liquidity, solvency and profitability of the selected sector. Results revealed that the Indian pharmaceutical industry will witness an increase in the market share. The sector is poised not only to take new challenge but to sustain the growth momentum of the past decade.

[8] **Smriti & Khan (2018)** analyzed efficiency analysis of manufacturing firms using data envelopment analysis

technique. The main objective was to measure the efficiency of manufacturing firms of Bangladesh. By cross sectional research design from Enterprise survey website secondary data was collected. A large sample of 1007 units was taken and by DEA technique variables like sales, cost of raw material etc. were tested. The results illustrate that diversity of different forms in terms of performance and emphasize the relevance of benchmarking in identifying the best practice.

## V. OBJECTIVES OF THE STUDY

1. To study the solvency position of the selected cement companies in Gujarat.
2. To know the efficiency of the selected cement companies in Gujarat.

## VI. RESEARCH METHODOLOGY

### 6.1 Collection of data

The required secondary data for the sample companies were collected from the annual reports for the period of eight years from 2009-10 to 2016-17.

### 6.2 Sampling Design

The present study is related to the cement industry. Random sampling technique is used in this research to select the sample companies. From state-wise cement plants listed in Cement Information System (CIS) by Department for Promotion of Industry & Internal Trade (DPIIT) under the Government of India, Ministry of commerce and industry, the companies that are having cement manufacturing plants in Gujarat are selected as a sample.

There are twenty-four states in India having cement plants as per CIS portal. In Gujarat state there are twenty-four cement plants by seventeen companies. Out of these eight companies are selected as a sample in this study. All these companies are listed on Bombay Stock Exchange (BSE).

### 6.3 Tools and Techniques-

To analyze the financial performance of the selected cement companies in Gujarat, the following tools and technique have been applied.

#### (1) Statistical tools

- Arithmetic Mean
- Standard Deviation
- Co-efficient of Variation
- Analysis of Variance

#### (2) Technique

- Accounting Ratio analysis

## VII. HYPOTHESIS OF THE STUDY

For the fulfillment of above-mentioned objectives, the following hypothesis have been formulated and tested.

H<sub>01</sub>: There is no significant difference in the mean solvency ratios of the sample companies.

H<sub>02</sub>: There is no significant difference in the mean efficiency ratios of the sample companies

## VIII. DATA ANALYSIS AND INTERPRETATION

### 8.1 Solvency Analysis-

To analyze the solvency of the selected companies' solvency ratios are calculated here. Solvency ratios determine whether a company can stay solvent. It look at how much capital comes in the form if debt or assesses the ability of a company to meet its financial obligations. Solvency ratios are also known as leverage ratios. Leverage ratios help in assessing the risk arising from the use of debt capital.

### 8.1.1 Debt-equity Ratio

Debt-equity ratio is used to evaluate company's financial leverage. It measures the degree to which a company is financing its operations through debt versus owned funds. Higher ratio indicates a company with higher risk to shareholders. A low ratio implies a smaller claim of creditors and for the company the servicing of debt is less burdensome and consequently its credit standard is not adversely affected. D/E ratio indicates the margin of safety to the creditors. Formula for D/E ratio is as under-

$$\text{Debt-equity Ratio} = \frac{\text{Debt}}{\text{Shareholder's equity}}$$

TABLE – 8.1.1 DEBT-EQUITY RATIO

Yr./Co.	ACL	DCL	GSCL	SCL	SIL	UTCL	JKLC	TCL	IND.AV
2010	0.34	0.28	0.77	2.11	1.39	0.63	1.25	1.04	0.98
2011	0.43	0.60	1.19	2.24	1.43	0.71	1.32	0.97	1.11
2012	0.40	0.47	1.23	(14.66)	1.24	0.65	1.26	1.17	(1.03)
2013	0.37	0.70	0.97	1.91	1.05	0.67	1.40	1.09	1.02
2014	0.38	0.87	1.14	1.42	0.83	0.61	1.64	0.95	0.98
2015	0.37	-	0.93	0.71	0.85	0.72	2.01	0.96	0.94
2016	0.21	1.09	0.83	0.55	1.01	0.66	2.12	0.81	0.91
2017	0.23	0.95	1.44	0.58	0.85	0.52	2.27	0.45	0.91
Mean	0.34	0.71	1.06	(0.64)	1.08	0.64	1.66	0.93	0.73
S.D.	0.08	0.28	0.23	(5.7)	0.24	0.06	0.42	0.22	0.71
C.V.	23.53	39.44	21.7	891	22.22	9.38	25.3	23.65	97.26
Min.	0.21	0.28	0.77	(14.66)	0.83	0.52	1.25	0.45	(1.03)
Max.	0.43	1.09	1.44	2.24	1.43	0.72	2.27	1.17	1.11

\*Source: Computed from secondary data

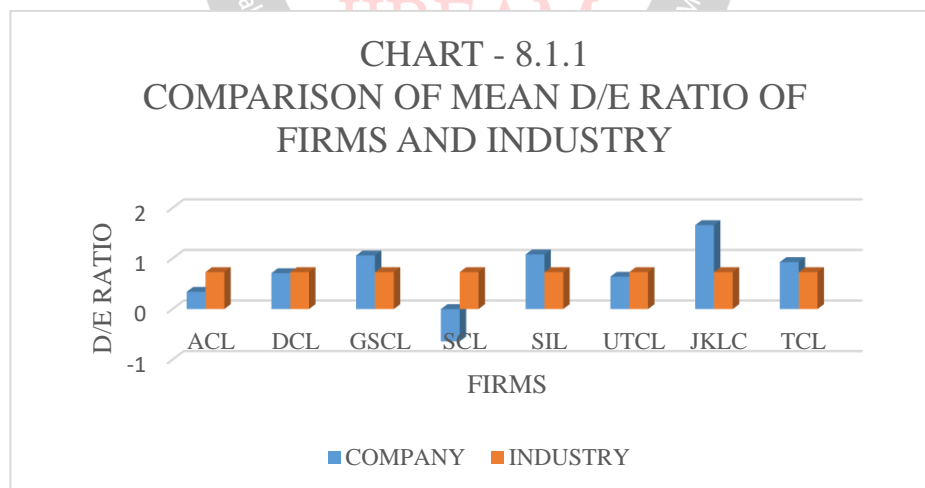


Table 8.1.1 reveals that the mean D/E ratio is 0.73, J K Lakshmi Cement at 1.66 had the highest debt equity ratio, which is more than double the industry average. So it can be said that JKLC was the high levered company and involve the practices of using more borrowed funds rather than the own funds. SCL, at least the industry average,

indicates the company depends more on owners fund among the sample companies studied.

From the coefficient of variation scores, it can be concluded that Ultra tech cement had a highly stable and perfect consistency in debt equity ratio. SCL, on the other

hand suffered the most volatile and inconsistent in capital structure during the study period

**TABLE – 8.1.1(a) ANOVA – DEBT EQUITY RATIO**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	25.428	7	3.633	.866	.539
Within Groups	230.782	55	4.196		
Total	256.210	62			

\*Significant at 5% level

H<sub>0</sub>: There is no significant difference in the mean D/E ratio among the sample companies during the study period.

H<sub>1</sub>: There is a significant difference in the mean D/E ratio among the sample companies during the study period.

To test the significance of variance of debt equity ratio among the sample companies under the study, the ‘ANOVA’ test has been applied. Table 8.1.1(a) shows that the calculated p value 0.539 is not significant at 5%Level, thus the null hypothesis is accepted. Therefore, the debt equity ratio doesn’t vary significantly amongst the sample companies.

### 8.1.2 Debt to Asset Ratio

Debt to asset ratio is a leverage ratio that defines the total amount of debt relative to assets. It measures the company’s assets that are financed by the debt. Ratio greater than 1 shows that the company has more liabilities than assets. A ratio less than 1 indicates that a greater portion of assets of a company is funded by equity. Formula for this ratio is as under-

$$\text{Debt to Asset Ratio} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

**TABLE – 8.1.2 DEBT TO ASSET RATIO**

Yr./co	ACL	DCL	GSCL	SCL	SIL	UTCL	JKLC	TCL	IND. AV
2010	0.31	-	0.69	0.96	0.65	0.41	0.62	0.60	0.61
2011	0.30	0.37	0.54	1	0.59	0.46	0.57	0.58	0.55
2012	0.28	0.32	0.55	1.07	0.55	0.36	0.53	0.54	0.53
2013	0.27	0.41	0.49	0.66	0.51	0.37	0.56	0.52	0.47
2014	0.27	0.46	0.49	0.59	0.45	0.35	0.60	0.49	0.46
2015	0.27	-	0.53	0.41	0.46	0.39	0.65	0.49	0.46
2016	0.17	0.52	0.45	0.36	0.50	0.37	0.67	0.45	0.44
2017	0.19	0.49	0.59	0.37	0.46	0.32	0.69	0.31	0.43
Mean	0.26	0.43	0.54	0.68	0.52	0.38	0.61	0.5	0.49
S.D.	0.05	0.08	0.07	0.3	0.07	0.04	0.06	0.09	0.06
C.V.	19.23	18.6	12.96	44.12	13.46	10.53	9.84	18	12.24
Min.	0.17	0.32	0.45	0.36	0.45	0.32	0.53	0.31	0.43
Max.	0.31	0.52	0.69	1.07	0.65	0.46	0.69	0.60	0.61

\*Source: computed from secondary data



CHART - 8.1.2  
COMPARISON OF MEAN D/A RATIO OF FIRMS  
AND INDUSTRY

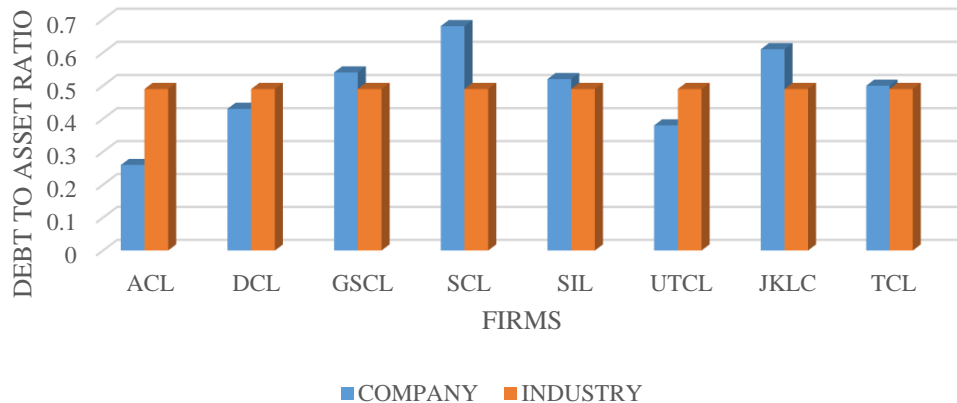


Table 8.1.2 reveals that the mean debt to asset ratio is 0.49. Saurashtra Cement Ltd. at 0.68 had the highest debt to asset ratio, which is about 40% more than the industry average, indicates that company may be putting itself at risk of defaulting on its loans if interest rates were to raise suddenly. ACL, at half of the industry average, indicates that greater portion of company's assets is funded by equity.

From the coefficient of variation scores, it can be said that JKLC had a highly stable consistency in debt to asset ratio. SCL,

on the other hand, suffered the most volatile and inconsistent ratio during the study period.

TABLE – 8.1.2(a) ANOVA - DEBT TO ASSET RATIO

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.982	7	.140	9.189	.000
Within Groups	.825	54	.015		
Total	1.807	61			

\*Significant at 5% level.

H<sub>0</sub>: There is no significant difference in the mean debt to asset ratio among the sample companies during the study period.

H<sub>1</sub>: There is a significant difference in the mean debt to asset ratio among the sample companies during the study period.

To test the significance of variance of debt to asset ratio among the sample companies, the 'ANOVA' test has been applied. Table 4.7(a) shows that the calculated p value 0.000 is significant at 5% level, thus the null hypothesis is rejected. Therefore, the debt asset ratio varies significantly among the sample companies.

## 8.2 Efficiency Analysis-

Efficiency analysis is used by analysts to measure the performance of a company's short-term or current performance. To analyse the efficiency of selected companies' efficiency ratios are calculated in this section. Efficiency ratios are also known as activity ratios or

turnover ratios. All these ratios use numbers in a company's current assets or current liabilities, quantifying the operations of the business.

### 8.2.1 Debtor's Turnover

The debtor's turnover ratio is an accounting measure used to quantify effectiveness of a company in collecting its receivables or money owed by clients. This ratio shows efficiency of the credit and collection policy implemented by the management to realize the outstanding receivables. It is also known as account receivable turnover ratio. Debtor's turnover ratio indicates the number of times receivables are rotate in a year. The formula to calculate the debtor's turnover is-

$$\text{Debtor's Turnover} = \frac{\text{Net Sales}}{\text{Average Debtors}}$$

TABLE – 8.2.1 DEBTOR’S TURNOVER

Yr./c	ACL	DCL	GSCL	SCL	SIL	UTCL	JKLC	TCL	IND.AV
2010	52.71	29.98	22.18	-	124.41	34.41	57	6.84	46.79
2011	46.08	82.16	9.42	18	163.54	32.29	46.44	9.48	50.93
2012	42.60	69.50	17.16	20.55	90.95	26.54	51.91	7.20	40.80
2013	40.82	65.87	28.19	34	46.24	22.45	46.51	4.30	36.05
2014	43.14	46.99	24.96	35.36	55.69	55.69	17.47	3.56	33.26
2015	36.43	-	29.05	31.72	68.81	68.81	18.24	4.13	32.14
2016	26.73	33	32.45	31.70	47.08	47.08	20.59	4.23	28.40
2017	29.10	30.24	41.59	33.26	51.85	51.85	20.19	3.59	30.61
Mean	39.70	51.11	26.52	29.23	81.07	24.02	42.98	5.42	37.37
S.D.	8.64	21.40	9.76	6.96	42.75	6.41	8.90	2.17	8.08
C.V.	21.76	41.87	36.80	23.81	52.73	26.69	20.71	40.04	21.62
Min.	26.73	29.98	9.42	18	46.24	17.47	31.38	3.56	28.40
Max.	52.71	82.16	41.59	35.36	163.54	34.41	57	9.48	50.93

\*Source: computed from secondary data

CHART - 8.2.1  
COMPARISON OF MEAN DEBTOR'S T/O OF  
FIRMS AND INDUSTRY

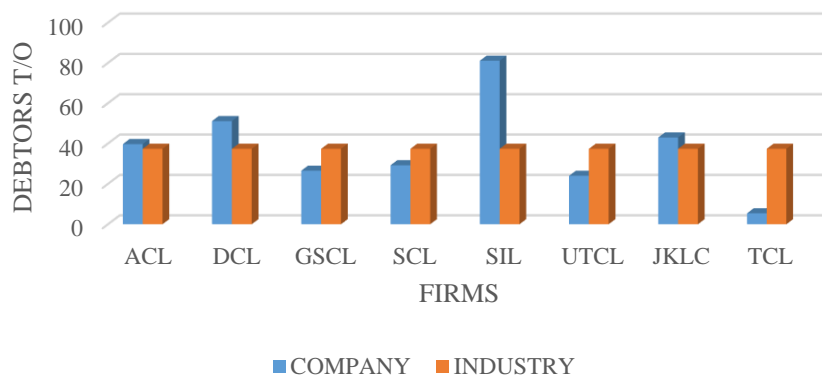


Table 8.2.1 indicates that the mean debtor’s turnover ratio is 37.37. Sanghi Industries Ltd. at 81.07 had the highest debtor’s turnover ratio, which is more than double the industry average. Hence, it can be said that SIL, is more efficient in managing the receivables. TCL, at about 85% less than the industry average, signifies an unsatisfactory debtor’s turnover ratio, poor credit policies and collection

prices among the sample companies studied. From the coefficient of variation scores, it can be said that JKLC had a highly stable receivable collection period. SIL, on the other hand, suffered the most volatile which indicates high inconsistency and unproductive management of debtors, during the study period.

TABLE – 8.2.1 (a) ANOVA – DEBTOR’S TURNOVER

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	28055.582	7	4007.940	12.094	.000
Within Groups	17896.028	54	331.408		
Total	45951.610	61			

\*Significant at 5% level

$H_0$ : There is no significant difference in the mean debtor's turnover among the sample companies during the study period.

$H_1$ : There is a significant difference in the mean debtor's turnover among the sample companies during the study period.

To test the significance of variance of debtor's turnover among the sample companies under the study, the 'ANOVA' test has been applied. Table 8.2.1(a) shows that the calculated p value 0.000 is significant at 5% level, thus the null hypothesis is rejected. So, the debtor's turnover varies significantly amongst the sample companies.

### 8.2.2 Total Assets Turnover

The total assets turnover measures the efficiency of a company's assets to generate sales. This ratio calculates the net sales as a percentage of its total assets. A higher ratio is favored because it implies that the company is efficient in generating sales. A lower ratio shows that a company is not using the assets efficiently and has internal problems. Following is the formula for this ratio –

Net Sales

Total Assets Turnover = -----

Average Total Assets

**TABLE – 8.2.2 TOTAL ASSETS TURNOVER**

Yr/co	ACL	DCL	GSCl	SCL	SIL	UTCL	JKLC	TCL	IND.AV
2010	0.98	1.27	3.40	-	0.38	1.04	0.83	0.72	1.23
2011	0.87	1.28	1.84	0.81	0.49	1.12	0.59	0.81	0.98
2012	0.81	1.23	1.93	0.93	0.50	0.92	0.66	0.85	0.98
2013	0.72	1.02	1.73	1.21	0.52	0.80	0.69	0.78	0.93
2014	0.74	1.21	1.35	1.25	0.57	0.70	0.61	0.78	0.90
2015	0.67	-	1.55	1.37	0.53	0.70	0.60	0.88	0.90
2016	0.49	1.23	1.51	1.29	0.43	0.73	0.63	0.91	0.90
2017	0.43	0.82	1.32	1.10	0.56	0.70	0.74	0.53	0.78
Mean	0.71	1.15	1.83	1.14	0.50	0.84	0.67	0.78	0.95
S.D.	0.18	0.17	0.67	0.20	0.06	0.17	0.08	0.12	0.13
C.V.	25.35	14.78	36.61	17.54	12	20.24	11.94	15.38	13.68
Min.	0.43	0.82	1.32	0.81	0.38	0.70	0.59	0.53	0.78
Max.	0.98	1.28	3.40	1.37	0.57	1.12	0.83	0.91	1.23

\*Source: computed from secondary data



CHART - 8.2.2  
COMPARISON OF MEAN TOTAL ASSETS T/O OF FIRMS  
AND INDUSTRY

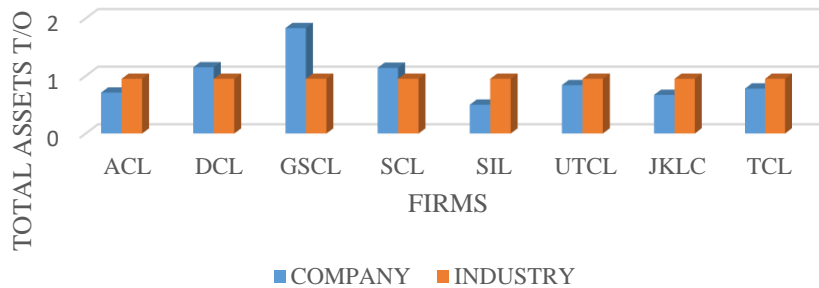


Table 8.2.2 shows that the mean total assets turnover ratio is 0.95. Gujarat Sidhee Cement Ltd. at 1.83 had the highest total assets turnover, which is almost double the industry average. Thus, it can be said that GSCL used its assets effectively to generate sales. SIL, at half of the industry average, indicates the company had not used its assets effectively to generate sales during the study period.

From the coefficient of variation scores, it can be revealed that JKLC had a highly stable and consistent total assets turnover. GSCL, on the other hand suffered the most volatile and inconsistent situation.

TABLE – 8.2.2 (a) ANOVA – TOTAL ASSETS TURNOVER

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	9.747	7	1.392	17.957	.000
Within Groups	4.187	54	.078		
Total	13.934	61			

\*Significant at 5% level

H<sub>0</sub>: There is no significant difference in the mean total assets' turnover among the sample companies during the study period.

H<sub>1</sub>: There is a significant difference in the mean total asset's turnover among the sample companies during the study period.

To test the significance of variance of total assets turnover among the sample companies under the study, the 'ANOVA' test has been applied. Table 8.2.2(a) indicates that the calculated p value 0.000 is significant at 5% level, thus the null hypothesis is rejected. Therefore, the total assets turnover varies significantly amongst the sample companies.

### 8.2.3 Fixed Assets Turnover

The fixed assets turnover ratio reveals how efficient a company is at generating sales from its existing fixed assets. It is generally used by analyst to measure operating performance. This efficiency ratio compares net sales to fixed assets. A higher ratio indicates that management is using its fixed assets more effectively. A lower ratio reveals that the management is not efficiently using its fixed assets. The formula for the fixed assets turnover is-

$$\text{Fixed Assets Turnover} = \frac{\text{Net Sales}}{\text{Average Net Fixed Assets}}$$

TABLE – 8.2.3 FIXED ASSETS TURNOVER

Yr./co	ACL	DCL	GSCL	SCL	SIL	UTCL	JKLC	TCL	IND.AV
2010	1.63	2.64	9.43	-	0.56	1.47	1.44	3.45	2.95
2011	1.44	2.29	4.71	1.55	0.71	1.62	1.06	3.92	2.16
2012	1.61	2.19	5.52	1.63	0.71	1.58	1.13	4.70	2.38

2013	1.52	1.91	5.28	1.90	0.72	1.62	1.10	4.58	2.33
2014	1.61	2.16	3.85	2.05	0.79	1.38	0.89	4.59	2.17
2015	1.52	-	4.28	2.35	0.74	1.23	0.85	5.34	2.33
2016	1.52	2.23	4.51	2.25	0.64	1.24	0.87	5.62	2.36
2017	1.76	1.47	3.92	1.94	0.83	1.18	1.07	3.79	2
Mean	1.58	2.13	5.19	1.95	0.71	1.41	1.05	4.5	2.33
S.D.	0.10	0.36	1.81	0.30	0.08	0.18	0.19	0.75	0.28
C.V.	6.33	16.9	34.87	15.38	11.27	12.77	18.09	16.67	12.02
Min.	1.44	1.47	3.85	1.55	0.56	1.18	0.85	3.45	2
Max.	1.76	2.64	9.43	2.35	0.83	1.62	1.44	5.62	2.95

\*Source: computed from secondary data

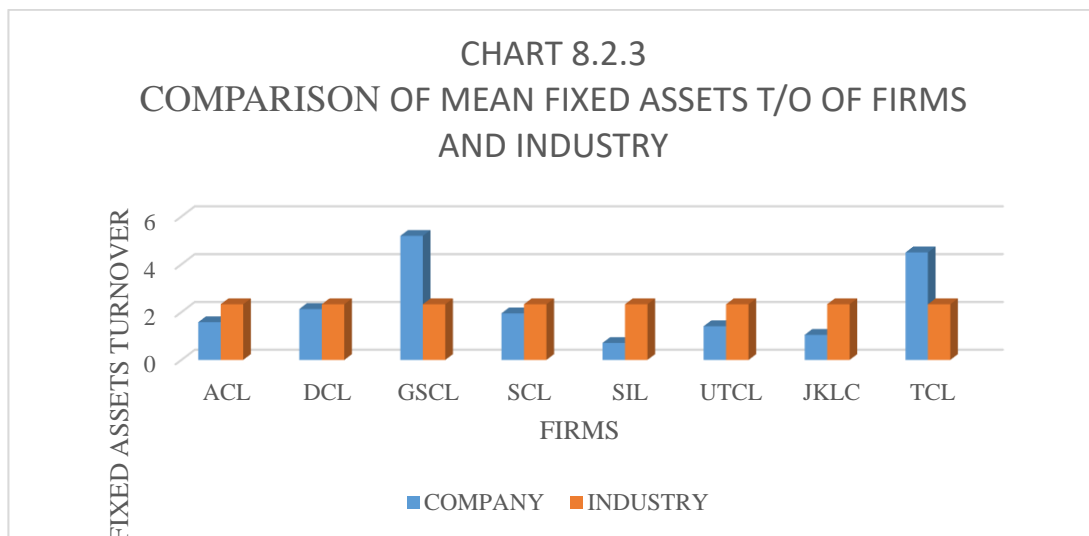


Table 8.2.3 reveals that the mean of fixed asset turnover ratio is 2.33. Gujarat Sidhee Cement Ltd. at 5.19 had the highest fixed asset turnover, which is more than double of the industry average. Thus, it can be said that GSCL had used its fixed assets effectively during the study period. SIL, on the other hand was at only 30% of the industry average, indicates the company had not effectively invested in fixed assets during the study period.

From the coefficient of variance scores, it can be seen that Ambuja Cement had a highly stable and consistent fixed assets turnover during the study period. GSCL, on the other hand, suffered the most volatile which shows high inconsistency and inefficiency in using fixed assets during the study period.

**TABLE – 8.2.3(a) ANOVA – FIXED ASSETS TURNOVER**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	149.487	7	21.355	39.900	.000
Within Groups	28.902	54	.535		
Total	178.388	61			

\*Significant at 5% level

H<sub>0</sub>: there is no significant difference in the mean fixed assets turnover among the sample companies during the study period.

H<sub>1</sub>: there is a significant difference in the mean fixed asset turnover among the sample companies during the study period.

To test the significance of variance of fixed assets turnover among the sample companies under the study, the

'ANOVA' test has been applied. Table 8.2.3(a) reveals that the calculated p value 0.000 is significant at 5% level, thus the null hypothesis is rejected. So, the fixed assets turnover varies significantly amongst the sample companies.

## IX. FINDINGS

### Solvency

- JK Lakshmi Cement Ltd. at 1.66 had the highest debt equity ratio, which is more than double the industry average. Hence, it can be said that JKLC is the high levered company and involve the practice of using more borrowed fund than owned funds. SCL, at least the industry average, reveals that the company depends more on owner's fund among the sample companies studied.
- Coefficient of variation scores indicates that UTCL had a highly stable and perfect

### Efficiency

- Sanghi Industries Ltd. at 81.07 had the highest debtor's turnover ratio, which is more than double the industry average. Thus, it can be revealed that SIL, is more efficient in managing receivables. On the opposite side, TCL at 85% of the industry average, signifies an unsatisfactory debtor's turnover ratio, poor credit policies and collection prices among the sample companies studied.
- Coefficient of variation scores indicates that JKLC had highly stable collection period. SIL, on the other hand, suffered the most volatile situation and reveals unproductive management of debtors, during the study period.
- Gujarat Sidhee Cement Ltd. at 1.83 had the highest total assets turnover which is nearly double of the industry average. It can be concluded that GSCL uses its assets effectively to generate sales. On the other hand, SIL was at only 50% of the industry average shows that it had not

consistency in debt equity ratio. SCL, on the other side suffered the highest inconsistency in capital structure during the study period.

- Saurashtra Cement Ltd. at 0.68 had the highest debt to asset ratio, which is about 40% of the industry average. This indicates that company may be putting itself in the risk of defaulting on its loans if interest rates were to raise suddenly. On the other hand, ACL at half of the industry average indicates that greater portion of company's assets is funded by equity.
- From the coefficient of variation scores, it can be said that JKLC had a highly stable consistency in debt to asset ratio. On the other hand, SCL suffered the most volatile ratio during the study periodz

effectively used its assets to generate sales during the study period.

- From the coefficient of variation scores, it can be said that JKLC had a highly stable and consistent total assets turnover and on the other hand, GSCL suffered the most inconsistent situation.
- Gujarat Sidhee Cement Ltd. at 5.19 had the highest fixed asset turnover which is more than the double of the industry average. Hence, it can be said that GSCL had used its fixed assets effectively during the study period. SIL, on the other hand was only at 30% of the industry average shows that the company had not effectively invested in fixed assets during the study period.
- From the coefficient of variation scores, it can be seen that Ambuja Cement Ltd. had a highly stable and consistent fixed assets turnover during the study period. GSCL, on the other hand, suffered the most volatile position and reveals that the company used its fixed assets inefficiently during the study period.

## X. SUGGESTIONS

From solvency ratios it can be seen that debt equity ratio of JK Lakshmi Cement is highest which is not favorable, a company should try to use less borrowed fund and more own funds. Moreover, the debt to asset ratio of Saurashtra Cement Ltd. is the highest so the company should avoid to finance its assets not from debt, to save itself from risk of hike in interest rates of loans.

Efficiency ratios included in the study are debtor's turnover, total assets turnover ratio and total fixed assets

ratio. Debtor's turnover ratio of Tata Chemicals Ltd. is least among the sample companies so it is suggested, a company should tackle with poor credit policy and collection prices. Sanghi Industries Ltd. has unfavorable total assets and total fixed assets turnover so a company should avoid internal problems and use its assets efficiently.

## XI. CONCLUSION

To meet the objectives of the study data collected from annual reports of the sample companies and analyzed using Excel & SPSS to make them more meaningful and

understandable. SCL and ACL have good solvency position as SCL depends more on owners fund than borrowed fund and greater portion of ACL's assets is funded by equity. Moreover, efficiency position of SIL and GSCL is better than other sample companies as SIL is more efficient in managing receivables and GSCL uses its total assets and fixed assets effectively to generate sales. The study concludes that solvency and efficiency position of sample companies were uneven. Some companies had satisfactory results whereas others need some necessary measures in some fields as suggested above. As the cement industry is a flourishing industry and liberalized policy of government will help this sector to grow further.

Since India has large manufacturing expertise and know-how, Major players with strong product range and essential built-up infrastructure will make the most of this upcoming opportunity. Financial performance analysis would facilitate the industry to move on the right direction. It is hoped that the present study would be an eye opener to the industry and other.

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