

# Profitability Analysis of Cement Companies: A Comparative Study

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## Abstract –

**Purpose –** The purpose of this research evaluates the profitability of cement industry and compares the profitability of cement companies.

**Design/ methodology/approach –** This research study check and compare the profitability of Indian cement industry. We framed the exploratory and descriptive research design to answer the research questions. This study draws a sample of three cement companies as basis on market capitalization. These companies are UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd. This research study has cover five years data from 2013-14 to 2017-18.

**Findings –** Through analysis of data and results it is found that sampled cement companies perform best on selected profitability parameter. This research compares the profitability performance on different parameter. All sampled cement companies perform the same performance on profitability parameter during the study period. There is no significant difference between profitability of sampled cement companies.

**Originality/value –** This research has compared the profitability of cement companies on four parameter of profitability. Through analysis of related literature, we found there have few countable researches which compared the profitability performance of cement companies through statistical tools.

**Keywords –** Profitability, Cement, Ratio.

**Paper type-** Research Paper

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## INTRODUCTION

The Indian cement industry is the second largest market after China. It had a total cement production capacity of about 425 million tonnes (MT) as of September 2017. Cement is a cyclical commodity with a high correlation with GDP<sup>15</sup>. India is second largest in cement consumption.

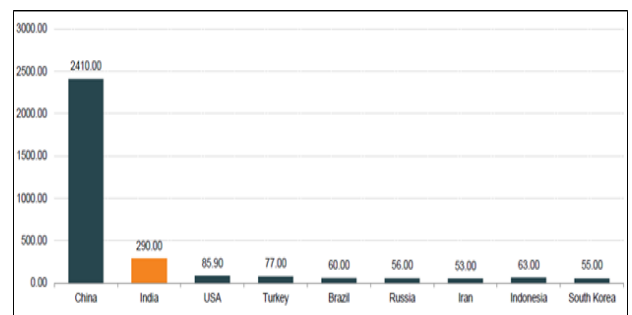


Figure 1: Top Cement Producers in 2016 (Estimate)

Source: Cement (Report), India Brand Equity Foundation, 2018

Indian cement industry comprise of large number of companies. Indian cement industry stood up on ninety companies which spread all over of India. The industry is dominated by few large players.

<sup>15</sup> Cement Sector Analysis Report. It can accessed at <https://www.equitymaster.com/research-it/sector-info/cement/Cement-Sector-Analysis-Report.asp#pr>

Top 10 companies by market capitalization contribute the production of cement more than 50% of total.

### PROFITABILITY SCENARIO OF CEMENT INDUSTRY

India's 460-million tonne cement industry, the world's second-largest, is likely to continue facing tough times in 2018-19 too. Hit by a gross mismatch in supply and demand for nearly a decade now, leading to poor capacity utilisation of less than 70 per cent, the sector's growth has remained stunted with a lower digit growth trajectory<sup>16</sup>.

Figure 2 shows top 10 cement companies which contribute more than 50% of total production of cement in India. In this research, we only include the top three cement companies for the research. These companies are UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd.

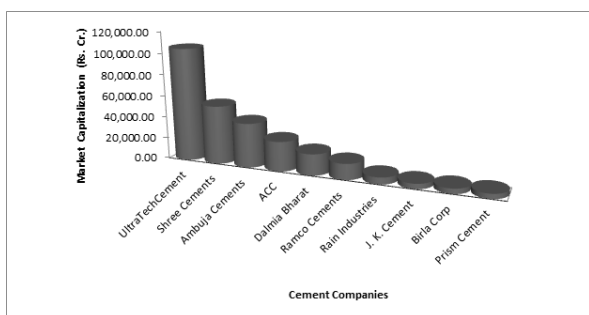


Figure 2: Top 10 cement companies by market capitalization

Source: data compile from money control

### REVIEW OF RELATED LITERATURE

Banerjee (2015) conducted a research on profitability trend in cement industry in India. She measures the profitability of cement companies through gross profits as percentage of gross value added. She used the time series data of cement prices for the analysis.

Sumathi and Jothi (2016) explore profitability scenario of the cement industry and compare the financial performance of UtraTech and Orissa Cement. They explore the relationship between firm efficiency and working operation of a cement company. They found that short term solvency of UtraTech and Orissa Cement is not satisfactory and it matter of concern for the both firms. The company should work toward improve the solvency of company.

<sup>16</sup> Article published in Newspaper Business Standard on January 3, 2018 and same can be accessed [https://www.business-standard.com/article/companies/no-cheer-for-cement-makers-in-fy19-rising-costs-to-hit-profitability-icra-118010300876\\_1.html](https://www.business-standard.com/article/companies/no-cheer-for-cement-makers-in-fy19-rising-costs-to-hit-profitability-icra-118010300876_1.html)

Saranya (2017) compared the financial performance of cement companies through liquidity and profitability ratios. Saranya draws a sample of three cement companies UltraTech, Shree Cement and Ambuja Cement. This research study cover the five year data from 2012-2016. Study reveals that Ambuja cement liquidity position is better than its rivals. This research indicates Shree cement earn more return on capital employed compare to UltraTech and Ambuja Cement.

### OBJECTIVE OF STUDY

After the extensive review of literature and find the gape in existing literature, researchers framed the following objective:

1. To analysis the profitability of cement industry during the period of study.
2. To compare the profitability of sampled cement companies during the period of study.

### HYPOTHESES OF STUDY

#### Null Hypotheses (H<sub>0</sub>)

H<sub>1</sub>: There is no significance difference between PBIT margins of all sampled cement companies during the period of study.

H<sub>2</sub>: There is no significance difference between net profit margins of all sampled cement companies during the period of study.

H<sub>3</sub>: There is no significance difference between return on capital employed of all sampled cement companies during the period of study.

H<sub>4</sub>: There is no significance difference between return on assets of all sampled cement companies during the period of study.

### METHODOLOGY

This research study check and compare the profitability of Indian cement industry. We framed the exploratory and descriptive research design to answer the research questions. Indian cement industry is very large in number of companies; total number of cement companies in India is ninety which comprises of state-run, public and private players<sup>17</sup>. This study draws a sample of three cement companies as basis on market capitalization. These companies are UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd. This research study has cover five years data from 2013-14 to 2017-18. Profit before

<sup>17</sup> Cement information system, Department of Industrial Policy & Promotion, Government of India, Ministry of Commerce and Industry. <http://eaindustry.nic.in/cement/report2.asp>

Interest and Tax (PBIT) Margin, net profit margin, return on capital employed and return on assets ratios is used to measure the profitability of cement industry. Data related to ratios is collected and compiled from annual reports of relevant cement companies, high impact factor journals and authentic websites. Normality of data set is checked by mostly preferred *Shapiro-Wilk test* with the help of SPSS and the null-hypothesis of this test is that the population is normally distributed (Wikipedia). *Shapiro-Wilk test* confirms the normality of data set. To compare the profitability of sampled cement companies, parametric *one-way anova* (ANOVA) statistic is used through SPSS 16.0 version.

**RESULTS AND DISCUSSION**

Annexure 1 shows the data related to ratios of profitability for UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd. from from 2013-14 to 2017-18. The profitability of companies is measure by PBIT margin, net profit margin, return on capital employed and return on assets ratios. Annexure 2 shows the results of tests of normality for the data set related to UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd. We test the null hypothesis population is normally distributed and p-value is compared with level of significance ( $\alpha=.05$ ). It inferred from the annexure 2 that p-value is more than level of significance ( $\alpha=.05$ ) for all variables and it assumed that sample data is normally distributed. It is most important properties of parametric test that population should be normally distributed. Therefore, we can use one-way anova test for comparing three samples of cement companies on different profitability parameters.

***H<sub>1</sub>: There is no significance difference between PBIT margins of all sampled cement companies during the period of study.***

Table 1 shows the sample statistic for the PBIT margin of the cement companies. Table 2 shows one-way anova test results. We test the null hypothesis *H<sub>1</sub>* with help of one-way anova. Table 2 show the F-statistic and p-value are 0.351 and 0.711 respectively. We compare the p-value with level of significance ( $\alpha=0.05$ ) which is more than  $\alpha=0.05$ , therefore, there have significant statistical evidence to accept null hypothesis *H<sub>1</sub>* and reject alternate. It is inferred from table 2 that PBIT margin of all three cement companies is statistically same during the study period. All three sampled cement companies performing the same on this profitability parameter.

**Table 1: Sample statistic for PBIT Margin of cement companies**

PBIT Margin (%)	N	Mean	Std. Deviation	Std. Error
UltraTech Cement Ltd.	5	16.0720	1.29396	0.57867
Shree Cement Ltd.	5	17.5960	5.36509	2.39934
Ambuja Cements Ltd.	5	16.0100	2.01111	0.89939
Total	15	16.5593	3.23024	0.83404

**Table 2: ANOVA results for PBIT margin**

ANOVA					
PBIT Margin (%)	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	008.070	2	04.035	0.351	0.711
Within Groups	138.012	12	11.501		
Total	146.082	14			

$\alpha=.05$

***H<sub>2</sub>: There is no significance difference between net profit margins of all sampled cement companies during the period of study.***

Table 3 shows the sample statistic for the Net margin of the cement companies. Table 4 shows one-way anova test results. We test the null hypothesis *H<sub>2</sub>* with help of one-way anova. Table 4 shows the F-statistic and p-value which are 1.957 and 0.184 respectively. We compare the p-value with level of significance ( $\alpha=0.05$ ) which is more than  $\alpha=0.05$ , therefore, there have significant statistical evidence to accept null hypothesis *H<sub>2</sub>* and reject alternate. It is inferred from table 4 that net profit margins of all three cement companies is statistically same during the study period. All three sampled cement companies performing the same on this profitability parameter.

**Table 3: Sample statistic for Net Profit Margin of cement companies**

Net Profit Margin (%)	N	Mean	Std. Deviation	Std. Error
UltraTech Cement Ltd.	5	9.8060	1.36172	.60898
Shree Cement Ltd.	5	14.0700	5.07264	2.26855
Ambuja Cements Ltd.	5	11.9480	2.69272	1.20422
Total	15	11.9413	3.63319	.93809

**Table 4: ANOVA results for Net Profit margin**

ANOVA					
Net Profit Margin (%)	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	45.455	2	22.727	1.957	.184
Within Groups	139.347	12	11.612		
Total	184.801	14			

**H<sub>3</sub>: There is no significance difference between return on capital employed of all sampled cement companies during the period of study.**

Table 5 shows the sample statistic for return on capital employed of the cement companies. Table 6 shows one-way anova test results. We test the null hypothesis *H<sub>3</sub>* with help of one-way anova. Table 6 shows the F-statistic and p-value which are 2.292 and 0.144 respectively. We compare the p-value with level of significance ( $\alpha=0.05$ ) which is more than  $\alpha=0.05$ , therefore, there have significant statistical evidence to accept null hypothesis *H<sub>3</sub>* and reject alternate. It is inferred from table 6 that return on capital employed of all three cement companies is statistically same during the study period. All three sampled cement companies performing the same on this profitability parameter.

**Table 5: Sample statistic for return on capital employed of cement companies**

Return on Capital Employed (%)	N	Mean	Std. Deviation	Std. Error
UltraTech Cement Ltd.	5	7.7740	1.55656	.69611
Shree Cement Ltd.	5	11.9440	3.26860	1.46176
Ambuja Cements Ltd.	5	8.9680	4.13245	1.84809
Total	15	9.5620	3.45226	.89137

**Table 6: ANOVA results for Net Profit margin**

ANOVA					
Return on Capital Employed (%)	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	46.119	02	23.059	2.292	.144
Within Groups	120.735	12	10.061		
Total	166.853	14			

**H<sub>4</sub>: There is no significance difference between return on assets of all sampled cement companies during the period of study.**

Table 7 shows the sample statistic for return on assets of the cement companies. Table 8 shows one-way anova test results. We test the null hypothesis *H<sub>4</sub>* with help of one-way anova. Table 8 shows the F-statistic and p-value which are 3.215 and 0.076 respectively. We compare the p-value with level of significance ( $\alpha=0.05$ ) which is more than  $\alpha=0.05$ , therefore, there have significant statistical evidence to accept null hypothesis *H<sub>4</sub>* and reject alternate. It is inferred from analysis of data that return on capital employed of all three cement companies is statistically same during the study period. All three sampled cement companies performing the same on this profitability parameter.

**Table 7: Sample statistic for the return on assets of cement companies**

Return on Assets (%)	N	Mean	Std. Deviation	Std. Error
UltraTech Cement Ltd.	5	5.9760	1.18536	0.53011
Shree Cement Ltd.	5	9.8540	2.79439	1.24969
Ambuja Cements Ltd.	5	7.1000	3.05953	1.36827
Total	15	7.6433	2.85493	0.73714

**Table 8: ANOVA results for return on assets**

ANOVA					
Return on Assets (%)	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39.811	2	19.906	3.215	.076
Within Groups	74.298	12	6.191		
Total	114.109	14			

**CONCLUSION**

Indian cement industry is facing the tough time from demand side and struggling to competitive in world mainly from China. But it is cheer movement for cement sector that India’s real estate sector will touch \$180 billion by 2020. In this study, we have compared the profitability performance of top three cement companies on different profitability parameters. Profitability performance of all three companies is same statically and it confirmed from analysis of data. It further concluded that Shree Ultra cement performing better to its rivals in term of different profitability parameters. Further, it is concluded from results of data that Ambuja cement is performing better than UltraTech cement on all profitability performance parameters.

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**Annexure 1:** profitability ratios for the UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd.

PBIT Margin (%)			
Financial Year	Ultra Tech Cement Ltd.	Shree Cement Ltd.	Ambuja Cements Ltd.
2013-14	15.25	17.40	16.96
2014-15	14.97	08.62	18.51
2015-16	16.07	22.70	13.35
2016-17	18.25	19.31	14.71
2017-18	15.82	19.95	16.52

Net Profit Margin (%)			
Financial Year	Ultra Tech Cement Ltd.	Shree Cement Ltd.	Ambuja Cements Ltd.
2013-14	10.57	13.37	14.13
2014-15	08.78	06.60	14.99
2015-16	09.99	20.73	08.53
2016-17	10.99	15.58	10.13
2017-18	07.49	14.07	11.96

Return on Capital Employed (%)			
Financial Year	Ultra Tech Cement Ltd.	Shree Cement Ltd.	Ambuja Cements Ltd.
2013-14	08.92	13.50	12.79
2014-15	07.62	06.50	13.91
2015-16	08.78	13.77	07.38
2016-17	08.41	14.59	04.67
2017-18	05.14	11.36	06.09

Return on Assets (%)			
Financial Year	Ultra Tech Cement Ltd.	Shree Cement Ltd.	Ambuja Cements Ltd.
2013-14	07.20	10.74	09.98
2014-15	05.72	05.33	10.76
2015-16	06.18	12.07	05.70
2016-17	06.68	11.99	03.99
2017-18	04.10	09.14	05.07

**Annexure 2:** Tests of normality results for the data set related to UltraTech cement Ltd., Shree cement Ltd. and Ambuja cement Ltd.

	Cement Companies	Shapiro-Wilk		
		Statistic	df	Sig.
PBIT Margin (%)	UltraTech Cement Ltd.	.844	5	.177
	Shree Cement Ltd.	.864	5	.243
	Ambuja Cements Ltd.	.975	5	.909
Net Profit Margin (%)	UltraTech Cement Ltd.	.820	5	.117
	Shree Cement Ltd.	.957	5	.787
	Ambuja Cements Ltd.	.954	5	.763
Return on Capital Employed (%)	UltraTech Cement Ltd.	.805	5	.088
	Shree Cement Ltd.	.831	5	.141
	Ambuja Cements Ltd.	.881	5	.315
Return on Assets (%)	UltraTech Cement Ltd.	.935	5	.629
	Shree Cement Ltd.	.855	5	.211
	Ambuja Cements Ltd.	.863	5	.239

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