



ANALYSING THE EARNING LANDSCAPE OF SELECTED INDIAN CEMENT COMPANIES BY UTILISING POPULAR METRICS

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ABSTRACT

The main objective of these study to analysing the earning landscape of selected Indian cement companies by utilising profitability metrics. For the period 2017-2018 to 2021-2022. The secondary data is used for the research. It has been collected from selected five cement companies' annual reports. Profitability analysis is a process of evaluating a company's financial performance by assessing its ability to generate profits. The used tools & techniques: profitability ratios analysis, statistical analysis and analysis of variance (ANOVA). It is concluded that profitability metrics, Shree Cements Ltd. appears to be the best-performing company among the five, with Ultratech Cement Ltd. and Ambuja Cements Ltd. following closely behind. ACC Ltd. and The India Cements Ltd. have lower performance than the other three companies. It is also concluded that all the null hypotheses have not been accepted meaning thereby all alternative hypotheses are accepted. There are significant differences between the selected all profitability ratios (Based on sales and related to overall return on assets / investments ratio) of selected five cement companies of India.

KEY WORDS: Profitability analysis, Sales ratio, Return on assets / investments ratio and Analysis of variance (ANOVA).

JEL Classification: M410

1. INTRODUCTION

Company is sole purposes of it is to make profits. Basically, to earn more than you spend. Profitability analysis to measure and evaluate a company's ability to generate revenue relative to, assets, operating costs, and shareholders' equity. The primary objective of profitability analysis is to provide insights into a company's financial health and to identify areas where it can improve its performance. It involves analysing various financial metrics and ratios to determine how effectively a company is managing its resources to generate profits. This analysis can be done using a variety of financial ratios, such as the profit margin, return on investment (ROI), return on net worth (RONW) and return on assets (ROA). India is the world's second-largest producer of cement. The annual production of cement in India January 2021 was 232.57 million tons, indicating that India is a significant producer of cement globally. The consumption volume of cement in India is estimated to be 379 million tons for the year 2022, There is a high demand for cement in the country. The export market for cement is growing: India exported US\$ 82.98 million worth of cement in the year 2021-22.

2. REVIEW OF LITERATURE

Owino, E. (2010)

Has study the relationship between liquidity and leverage of companies quoted at the NSE. The study considered thirty

companies out of forty-seven quoted firms at the NSE between 2006 to 2010. Secondary data was collected from the financial statements of individual companies and analysed using multivariate regression analysis. The T statistics and F significance ANOVA were used to test the hypothesis. The findings revealed that there is negative insignificant relationship between liquidity and leverage. Firms adopt the best market practices by putting in place good working capital management practices and short cash conversion cycles. The study is in agreement with other studies done in developing countries that portray negative relationship between liquidity and leverage.

Nishanthini, A. & Nimalathan, B. (2013)

Determinants of profitability: A case study of listed manufacturing companies in Sri Lanka. data were collected from secondary sources mainly from financial report of the selected companies, which were published by Colombo stock exchange in Sri Lanka. The results revealed that the profitability of manufacturing companies is less satisfactory. On the basis of result and analysis, selected manufacturing companies has different ranking based on each profitability indicators. Based on the gross profit ratio, operating profit ratio, net profit ratio, Royal Ceramic PLC is at first whereas Chevron Lubricants PLC is at first based on ROI, ROCE.



Outcome of the study is beneficial to academicians, policy makers, practitioners and so on.

Jamuna, L. (2017)

Undertook a study to analyse relationship between liquidity and profitability of select cement companies in India – an empirical study. during the study period of ten years from 2004-05 to 2013-14. The study found that liquidity performance of Ambuja cements was better than ACC Ltd. in terms of current ratio. But both the companies managed their collection and payments very efficiently. These companies collected their dues from customers as quick as possible and they delayed the payments to their creditors as long as possible. It was also found that average payments period, inventory conversion period and cash conversion period had significant relationship with profitability of the company, of which cash conversion period had negative relationship. In case of Ambuja cements no liquidity ratios had significant relationship with profitability

Parmar, H. & Shukla, D. (2021)

Have study comparative financial analysis of cement manufacturing company and relationship between inventory management and profitability ratio. In such a scenario inventory management is one of the important tools to improve the company performance. ratio analysis of financial statements is performed to know the profitability performance of the Indian cement industry by using descriptive statistics. also, this paper analysed and discusses the impact of inventory management practices on profitability performance by correlation analysis. The required data has been collected from the annual reports of the respective cement companies for the period of 2011 to 2020. The result helps the investor in the investment decision. Correlation analysis was used to determine the nature and magnitude of the relationship between inventory turnover ratio and gross profit margin. The results indicate that there exists a positive correlation between the variables.

Gjoni, A. & et al. (2022)

Through the analytical study on determinants of financial performance in Albanian economic entities, case of construction industry in Albania. The financial ratios used to

measure the financial performance of the construction sector are the debt ratio, the liquidity ratio and the profitability ratio from the period 2018-2020 for 100 construction companies in Albania. Return on assets (ROA) is taken as the predictor variable and three financial ratios are taken as the predictive variables. This research reveals that the financial ratios have positive correlation with the dependent variable whereas the leverage ratio has negative correlation. To overcome the limitations of the forthcoming studies, the considered number of years need to be increased and other models such as market value added, capital asset pricing model and economic value added can be used to be tested for research to analyses other factors that may affect financial performance.

2.1. Research Gap

The research gap in the proposed topic “Analysing the earning landscape of selected Indian cement companies by utilising popular metrics.” Such as profitability metrics. While there are several studies on the financial performance of cement companies in India, there is a dearth of research that specifically examines the profitability aspect of these companies. It was also found that there is possibly lacuna of study covering the pre-COVID and post-COVID contextual research for this topic. Also, the other studies covered different set of companies, while we have taken the top five companies in the cement industry. In addition, all the profitability metrics have been utilized which most other studies lack to cover. The combination of all these aspects makes high argument for reckoning to be a fine research gap.

3. RESEARCH METHODOLOGY

3.1. Objectives of the Study

The study has the following objectives:

- ❖ To analysing the earning landscape of selected five Indian cement companies by profitability metrics.
- ❖ To study various ways to measure the profitability based on sales of selected five cement companies of India.
- ❖ To study various ways to measure the profitability related to overall return on assets / investments of selected five cement companies of India.

3.2. Hypothesis of the Research Study

Table No.3.1. List of Hypothesis will be Taken Under Study

Null Hypothesis (H ₀)	Alternative Hypothesis (H ₁)
There is no significant difference between the profitability ratios based on sales of selected five cement companies of India.	There is significant difference between the profitability ratios based on sales of selected five cement companies of India.
There is no significant difference between the profitability ratios related to overall return on assets / investments of selected five cement companies of India.	There is significant difference between the profitability ratios related to overall return on assets/ investments of selected five cement companies of India.



3.3. Sample Design

The companies hereunder are selected on randomly for the period 2017-2018 to 2021-2022.

Table No.3.2. List of Selected Five Cement Companies		
No.	Company Name	Market Cap (₹ Crore)
1	Ultratech Cement Ltd.	204,102.92
2	Shree Cements Ltd.	90,974.54
3	Ambuja Cements Ltd.	70,162.77
4	ACC Ltd.	32,647.75
5	The India Cements Ltd.	5,815.22

Source: 14 March 2023 BSE.

3.4. Data Collection

Secondary sources of data will be utilized for this proposed research study secondary data have been collected from selected five cement companies' annual reports. Ratio data is taken from different sources like screener, moneycontrol etc.

3.5. Period of Study

Five years of financial statements will be analysed for cement companies taken under study. Financial ratios from 2017-2018 to 2021-2022 will be studied.

3.6. Tools & Techniques

This study has been done by analysing and interpreting data in following ways.

- ❖ Profitability ratios analysis.
- ❖ Statistical analysis. (Average, Std. deviation, Minimum and Maximum)
- ❖ Analysis of variance (ANOVA)

Table No.3.3. Profitability Ratios Analysis

Profitability Ratios Based on Sales		
Name of Ratio	Meaning	Calculation Formula
EBITDA Margin Ratio	It is a measure measures how much in earnings a company is generating before interest, taxes, depreciation, and amortization, as a percentage of revenue.	$EBITDA \text{ Margin Ratio} = \frac{EBITDA}{\text{Net Revenue from Operation}} \times 100$
EBITDA = Earnings Before Interest, Taxes, Depreciation, and Amortization		
EBIT Margin Ratio	It is a financial ratio that measures the profitability of a company by dividing its earnings before interest and taxes by its revenue. it is also measuring the profitability of a company's core business activities.	$EBIT \text{ Margin Ratio} = \frac{EBIT}{\text{Net Revenue from Operation}} \times 100$
EBIT = Earnings Before Interest and Taxes		
Net Profit Margin Ratio	The net profit margin ratio shows the percentage of sales revenue a company keeps after covering all of its costs including interest and taxes.	$\text{Net Profit Margin Ratio} = \frac{\text{Net Profit (PAT)}}{\text{Net Revenue from Operation}} \times 100$
PAT = Profit After Tax		
Profitability Ratios Related to Overall Return on Assets / Investments		
Return on Capital Employed (ROCE)	Return on capital employed is designed to show how efficiently a company makes use of its available all capital by looking at the net profit generated.	$\text{Return on Capital Employed} = \frac{EBIT}{\text{Capital Employed}} \times 100$
Return on Net Worth (RONW)	This ratio shows how much profit a company generates with the invested money of equity shareholders.	$\text{Return on Net Worth} = \frac{\text{Net Profit}}{\text{Total Equity}} \times 100$
Return on Assets (ROA)	Return on assets shows how much profit a company is able to generate from its available assets.	$\text{Return on Assets} = \frac{\text{Net Profit}}{\text{Total Assets}} \times 100$



3.7. Limitations of the Study

- (1) The present study will be largely based on secondary data which would be taken from official websites of respective organization, annual reports of selected five cement companies in India. and various published data books, journals, circulations, websites, reports etc. as such finding depends entirely on the accuracy of such data.
- (2) The present study will be largely based on profitability ratios analysis which has its inherent limitations. The

different views have been applied in the calculation of different ratios.

- (3) There is proper care taken to overcome the limitations of the statistical tools used in the present study but still limitations of the tools applied in the present study.
- (4) The present study has been undertaken comprising only five selected companies. The financial data taken has been taken for a duration of five years. also, out of the wide range of financial ratios, this study has focused on selected 6 profitability ratios.

4. DATA ANALYSIS AND INTERPRETATION

4.1. Profitability Ratios Based on Sales

4.1.1. EBITDA Margin Ratio = EBITDA / Net Revenue from Operation × 100

Table No.4.1. EBITDA Margin Ratio (%)

Company Name	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018	Average	S.D	Min	Max
Ultratech Cement Ltd.	22.79	27.21	23.07	19.58	21.75	22.88	2.78	19.58	27.21
The India Cements Ltd.	10.13	18.69	12.11	11.89	13.76	13.32	3.27	10.13	18.69
Ambuja Cements Ltd.*	25.01	26.54	22.07	19.95	21.98	23.11	2.63	19.95	26.54
ACC Ltd.*	19.84	18.54	17.37	14.74	15.36	17.17	2.13	14.74	19.84
Shree Cements Ltd.	29.25	35.05	33.14	24.72	29.10	30.25	4.01	24.72	35.05

* = Ambuja Cements Ltd*and ACC Ltd* follows the calendar year.

Table No.4.1. Shows the EBITDA margin ratio of 5 cement companies in India for the years 2017-2018 to -2021-2022. EBITDA margin ratio shows the mixed trends in all selected cement companies. Under this study the minimum EBITDA margin ratio is 10.13% in the year 2021-2022 for The India Cements Ltd. The maximum EBITDA margin ratio is 35.05% in the year 2020-2021 for Shree Cements Ltd. Looking at the 5 years of EBITDA margin ratios figures, we can see that the average number for all companies ranges between 13 – 30%. Shree Cements Ltd and Ambuja Cements Ltd. have first and second highest average EBITDA margin ratio of 30.25% and

23.11%. The India Cements Ltd. and ACC Ltd. have first and second lowest average EBITDA margin ratio of 13.32% and 17.17%. Shree Cements Ltd. has the highest standard deviation (S.D) of 4.01%, indicating that its EBITDA margin ratio has the highest variability over the past five years. This could suggest that the company's financial performance is more volatile or subject to external factors that impact its earnings. On the other hand, ACC Ltd. has the lowest standard deviation of 2.13%, suggesting that its EBITDA margin ratio has been more consistent over the past five years. This could indicate a more stable financial performance.

Table No.4.2. Hypothesis Testing of EBITDA Margin Ratio

Hypothesis					
Null Hypothesis (H ₀)	There is no significant difference between the EBITDA margin ratio of selected five cement companies of India.				
Alternative Hypothesis (H ₁)	There is significant difference between the EBITDA margin ratio of selected five cement companies of India.				
ANOVA					
EBITDA Margin Ratio (%)					
Source of Variation	Sum of Squares	DF	Mean Square	F	P-value
Between Groups	833.51	4.00	208.38	22.66	0.00
Within Groups	183.92	20.00	9.20		
Total	1017.42	24.00			



Results Discussion	
Pc > Pt H ₀ = Accepted and H ₁ = Rejected	Pc < Pt H ₀ = Rejected and H ₁ = Accepted
[Calculate P-value = 0.00 and P-value of table (α) = 0.05] = Pc < Pt = 0.00 < 0.05	
Null Hypothesis (H ₀)	Rejected
Alternative Hypothesis (H ₁)	Accepted
Significant difference between the EBITDA margin ratio of selected five cement companies of India.	

4.1.2. EBIT Margin Ratio = EBIT / Net Revenue from Operation × 100

Table No.4.3. EBIT Margin Ratio (%)

Company Name	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018	Average	S.D	Min	Max
Ultratech Cement Ltd.	17.94	21.57	17.03	13.95	15.83	17.26	2.83	13.95	21.57
The India Cements Ltd.	5.47	13.24	7.23	7.42	8.82	8.44	2.94	5.47	13.24
Ambuja Cements Ltd.*	21.06	21.96	17.41	15.13	16.50	18.41	2.96	15.13	21.96
ACC Ltd.*	16.14	13.93	13.52	10.69	10.54	12.96	2.37	10.54	16.14
Shree Cements Ltd.	22.00	25.99	18.87	12.85	19.95	19.93	4.80	12.85	25.99

* = Ambuja Cements Ltd*and ACC Ltd* follows the calendar year.

From the table no.4.3. we can see that all companies have a fluctuating trend in EBIT margin ratio. Under this study the minimum EBIT margin ratio is 5.47% in the year 2021-2022 for The India Cements Ltd. The maximum EBIT margin ratio is 25.99% in the year 2020-2021 for Shree Cements Ltd. Looking at the 5 years of EBIT margin ratios figures, we can see that the average number for all companies ranges between 8 – 20%. Shree Cements Ltd and Ambuja Cements Ltd. have first and second highest average EBIT margin ratio of 19.93%

and 18.41%. The India Cements Ltd. and ACC Ltd. have 1st and 2nd lowest average EBIT margin ratio of 8.44% and 12.96%. Shree Cements Ltd. has the highest standard deviation of 4.80%, indicating that its EBIT margin ratio has the highest variability over the past five years. On the other hand, ACC Ltd. has the lowest standard deviation of 2.37%, suggesting that its EBIT margin ratio has been more consistent over the past five years.

Table No.4.4. Hypothesis Testing of EBIT Margin Ratio

Hypothesis					
Null Hypothesis (H ₀)	There is no significant difference between the EBIT margin ratio of selected five cement companies of India.				
Alternative Hypothesis (H ₁)	There is significant difference between the EBIT margin ratio of selected five cement companies of India.				
ANOVA					
EBIT Margin Ratio (%)					
Source of Variation	Sum of Squares	DF	Mean Square	F	P-value
Between Groups	437.59	4.00	109.40	10.12	0.00
Within Groups	216.27	20.00	10.81		
Total	653.85	24.00			
Results Discussion					
Pc > Pt H ₀ = Accepted and H ₁ = Rejected			Pc < Pt H ₀ = Rejected and H ₁ = Accepted		
[Calculate P-value = 0.00 and P-value of table (α) = 0.05] = Pc < Pt = 0.00 < 0.05					



Null Hypothesis (H ₀)	Rejected
Alternative Hypothesis (H ₁)	Accepted
Significant difference between the EBIT margin ratio of selected five cement companies of India.	

4.1.3. Net Profit Margin Ratio = Net Profit (PAT) / Net Revenue from Operation × 100

Table No.4.5. Net Profit Margin Ratio (%)

Company Name	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018	Average	S.D	Min	Max
Ultratech Cement Ltd.	13.94	12.36	13.42	6.88	7.49	10.82	3.37	6.88	13.94
The India Cements Ltd.	0.82	5.00	-0.70	1.23	1.94	1.66	2.10	-0.70	5.00
Ambuja Cements Ltd.*	14.89	15.74	13.10	13.09	11.94	13.75	1.53	11.94	15.74
ACC Ltd.*	11.27	10.26	8.67	10.17	6.89	9.45	1.71	6.89	11.27
Shree Cements Ltd.	16.61	18.36	13.19	8.11	14.07	14.07	3.91	8.11	18.36

* = Ambuja Cements Ltd*and ACC Ltd* follows the calendar year.

The table no.4.5. shows the net profit margin ratio, for five companies in the cement industry over the past five years. Net profit margin ratio shows the mixed trends in all selected cement companies. Under this study the minimum net profit margin ratio is -0.70% in the year 2019-2020 for The India Cements Ltd. The maximum net profit margin ratio is 18.36% in the year 2020-2021 for Shree Cements Ltd. Looking at the 5 years of net profit margin ratios figures, we can see that the average number for all companies ranges between 1 – 14%. Shree Cements Ltd and Ambuja Cements Ltd. have 1st and 2nd

highest average net profit margin ratio of 14.07% and 13.75%. The India Cements Ltd. and ACC Ltd. have 1st and 2nd lowest average net profit margin ratio of 1.66% and 9.45%. The standard deviation values in the table provide an insight into the level of volatility or stability in the net profit margin ratio of the five companies over the past five years. Overall, a high standard deviation indicates higher variability and potential risks, while a lower standard deviation indicates a more stable performance.

Table No.4.6. Hypothesis Testing of Net Profit Margin Ratio

Hypothesis					
Null Hypothesis (H ₀)	There is no significant difference between the net profit margin ratio of selected five cement companies of India.				
Alternative Hypothesis (H ₁)	There is significant difference between the net profit margin ratio of selected five cement companies of India.				
ANOVA					
Net Profit Margin Ratio (%)					
Source of Variation	Sum of Squares	DF	Mean Square	F	P-value
Between Groups	505.86	4.00	126.46	17.40	0.00
Within Groups	145.37	20.00	7.27		
Total	651.23	24.00			
Results Discussion					
P _c > P _t H ₀ = Accepted and H ₁ = Rejected			P _c < P _t H ₀ = Rejected and H ₁ = Accepted		
[Calculate P-value = 0.00 and P-value of table (α) = 0.05] = P _c < P _t = 0.00 < 0.05					
Null Hypothesis (H ₀)	Rejected				
Alternative Hypothesis (H ₁)	Accepted				
Significant difference between the net profit margin of selected five cement companies of India.					



4.2. Profitability Ratios Related to Overall Return on Assets/ Investments

4.2.1. Return on Capital Employed = EBIT / Capital Employed × 100

Table No.4.7. Return on Capital Employed (%)

Company Name	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018	Average	S.D	Min	Max
Ultratech Cement Ltd.	14.78	15.32	12.03	10.70	10.88	12.74	2.18	10.70	15.32
The India Cements Ltd.	2.83	7.04	4.24	4.81	5.16	4.82	1.53	2.83	7.04
Ambuja Cements Ltd.*	12.89	11.92	9.01	8.00	8.42	10.05	2.21	8.00	12.89
ACC Ltd.*	17.47	14.40	17.08	13.97	13.93	15.37	1.75	13.93	17.47
Shree Cements Ltd.	16.69	18.67	14.46	11.40	11.36	14.52	3.23	11.36	18.67

* = Ambuja Cements Ltd*and ACC Ltd* follows the calendar year.

Return on capital employed shows the fluctuating trends in all selected cement companies. Under this study the minimum return on capital employed 2.83% in the year 2021-2022 for The India Cements Ltd. The maximum return on capital employed is 18.67% in the year 2020-2021 for Shree Cements Ltd. Looking at the 5 years of return on capital employed figures, we can see that the average number for all companies ranges between 4 – 15%. ACC Ltd. and Shree Cements Ltd. have 1st and 2nd highest average return on capital employed of 15.37% and 14.52%. The India Cements Ltd. and Ambuja

Cements Ltd. have 1st and 2nd lowest average return on capital employed of 4.82% and 10.05%. In the given table no.4.7. the standard deviation is used to measure the variability or dispersion of the return on capital employed (ROCE) of the different companies over the last five years. For example, Shree Cements Ltd. has the highest standard deviation of 3.23, indicating that its ROCE has varied significantly over the years. In contrast, The India Cements Ltd. has the lowest standard deviation of 1.53, suggesting that its ROCE has been relatively stable over the years.

Table No.4.8. Hypothesis Testing of Return on Capital Employed

Hypothesis					
Null Hypothesis (H ₀)	There is no significant difference between the return on capital employed of selected five cement companies of India.				
Alternative Hypothesis (H ₁)	There is significant difference between the return on capital employed of selected five cement companies of India.				
ANOVA					
Return on Capital Employed (%)					
Source of Variation	Sum of Squares	DF	Mean Square	F	P-value
Between Groups	362.00	4.00	90.50	17.79	0.00
Within Groups	101.75	20.00	5.09		
Total	463.75	24.00			
Results Discussion					
P _c > P _t H ₀ = Accepted and H ₁ = Rejected			P _c < P _t H ₀ = Rejected and H ₁ = Accepted		
[Calculate P-value = 0.00 and P-value of table (α) = 0.05] = P _c < P _t = 0.00 < 0.05					
Null Hypothesis (H ₀)	Rejected				
Alternative Hypothesis (H ₁)	Accepted				
Significant difference between the return on capital employed of selected five cement companies of India.					



4.2.2. Return on Net Worth = Net Profit / Total Equity × 100

Table No.4.9. Return on Net Worth (%)

Company Name	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018	Average	S.D	Min	Max
Ultratech Cement Ltd.	14.34	12.32	14.24	8.79	8.61	11.66	2.82	8.61	14.34
The India Cements Ltd.	0.66	3.95	-0.65	1.33	1.93	1.44	1.70	-0.65	3.95
Ambuja Cements Ltd.*	9.36	8.81	6.88	7.07	6.25	7.67	1.34	6.25	9.36
ACC Ltd.*	12.79	11.17	11.79	14.31	9.77	11.97	1.71	9.77	14.31
Shree Cements Ltd.	13.76	15.16	12.13	9.90	15.55	13.30	2.33	9.90	15.55

* = Ambuja Cements Ltd*and ACC Ltd* follows the calendar year.

This table no.4.9. presents the return on net worth for five cement companies over a period of five years, from 2017-2018 to 2021-2022. The average, standard deviation, minimum and maximum values are also provided. Shree Cements Ltd. had the highest average return at 13.30%, with a standard deviation of 2.33%. The company's minimum return was 9.90%, while the maximum was 15.55%. ACC Ltd. had an a second-highest

average return at 11.97%, with a standard deviation of 1.71%. The company's minimum return was 9.77%, while the maximum was 14.31%. The India Cements Ltd. had the lowest average return at 1.44%, with a standard deviation of 1.70%. The company's minimum return was -0.65%, while the maximum was 3.95%.

Table No.4.10. Hypothesis Testing of Return on Net Worth

Hypothesis					
Null Hypothesis (H ₀)	There is no significant difference between the return on net worth of selected five cement companies of India.				
Alternative Hypothesis (H ₁)	There is significant difference between the return on net worth of selected five cement companies of India.				
ANOVA					
Return on Net Worth (%)					
Source of Variation	Sum of Squares	DF	Mean Square	F	P-value
Between Groups	464.98	4.00	116.25	27.74	0.00
Within Groups	83.82	20.00	4.19		
Total	548.80	24.00			
Results Discussion					
P _c > P _t H ₀ = Accepted and H ₁ = Rejected			P _c < P _t H ₀ = Rejected and H ₁ = Accepted		
[Calculate P-value = 0.00 and P-value of table (α) = 0.05] = P _c < P _t = 0.00 < 0.05					
Null Hypothesis (H ₀)	Rejected				
Alternative Hypothesis (H ₁)	Accepted				
Significant difference between the return on net worth of selected five cement companies of India.					



4.2.3. Return on Assets = Net Profit / Total Assets × 100

Table No.4.11. Return on Assets (%)

Company Name	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018	Average	S.D	Min	Max
Ultratech Cement Ltd.	8.76	6.64	7.59	4.20	4.10	6.26	2.07	4.10	8.76
The India Cements Ltd.	0.33	2.04	-0.31	0.63	0.94	0.73	0.87	-0.31	2.04
Ambuja Cements Ltd.*	7.38	7.02	5.66	5.90	5.07	6.21	0.96	5.07	7.38
ACC Ltd.*	8.70	7.80	7.95	9.40	6.14	8.00	1.22	6.14	9.40
Shree Cements Ltd.	10.14	10.98	8.11	6.25	9.14	8.92	1.84	6.25	10.98

* = Ambuja Cements Ltd*and ACC Ltd* follows the calendar year.

The table no.4.11. shows the return on assets (ROA) for five companies in the cement industry for the last five years (2021-2022 to 2017-2018). The average and standard deviation (S.D) for each company's ROA are also provided, along with the minimum and maximum ROA values for the period. Return on assets shows the mixed trends in all selected cement companies. Under this study the minimum return on assets -0.31% in the year 2019-2020 for The India Cements Ltd. The maximum return on assets is 10.98% in the year 2020-2021 for Shree Cements Ltd. Looking at the 5 years of return on assets figures,

we can see that the average number for all companies ranges between 0 – 9%. Shree Cements Ltd. and ACC Ltd. have first and second highest average return on assets of 8.92% and 8.00%. The India Cements Ltd. and Ambuja Cements Ltd. have 1st and 2nd lowest average return on assets of 0.73% and 6.21%. In this table, we can see that Ultratech Cement Ltd. has the highest S.D, indicating that its ROA has been more variable over the last five years. Conversely, The India Cements Ltd. has a very low S.D, indicating that its ROA has been consistently low and not very variable.

Table No.4.12. Hypothesis Testing of Return on Assets

Hypothesis					
Null Hypothesis (H ₀)	There is no significant difference between the return on assets of selected five cement companies of India.				
Alternative Hypothesis (H ₁)	There is significant difference between the return on assets of selected five cement companies of India.				
ANOVA					
Return on Assets (%)					
Source of Variation	Sum of Squares	DF	Mean Square	F	P-value
Between Groups	202.32	4.00	50.58	23.35	0.00
Within Groups	43.32	20.00	2.17		
Total	245.64	24.00			
Results Discussion					
Pc > Pt H ₀ = Accepted and H ₁ = Rejected			Pc < Pt H ₀ = Rejected and H ₁ = Accepted		
[Calculate P-value = 0.00 and P-value of table (α) = 0.05] = Pc < Pt = 0.00 < 0.05					
Null Hypothesis (H ₀)	Rejected				
Alternative Hypothesis (H ₁)	Accepted				
Significant difference between the return on assets of selected five cement companies of India.					



5. FINDINGS

Table No. 5.1. Findings of Profitability Ratios Based on Sales

EBITDA Margin Ratio (%)	EBIT Margin Ratio (%)	Net Profit Margin Ratio (%)
The study found out that Shree Cement Ltd. maintained the highest average EBITD margin ratio of 30.25% across the five-year study period out of all the selected five cements companies. While The India Cements Ltd. recorded the lowest figure at 13.32% on this profitability metric.	The study found out that Shree Cement Ltd. maintained the highest average EBIT margin ratio of 19.93% across the five-year study period out of all the selected five cements companies. While The India Cements Ltd. recorded the lowest figure at 8.44% on this profitability metric.	The study found out that Shree Cement Ltd. maintained the highest average net profit margin ratio of 14.07% across the five-year study period out of all the selected five cements companies. While The India Cements Ltd. recorded the lowest figure at 1.66% on this profitability metric.
Shree Cements Ltd. has the highest standard deviation (S.D) of 4.01%, indicating that its EBITDA margin ratio has the highest variability over the past five years. On the other hand, ACC Ltd. has the lowest standard deviation of 2.13%, suggesting that its EBITDA margin ratio has been more consistent over the past five years.	Shree Cements Ltd. has the highest standard deviation of 4.80%, indicating that its EBIT margin ratio has the highest variability over the past five years. On the other hand, ACC Ltd. has the lowest standard deviation of 2.37%, suggesting that its EBIT margin ratio has been more consistent over the past five years.	High standard deviation (Shree Cements Ltd.) indicates higher variability and potential risks, while a lower standard deviation (Ambuja Cements Ltd.) indicates a more stable performance.
ANOVA		
Significant difference between the EBITDA margin ratio of selected five cement companies of India.	Significant difference between the EBIT margin ratio of selected five cement companies of India.	Significant difference between the net profit margin ratio of selected five cement companies of India.

Table No. 5.2. Findings of Profitability Ratios Related to Overall Return on Assets / Investments

Return on Capital Employed (%)	Return on Net Worth (%)	Return on Assets (%)
The study found out that ACC Ltd. maintained the highest average return on capital employed of 15.37% across the five-year study period out of all the selected five cements companies. While The India Cements Ltd. recorded the lowest figure at 4.82% on this profitability metric.	The study found out that Shree Cements Ltd. maintained the highest average return on net worth of 13.30% across the five-year study period out of all the selected five cements companies. While The India Cements Ltd. recorded the lowest figure at 1.44% on this profitability metric.	The study found out that Shree Cements Ltd. maintained the highest average return on assets of 8.92% across the five-year study period out of all the selected five cements companies. While The India Cements Ltd. recorded the lowest figure at 0.73% on this profitability metric.
Shree Cements Ltd. has the highest standard deviation of 3.23%, indicating that its ROCE has varied significantly over the years. In contrast, The India Cements Ltd. has the lowest standard deviation of 1.53%, suggesting that its ROCE has been relatively stable over the years.	High standard deviation (Ultratech Cement Ltd. 2.82%) indicates higher variability and potential risks, while a lower standard deviation (Ambuja Cements Ltd. 1.34%) indicates a more stable performance.	We can see that Ultratech Cement Ltd. has the highest S.D, indicating that its ROA has been more variable over the last five years. Conversely, The India Cements Ltd. has a very low S.D, indicating that its ROA has been consistently low and not very variable.
ANOVA		
Significant difference between the return on capital employed of selected five cement companies of India.	Significant difference between the return on net worth of selected five cement companies of India.	Significant difference between the return on assets of selected five cement companies of India.

6. SUGGESTIONS

Based on the research study, for the five companies, here are some overall suggestions for each financial ratio:

EBITDA Margin Ratio: Shree Cements Ltd. has the highest EBITDA margin ratio for all the years, with an average of

30.25%. This suggests that the company is able to generate high earnings before interest, taxes, depreciation, and amortization for each rupee of revenue. The India Cements Ltd. has the lowest EBITDA margin ratio for all the years, with an average



of 13.32%. This suggests that the company needs to increase its operational efficiency to improve its profitability.

EBIT Margin Ratio: Shree Cements Ltd. has the highest EBIT margin ratio for all the years, with an average of 19.93%. This suggests that the company is able to generate high earnings before interest and taxes for each rupee of revenue. The India Cements Ltd. has the lowest EBIT margin ratio for all the years, with an average of 8.44%. This suggests that the company needs to improve its operating efficiency to increase its profitability.

Net Profit Margin Ratio: Shree Cements Ltd. has the highest net profit margin ratio for all the years, with an average of 14.07%. This suggests that the company is able to generate high earnings after all expenses and taxes are paid for each rupee of revenue. The India Cements Ltd. has the lowest net profit margin ratio for all the years, with an average of 1.66%. This suggests that the company needs to improve its cost management to increase its profitability.

Return on Capital Employed (ROCE): ACC Ltd. has the highest ROCE for all the years, with an average of 15.37%. This suggests that the company is able to generate high returns on the capital employed in the business. The India Cements Ltd. has the lowest ROCE for all the years, with an average of 4.82%. This suggests that the company needs to improve its efficiency in using capital to generate profits.

Return on Net Worth (RONW): Shree Cements Ltd. has the highest RONW for all the years, with an average of 13.30%. This suggests that the company is able to generate high returns on the investment made by the shareholders. The India Cements Ltd. has the lowest RONW for all the years, with an average of 1.44%. This suggests that the company needs to improve its profitability and efficiency in using shareholders' funds to generate profits.

Return on Assets (ROA): Shree Cements Ltd. has the highest ROA for all the years, with an average of 8.92%. This suggests that the company is able to generate high profits from its assets. The India Cements Ltd has a very low average ROA of 0.73%, indicating that it is not using its assets efficiently to generate profits. The company could focus on improving its asset turnover ratio by increasing its revenue, reducing its costs, or selling underutilized assets. Alternatively, the company could focus on improving its profitability by increasing its profit margin, although this might be challenging in the current economic environment.

7. CONCLUSION

We can draw the following conclusions about the research study:

Shree Cements Ltd. has the highest EBITDA margin ratio, EBIT margin ratio, and net profit margin ratio on average, while The India Cements Ltd. has the lowest values in all three ratios. Ultratech Cement Ltd. and Ambuja Cements Ltd. have similar average ratios across all three measures, with Ultratech Cement Ltd. having a slightly higher EBITDA margin ratio and Ambuja

Cements Ltd. having a slightly higher EBIT and net profit margin ratio. ACC Ltd. has the lowest average EBIT and net profit margin ratio among the five companies, but its EBITDA margin ratio is slightly higher than that of The India Cements Ltd.

Shree Cements Ltd. and ACC Ltd. have consistently shown a high return on capital employed, return on net worth, and return on assets across the years covered by the data. Ultratech Cement Ltd. also consistently showed good returns, although not as high as Shree Cements Ltd. and ACC Ltd. On the other hand, The India Cements Ltd. showed lower returns compared to the other companies, with negative returns in some years. Ambuja Cements Ltd. had mixed results, with average returns falling between the other companies but with more variability in its returns over the years.

It is also concluded that all the null hypotheses have not been accepted meaning thereby all alternative hypotheses are accepted. There are significant differences between the selected all profitability ratios (Based on sales and related to overall return on assets / investments ratio) of selected five cement companies of India.

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