



## **A Comparative Study on the Ratio Analysis of Selected Indian Cement Industry for the Period Between 2018-2023**

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### **ABSTRACT**

The paper presents a comparative analysis of the financial performance of 2 leading cement industry Ambuja and Ultratech cement, through ratio analysis. The study aims to provide insights into the financial health, Efficiency, and profitability of both companies, thereby aiding investors, stakeholders and management in informed decision-making.

The findings of the study highlight the comparative strengths and weakness of TCS and Wipro in various financial aspects. It delves into liquidity ratios to assess short-term solvency, profitability ratios to evaluate earning capacity, efficiency ratios to gauge operational effectiveness, and solvency ratios to measure long-term financial viability

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**KEYWORDS** – Cement industry, Ambuja, Ultratech, Ratio analysis, Financial performance

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### **INTRODUCTION**

The cement industry is essential for the construction and development of infrastructure globally. Cement serves as the primary binding component in concrete, a fundamental material extensively utilized in constructing buildings, bridges, roads, and diverse structures. The cement industry encompasses a range of activities, from raw material extraction to the production of the final product.

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### **REVIEW OF LITERATURE**

- ❖ **SS THAKUR (2019)** Cement manufacturing firms play a vital role in supporting the construction sector. This paper focuses on evaluating the performance of leading companies in India. Data was gathered from annual reports available on company websites spanning from 2015 to 2019 for analysis. ANOVA was employed as the statistical tool for data analysis. In assessing company performance, ratio analysis was utilized, specifically focusing on metrics including gross profit, net profit, current ratio, quick ratio, and debt equity ratio.
- ❖ **PT PATEL (2018)** This research exclusively examined the working capital issues within the company. The study conducted an analysis of the challenges and opportunities faced by cement companies, focusing on problems related to current assets, liquidity analysis, and the future outlook based on their balance sheets and profit and loss accounts extracted from annual reports. In light of the findings, the researcher provided recommendations aimed at enhancing the management of the cement industry in the future.
- ❖ **AV RAIKAR (2018)** Several factors contribute to this decline, including the recession in housing demand, the implementation of GST on housing, and the demonetization of currency. This study seeks to assess the performance of cement companies using a multi-criteria decision technique. Based on the methodology employed and the available data, Ambuja Cement, Ultra Tech Cement, and Orient Cement emerge as the top three cement firms.
- ❖ **B Prabhakar (2023)** The primary aim of this study is to assess the profitability of Ambuja Cements Ltd. and ACC Ltd. based on their sales and their overall return on assets or investments. The analysis involves examining the financial statements of both companies from December 2017 to 2021, utilizing a range of profitability ratios such as EBITDA margin ratio, EBIT margin ratio, net profit margin ratio, return on capital employed, and return on assets, along with statistical analysis. The findings of this study offer valuable insights for investors and other stakeholders keen on evaluating the profitability of these companies.
- ❖ **M Kataria (2022)** Financial performance analysis is an effective tool to assess the future of any company. This study is an attempt to evaluate the short-term financial performance of selected cement companies and analyze their profitability.

The results revealed that the short term liquidity position of the two companies were not satisfactory during the study period. It also showed that UltraTech Cement Limited's correlation between the Investment turnover and Inventory turnover ratio was very strong. In case of Shree cement Limited, a weak correlation was observed between the Net Profit and the Debtor turnover ratio. The Investment Turnover and the Debt Equity Ratio were weak. Keywords: Cement industries, financial performance, correlation analysis

- ❖ **R. Saravanan (2022)** It's crucial for the firm to gain a deeper understanding of the fluctuating profitability to develop a more effective strategy. Earning profits is deemed vital for the business's sustainability. Profitability analysis evaluates how effectively a firm is performing in terms of its capacity to generate profits.

Over the last five years, the cement manufacturing industry has experienced significant downturns due to various factors, including economic crises, escalating fuel costs, fluctuations in raw material prices, and other external environmental influences. Additionally, internal factors such as operational inefficiencies, non-strategic management decisions, and increased overheads have contributed to these challenges.

- ❖ **R. KARTHIKA (2022)** The Profitability ratios show the capability of the select companies. The financial positions of the selected cement companies are reasonable. But both the companies must improve their short term solvency position. The profitability ratio of two cement companies is satisfactory and the two selected companies short term liquidity position is not satisfactory because the selected company's current ratio and Quick ratio level is below one and two selected companies are quickly maintained their inventory, investment and Debtors.

The competence of a compact depends ahead the functioning operations of the anxiety.

- ❖ **K Patel, H Parikh – (2022)** To evaluate financial performance analysis of selected cement companies in Gujarat in terms of EPS. It assumed that there is no significant difference in EPS ratio of the selected cement companies during the period the study

Ultra Tech has lead the all other firms and ranked on top position. Along with that TATA and JK

Lakshmi cement are ranked on second and third positions respectively. The two firms JP and SAL cements were failed during last ten years average EPS value. Moreover, the standard deviation of the firms are also computed lower proportionally. Thus, the coefficient of variability also found stable. In all terms of statistics. Ultra tech lead the other firms. The variability of TATA cement is more fluctuating for last decade. Compare to TATA the proportion of lower variability is recorded for JK Lakshmi cement. Thus, calculatedly JK Lakshmi has a fare results in EPS than TATA cement

- ❖ **PK Patjoshi - (2020)** The stock market constitutes a significant component of the Indian financial system, providing a platform for investors to trade stocks. Investing in the stock market entails uncertainties and unforeseen risks. Investors engage in various financial securities in the stock market with the expectation of future gains, termed as expected returns. Volatility, often referred to as irregularity, is a characteristic of the stock market.

Various analytical tools such as mean, standard deviation, skewness, kurtosis, correlation, and regression are employed to analyze the volatility trends of cement companies in the Indian stock market.

- ❖ **A Muthusamy, S Karthika - (2019)** The data utilized in this research is sourced from secondary sources. Profit generation is deemed essential for the sustainability of the industry. Profitability ratios indicate the capacity of the chosen companies. The financial standings of the selected cement firms are satisfactory. However, both companies need to enhance their short-term solvency position.

The Investment Turnover Ratio and the Debt Equity Ratio stand at -0.720, indicating significant weakness. The effectiveness of a firm relies on the efficient operations of concern.

- ❖ **S Sharma - (2008) Design/methodology/approach:** Data envelopment analysis (DEA) was utilized to compute the technical and scale efficiency metrics of the companies. Within the DEA framework, the input-oriented variable returns to scale (VRS) model was employed for the analysis. A representative sample of 20 companies, which collectively hold 85.5% of the total market share, was studied. The selection criterion for including a firm in the analysis was a market share of at least one percent or more.

The findings indicate that 50% of the firms are technically efficient and are operating at optimal plant size. Meanwhile, 25% of the firms are experiencing decreasing returns to scale, indicating overutilization of their plant capacities, while the remaining 25% are showing increasing returns to scale, suggesting underutilization of plants. Recommendations for input targets and reductions are proposed for the inefficient firms.

Overall, the industry appears to perform well on both efficiency parameters, with average scores for technical and scale efficiency in the industry at 0.96 and 0.97, respectively.

- ❖ **S Narender, M Rajesh - (2023)** The financial strength of the company is relies on obligation and capital structure set in the organizations. The present study centers around the effect of obligation on money related strength of select organizations by utilizing the accompanying well known overall acknowledged model to evaluate the monetary soundness of the organizations by taking obligation parts of working capital, held profit, Earning Before Interest and Taxes, advertise estimation of value and deals. The Z-score is a straight mix of four or five basic business proportions, weighted by coefficients. The coefficients were evaluated by distinguishing an arrangement of firms which had opted for non-payment and afterward gathering a coordinated example of firms which had made due, with coordinating by industry and surmised

size or resources. This paper centers on the obligation value financing designs in the Indian Corporate Sector with exceptional Cement Companies.

- ❖ **SA Chakraborty - (2018)** Compared to conventional methods, value-based measures demonstrate strong correlations between profitability and market returns. When these measures yield positive values, economic profits are generated, leading to an expected increase in shareholder value. Conversely, negative values indicate a decline in shareholder value.

The study seeks to assess the relationship between EVA (Economic Value Added), MVA (Market Value Added), EV (Enterprise Value), PAT (Profit After Tax), NOPAT (Net Operating Profit After Tax), EPS (Earnings Per Share), MPS (Market Price Per Share), ROCE (Return on Capital Employed), ROE (Return on Equity), and ROA (Return on Assets) concerning Capital Employed. Additionally, the study aims to conduct variance analysis between EPS, ROCE, ROE, and EVA of leading Indian cement players.

- ❖ **LG Burange, S Yamini -(2009)** Profitability is assessed through return on equity (ROE). An efficiency-profitability matrix is constructed by considering the characteristics of DEA scale efficiency and ROE to classify cement companies from best to worst. The study findings reveal that among the 10 cement companies examined, Sree Cements and Dalmia Bharat Cement are positioned in the stars quadrant, signifying they are both efficient and highly profitable. Three companies are categorized as inefficient yet highly profitable, falling into the cash cows quadrant. Half of the companies are situated in the dogs quadrant, indicating they are inefficient and have low profitability.

To determine relative efficiency, cash profit is utilized as the output variable in the DEA model instead of profit after tax. The results demonstrate that there is no change in the positioning of cement companies within the efficiency-profitability matrix. However, in the case of IT companies, TCS's position shifts from the stars quadrant to the cash cows quadrant. This illustrates the impact of cash profit on the performance of IT companies

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## NEED FOR STUDY

A comparative study between 2 companies through ratio analysis is very important in order to provide financial performance of the companies for investors and even understand where the companies stand in the market. Liquidity analysis is important because it provides us with current ratio and quick ratio of the company which tell the liquidity position of the company. Similarly, profitability ratios is also important is order to ascertain the profitability of the company.

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## OBJECTIVE OF STUDY

- To compare and analyse key financial ratios such as liquidity, profitability, longterm solvency and Activity ratios for both Ambuja and Ultra-tech.
- To evaluate the financial stability and risk exposure of Ambuja and Ultra-tech and assessing the impact of financial risk on their operations.
- To assess the efficiency of operations to understand how well Ambuja and Ultratech are utilizing their assets and managing their working capital.

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## RESEARCH METHODOLOGY

**Research methodology** is a process where specific procedure or technique is used to analyse a particular information about the topic.

There are basically two types of data i.e. primary data and secondary data.

**Primary data** are those data which are collected for the first time, to meet the objective of research only.

**Secondary data** is data which has been already collected and used for any other purpose and can be used for this research also. This study is based on financial statements of companies, which is secondary data.

### SAMPLE DESIGN

**Convenient sampling** is a process where data collection and research on a particular data is conducted on the basis of availability of that data.

The convenient sampling technique is used for the study.

The selection of sample companies is on the basis of consumer preference and their position in the market.

Following is the list of 2 cement companies which are chosen from top ten cement companies in India as sample size for the study. **1. Ambuja and 2. Ultratech.**

### PERIOD OF STUDY

The study covers a period of 2 years covering a period from **2018-19 to 2022-23**. It is also decided by taking into consideration of the availability of data.

## DATA ANALYSIS

### KEY FINANCIAL RATIOS –

The 5 category of Ratios that have been used in ratio analysis of TCS and Wipro are as follows –

#### 1. LIQUIDITY RATIO –

- a) Current ratio
- b) Quick ratio

#### 2. LONG-TERM SOLVENCY RATIO –

- a) Debt-Equity ratio
- b) Debt-Asset ratio
- c) Proprietary Ratios

#### 3. ACTIVITY RATIO –

- a) Working capital turnover ratio
- b) Debtors' turnover ratio
- c) Creditors turnover ratio

#### 4. PROFITABILITY RATIO (%) –

- a) Net Profit margin
- b) Return on Equity
- c) Return on Capital Employed

Table 1 to Table 2 shows the values of various financial ratios of Ambuja and Ultra-tech respectively for comparing their performance Of last 5 years from March 2019 to March 2023. Various ratios have been taken which are Current ratio and quick ratio under Liquidity ratio, Debt-Equity ratio, Debt-Asset ratio and Proprietary ratio under Long-term solvency ratio, working capital ratio under activity ratio and Finally under Profitability Ratio there comes Net profit margin, return on equity, return on asset and Return on Capital employed.

TA	BLE 1 - FINANCIAL RATIOS OF AMBUJA				
RATIOS	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
<b>LIQUIDITY RATIO -</b>					
1. CURRENT RATIO	1.75	2.00	1.26	0.97	1.53
2. QUICK RATIO	1.49	1.70	0.99	0.81	1.32
<b>LONG-TERM SOLVENCY RATIO -</b>					
1. DEBT-EQUITY RATIO	0.000	0.004	0.005	0.004	0.007
2. DEBT-ASSET RATIO	0.003	0.003	0.004	0.004	0.006
3. PROPRIETARY RATIO	0.82	0.84	0.80	0.82	0.83

<b>ACTIVITY RATIO -</b>					
WORKING CAPITAL RATIO	0.52	0.37	1.46	15.88	0.63
<b>PROFITABILITY RATIO - (%)</b>					
1. NET PROFIT MARGIN	12.93	13.04	15.08	16.01	13.46
2. RETURN ON EQUITY	0.08		0.07 0.09	0.08	0.06
3. RETURN ON CAPITAL EMPLOYED		0.10 0.08	0.12	0.11	0.08

SOURCE – SELF CALCULATED

TABLE 2 - FINANCIAL RATIOS OF ULTRA-TECH					
RATIOS	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
<b>LIQUIDITY RATIO -</b>					
1. CURRENT RATIO	0.98	0.99	1.17	1.03	0.87
2. QUICK RATIO	0.70	0.72	0.98	0.76	0.61
<b>LONG-TERM SOLVENCY RATIO -</b>					
1. DEBT-EQUITY RATIO	0.43	0.56	0.68	1.27	1.60
2. DEBT-ASSET RATIO	0.108	0.132	0.195	0.262	0.293
3. PROPRIETARY RATIO	0.25	0.23	0.28	0.20	0.18
<b>ACTIVITY RATIO -</b>					
WORKING CAPITAL RATIO	12.82	39.08	1.56	11.17	1.29

<b>PROFITABILITY RATIO - (%)</b>					
1. NET PROFIT MARGIN	8.13	14.20	12.51	13.62	6.14
2. RETURN ON EQUITY	0.22	0.37	0.23	0.36	19.00
3. RETURN ON CAPITAL EMPLOYED	0.11	0.13	0.12	0.09	0.06

SOURCE – SELF CALCULATED

**INSIGHTS –**

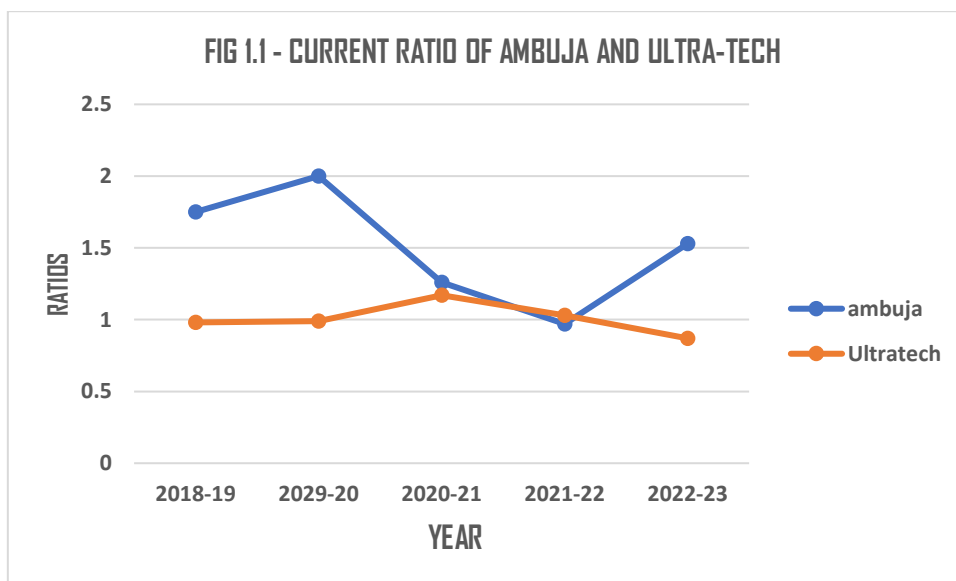
Now the results related to each specific ratio of each company is presented and discussed as follows –

1. **LIQUIDITY RATIO** – It refers to the firm’s ability to meet its current obligations i.e. Short-term Liabilities. It is of 2 types –
  - a. **CURRENT RATIO** - It establishes a relationship between Current assets and current liabilities, it indicates whether the enterprise will be able to meet its short-term obligations as and when they become due for payment. Formula of current ratio is

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

**IDEAL CURRENT RATIO** – The acceptable Current ratio differs from industry to industry depending on the risk involved. However, generally accepted standard of current ratio is 2:1, i.e. current assets should be twice the current liabilities.

If the current ratio is 2 or more than 2, it means the firm is adequately liquid and able to meet its current obligation bit if current ratio is less than 2, it means the firm may face difficulty in meeting its current obligation.



**INTEPRETATION –**

- From Fig. 1.1 we can see that Current ratio of AMBUJA was highest in 2019-20,

- Similarly, from Fig. 1.1. we can see that the Current ratio of ULTRA-TECH was highest in year 2020-21.
- The results show that despite of gradual decline in current ratio of both the companies, ULTRA-TECH managed to come on track quickly as compared to AMBUJA .

a. **QUICK RATIO** – Liquid/quick/acid-test ratio is a liquidity ratio which measures the ability of enterprise to meet its short-term financial obligations i.e. Current Liabilities. It establishes the relationship between Liquid assets and current liabilities.

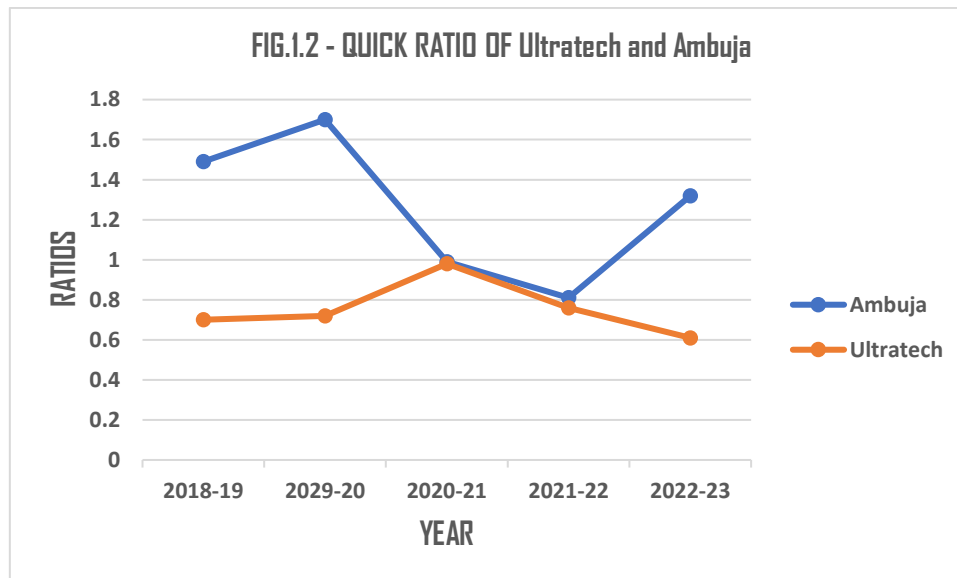
#### Quick Ratio Formula

$$\text{Quick Ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

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**IDEAL RATIO** – Quick ratio of 1:1 is an accepted standard, since for every rupee of current liabilities, there is rupee of quick assets.

In case, Liquid ratio is less than 1, it means that current liabilities are more than its liquid assets, as a result the enterprise may not able to meet its short-term financial obligations.



#### INTEPRETATION –

- From Fig. 1.2 we can see that Quick ratio of AMBUJA was highest in 2019-20 .
- Similarly, from Fig. 1.2. we can see that the Quick ratio of ULTRA-TECH was highest in year 2020-21.

2. **LONG-TERM SOLVENCY RATIO** – Solvency of a business means that the business is in a position to meet its long-term obligations as and when they become due.

Solvency ratios are the ratios which show whether the enterprise will be able to meet its long-term obligations or not.

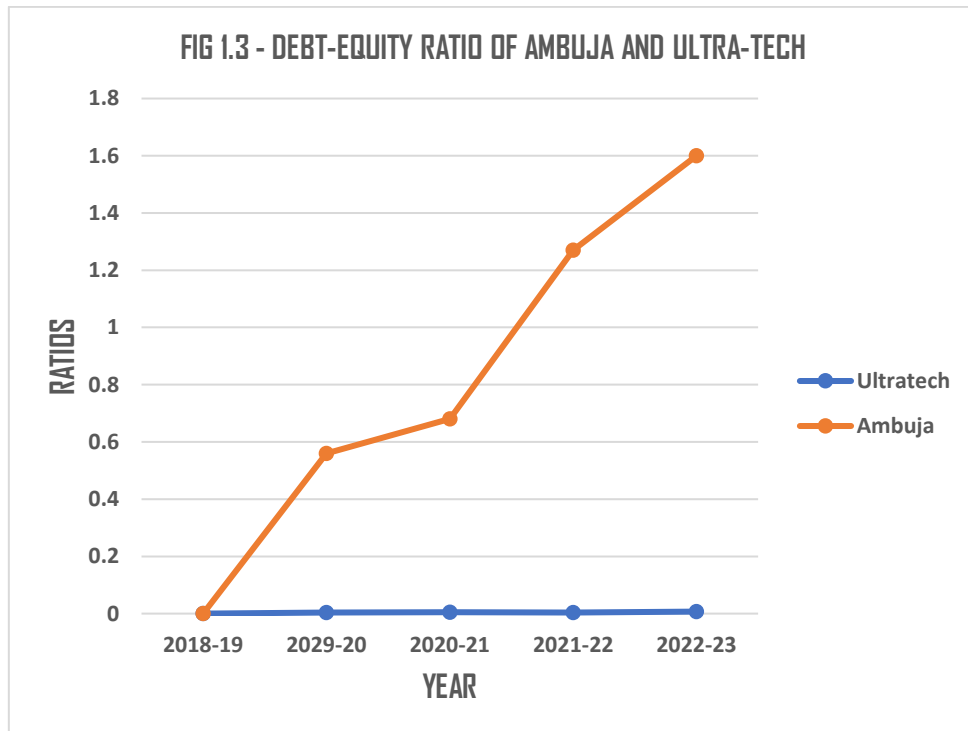
a. **DEBT-EQUITY RATIO (D/E RATIO)** – Debt-Equity ratio shows the relationship between Longterm external equities i.e. external debts and internal equities i.e. Shareholder's Fund of the enterprise. It is calculated to assess long-term financial soundness of the company,

$$\text{Debt to Equity Ratio (D/E)} = \frac{\text{Total Debt}}{\text{Total Shareholders Equity}}$$

(TOTAL DEBT = LONG - TERM DEBT + SHORT - TERM DEBT)

(LONG TERM DEBT = LONG-TERM BORROWING + LONG-TERM PROVISION)

(SHORT-TERM DEBT = SHORT-TERM BORROWING + SHORT-TERM PROVISION)



#### INTEPRETATION -

- From fig. 1.3, we can see that Debt-Equity ratio of AMBUJA was 0.002 in 2018-19, 0.003 in 2019-20 .
- Similarly, Debt-equity ratio of ULTRA-TECH was 0.06 in 2018-19, 0.01 in 2019-20

b. **DEBT-ASSET RATIO (D/A RATIO)** – Debt to asset ratio measures the relationship between long term debts and assets of the enterprise.

It measures the extent to which long term debt is covered by the assets of the enterprise.

#### IDEAL RATIO – 1:1

A high ratio means higher safety for lenders to the business. On the other hand lower ratio means lower safety for lenders to the business.

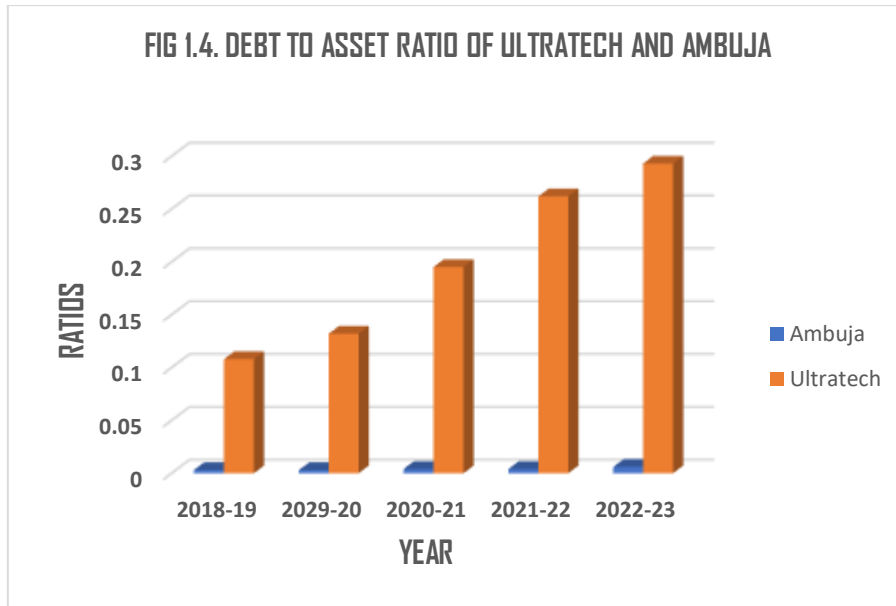
$$\text{Debt to Asset Ratio Formula} = \frac{\text{Total Debts}}{\text{Total Assets}}$$



Where,

$$\text{Total debt} = \text{Long-term debt} + \text{Short-term debt}$$

$$\text{Total assets} = \text{Current assets} + \text{non-current assets}$$



C. **PROPRIETARY RATIO** - It establishes the relationship between proprietor’s fund and the total assets.

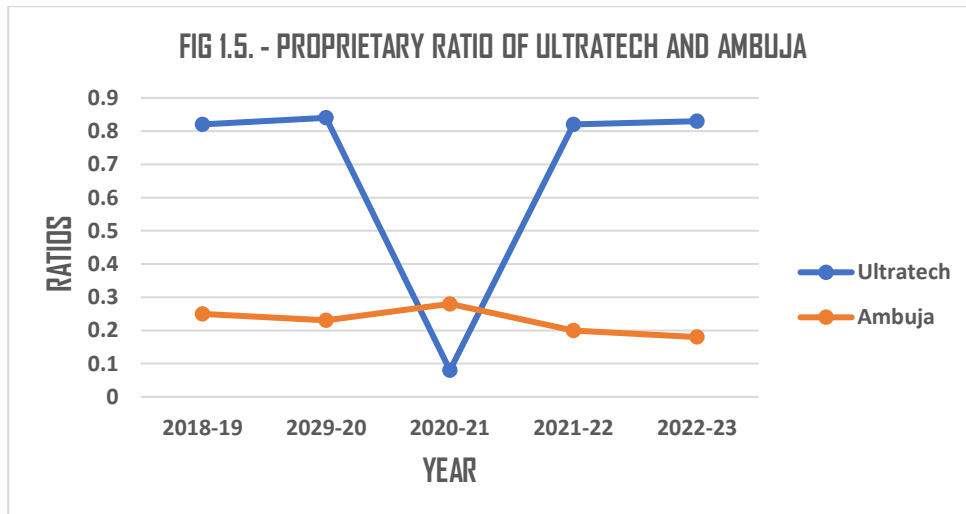
The objective of computing this ratio is to measure the proportion of total assets financed by proprietor’s fund. The ratio is important for unsecured lenders and creditors.

A high proprietary ratio means adequate safety for unsecured creditors and lenders and a low proprietary ratio indicates greater risk to unsecured lenders and creditors.

$$\text{Proprietary Ratio} = \frac{\text{Proprietor's Fund}}{\text{Total Assets}}$$

Where,

$$\text{Total assets} = \text{Current assets} + \text{non-current assets}$$



3. **ACTIVITY RATIO** – Also termed as Performance ratio or turnover ratio measures how well the resources have been used by the enterprise.

a. **WORKING CAPITAL TURNOVER RATIO** – It shows the relationship between working capital and revenue from operations. It shows the number of times a unit of Rupee invested in working capital produces sales.

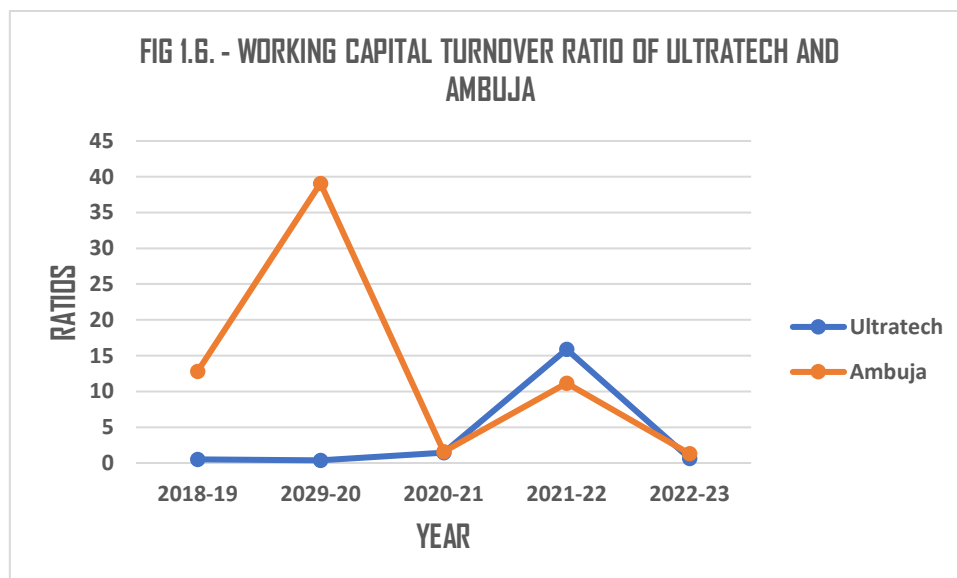
$$\text{Working Capital Turnover Ratio Formula} = \frac{\text{Turnover (Net Sales)}}{\text{Working Capital}}$$

Where,

Working capital – Current assets – current liabilities

A higher ratio shows efficient use of Working capital, whereas low ratio shows it's inefficient use.

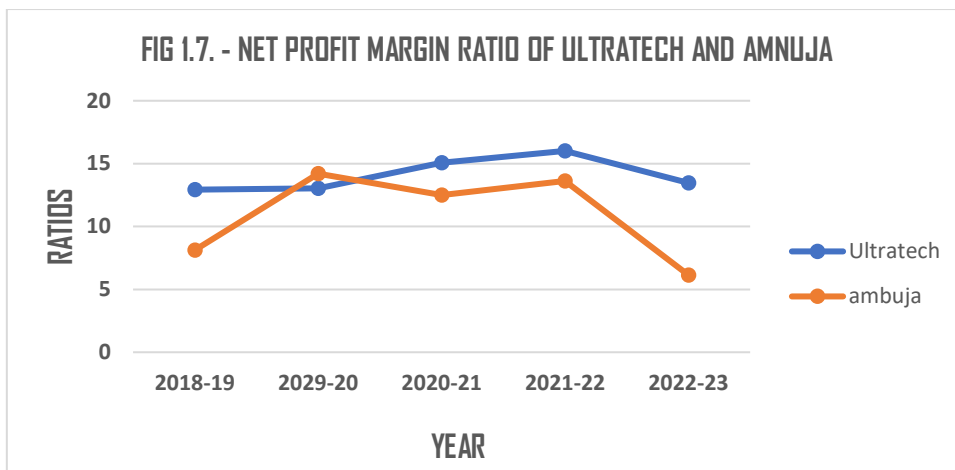
Higher the ratio, better it is, but a very higher ratio indicates overtrading – the working capital being inadequate for the scale of operations.



**ROFITABILITY RATIO** – Efficiency in business is measured by profitability. “Profitability refers to the financial performance of the business.

**NET PROFIT MARGIN RATIO** – It establishes the relationship between Net profit and revenue from operations i.e. Net sales.

Net profit ratio is an indicator of overall efficiency of the business, Higher the ratio better the business.



RETURN ON EQUITY RATIO – It is a ratio that provides with the insight as how efficiently a company is handling the money contributed by it’s shareholders.

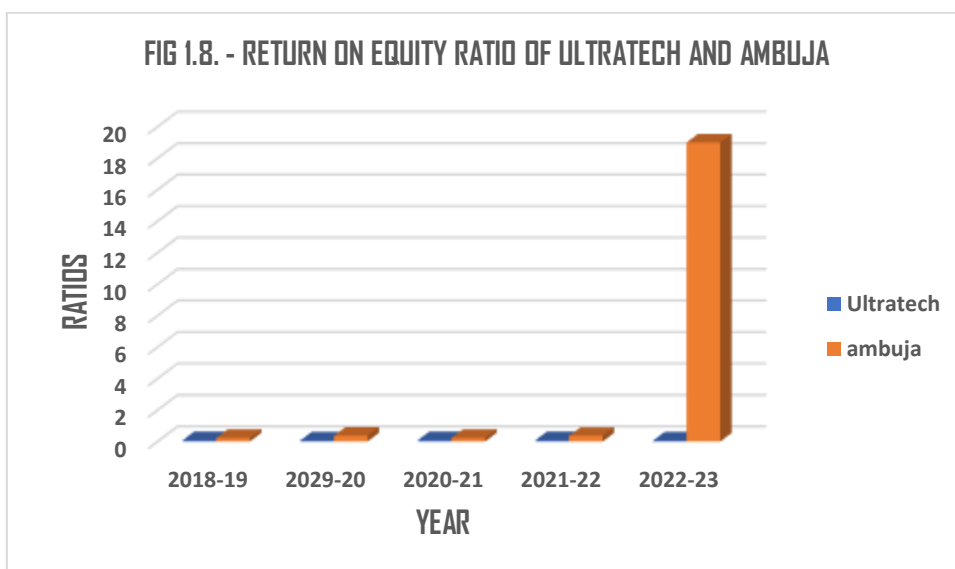
The higher the ROE, the more efficient a company's management is at generating income and growth from its equity financing.

**Return on Equity (ROE)**

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$$\text{Return on Equity} = \frac{\text{Net Earnings (TTM)}}{\text{Shareholders' Equity}}$$

(TTM: Trailing 12 months)

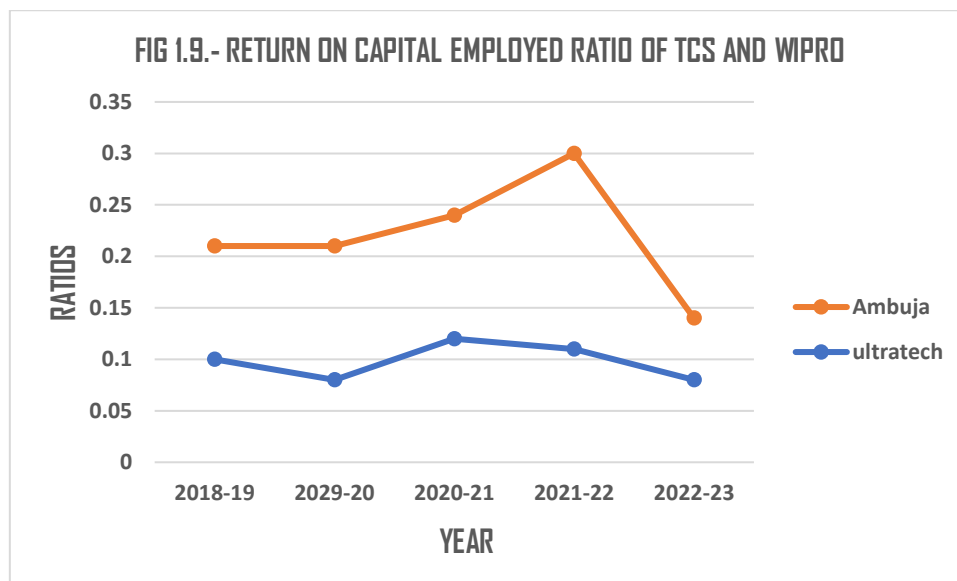


a. **RETURN ON CAPITAL EMPLOYED RATIO** – It shows the relation between profit (profit before interest and tax) and Capital employed. It shows the profitability of the company.

$$\text{Return on Capital Employed} = \frac{\text{EBIT}}{\text{Total Assets} - \text{Total Current Liabilities}}$$

Where,

Capital employed = Total assets – Total current liabilities



## FINDINGS

Finding from the data analysis which involved comparative study on Ratio analysis of AMBUJA and ULTRA-TECH is as follows -

- We can conclude that current ratio of both AMBUJA and ULTRA-TECH was declining every year but then also ULTRA-TECH performed better than AMBUJA in terms of Current ratio.
- We conclude that quick ratio of AMBUJA and ULTRA-TECH was declining every year but then also ULTRA-TECH performed better than AMBUJA in terms of quick ratio.
- We conclude that Debt-equity ratio (D/E Ratio) of both AMBUJA and ULTRA-TECH was increasing but also declined in later phase but then also in every phase ULTRA-TECH performed better than AMBUJA.
- We conclude that Debt-asset ratio (D/A ratio) of both AMBUJA and ULTRA-TECH was increasing but also declined in later phase but then also in every phase ULTRA-TECH performed better than AMBUJA.
- We conclude that there was not much difference in proprietary ratio of both AMBUJUA and ULTRA-TECH as the ratio of both the companies were declining year by year which also tells that both the companies performed equally better.
- We conclude that Working capital turnover ratio of AMBUJA was increasing every year but the ratio of ULTRA-TECH first increased and then decreased, but even then, ULTRA-TECH performed better than AMBUJA.
- We conclude that Net profit margin ratio of AMBUJA first declined then increased and then decreased and ratio of ULTRA-TECH first increased and then decreased but even then AMBUJA were more efficient than ULTRA-TECH.
- We conclude that Return on equity (ROE) ratio of AMBUJA increased every year whereas ROE ratio of ULTRA-TECH first increased and then decreased which tells that performance of AMBUJA was much better than ULTRA-TECH

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## CONCLUSION

In this research project on the topic “A comparative study on the Ratio analysis of AMBUJA and ULTRA-TECH” we conducted many ratio analysis of both the companies in which we saw that in some ratios AMBUJA was better and in some ratio, ULTRA-TECH was better like –

- In terms of Current ratio, quick ratio, Debt-equity ratio (D/E Ratio), Debt-asset ratio (D/A Ratio) and Working capital turnover ratio ULTRA-TECH performed better than AMBUJA.
- In terms of Proprietary ratio performance of both the company was equally better.
- In terms of Net profit margin ratio, return on equity (ROE) and return on capital employed AMBUJA performed better than ULTRA-TECH.

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## LIMITATIONS

The limitations from the above project were as follows –

- Only 2 companies were taken for the comparative study, we could have taken more than 2 companies for better results.
- Due to time constraint only 2 companies were taken.
- Data of the company was very small which was from 2018-2023 which could have been little big in size for better results.
- Data was collected from the online source because we can't get the data from company itself.
- Apart from ratio analysis many more tools could have been used like Variances, Dupont analysis and ANNOVA, etc. for better results.

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