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ANALYSIS AND EVALUATION.

5.1 INTRODUCTION:-

The researcher has examined working capital ratios for the purpose of analysis of working management of sampled companies under study. Ratio analysis is powerful tool of financial analysis. Ratio helps to summarize the large qualitative judgment about the firm's financial performance According to J.Batty he term accounting ratio is used to describe significant relationships which exist between figures shows in a balance-sheet, in a profit and loss account, in a budgetary control system or in any other part of the accounting organization.

The basis for financial analysis, planning and decision making is financial statements which mainly consist of balance sheet and profit and loss account. The profit & loss account shows the operating activities of the concern and the balance sheet depicts the balance value of the acquired assets and of liabilities at a particular point of time.

However, the above statements do not disclose all of the necessary and relevant information. For the purpose of obtaining the material and relevant information necessary for ascertaining the financial strengths and weaknesses of an enterprise, it is necessary to analyze the data depicted in the financial statement.

The financial manager has certain analytical tools which help in financial analysis and planning. The main tools are ratio analysis. So, we first discuss the ratio analysis:
5.2 CURRENT RATIO:

Also known as "liquidity ratio", "cash asset ratio" and "cash ratio".

It is a popular ratio to evaluate the short-term solvency position of a business. The short-term solvency means the ability of a business to pay its short-term obligations when they become due. Short term obligations are those liabilities that are payable within a short period of time, usually one year.

This ratio is an indicator of the firm’s commitment to meet its short-term liabilities. Current assets means the assets that will either be used up or converted in to cash within a year’s time or operating cycle of the business whichever is longer. Current liabilities means liabilities means liabilities payable within a year or operating cycle whichever is longer out of the exiting current assets or by creation of liabilities. It is an index of the solvency of a concern. An ideal current ratio is 2:1 the ratio is considered as a safe margin of solvency due to the fast that if the current assets are reduced to half i.e. one instead of two also the creditor will be able to get their payments in full. However, a business having seasonal trading activity may show a lower current ratio at certain period of the year.

A liquidity ratio that measures a company's ability to pay short-term obligations.

\[
\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}
\]

Above formula comprises of two components i.e., current assets and current liabilities. Some examples of current assets and current
liabilities are given below:

**Current assets** = Inventory + Sundry debtors’ + Cash and Bank balances + Loan and Advances + Disposable investments.

**Current liabilities** = Creditor for goods and services + Short-term loans + Bank overdraft + Cash credit + outstanding expenses + Provision for taxation + Proposed dividend + Unclaimed dividend.\(^1\)

The ratio is mainly used to give an idea of the company's ability to pay back its short-term liabilities (debt and payables) with its short-term assets (cash, inventory, receivables). The higher the current ratio, the more capable the company is of paying its obligations. A ratio under 1 suggests that the company would be unable to pay off its obligations if they came due at that point. While this shows the company is not in good financial health, it does not necessarily mean that it will go bankrupt - as there are many ways to access financing - but it is definitely not a good sign.\(^2\)

The current ratio can give a sense of the efficiency of a company's operating cycle or its ability to turn its product into cash. Companies that have trouble getting paid on their receivables or have long inventory turnover can run into liquidity problems because they are unable to alleviate their obligations. Because business operations differ in each industry, it is always more useful to compare companies within the same industry.
A very high current ratio is also not desirable since it means less efficient use of funds. This is because a high current ratio means excessive dependence on long term sources of raising funds. Long term liabilities are costlier than current liabilities and therefore, this will result in considerably lowering down the profitability of the concern.

The object of ascertaining this is to measure the extent to which payment is to be made in a year. Hence, on the one hand, it is a measure of strength of the working capital position of a concern and on the other hand it indicates the solvency of the concern.

The current ratio is the index of the concern’s financial stability since it shows the extent of the working capital. Which in the amount by which current assets exceeds the current liabilities. The current ratio of selected cement industries is being described in table no. 5.1.
**Table No. 5.1**  
*Current Ratio (In Times) In Cement Industries.*  
*Under Study from 2003-04 to 2012-13.*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year</th>
<th>Ambuja Cements Ltd.</th>
<th>Gujarat Sidhee Cement Ltd.</th>
<th>Sanghi Industries Ltd.</th>
<th>Saurashtra Cement Ltd.</th>
<th>Shree Digvijay Cement Co. Ltd.</th>
<th>Ultratech Cement Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-04</td>
<td>3.059</td>
<td>2.171</td>
<td>0.570</td>
<td>0.536</td>
<td>1.378</td>
<td>1.924</td>
</tr>
<tr>
<td>2</td>
<td>2004-05</td>
<td>1.414</td>
<td>1.771</td>
<td>0.557</td>
<td>0.423</td>
<td>0.267</td>
<td>1.906</td>
</tr>
<tr>
<td>3</td>
<td>2005-06</td>
<td>1.477</td>
<td>1.280</td>
<td>0.902</td>
<td>0.711</td>
<td>0.296</td>
<td>1.389</td>
</tr>
<tr>
<td>4</td>
<td>2006-07</td>
<td>1.675</td>
<td>1.007</td>
<td>2.827</td>
<td>1.371</td>
<td>0.479</td>
<td>1.271</td>
</tr>
<tr>
<td>5</td>
<td>2007-08</td>
<td>1.357</td>
<td>1.666</td>
<td>2.940</td>
<td>1.249</td>
<td>0.586</td>
<td>1.019</td>
</tr>
<tr>
<td>6</td>
<td>2008-09</td>
<td>1.587</td>
<td>1.009</td>
<td>2.947</td>
<td>0.586</td>
<td>1.249</td>
<td>1.093</td>
</tr>
<tr>
<td>7</td>
<td>2009-10</td>
<td>1.136</td>
<td>1.487</td>
<td>1.805</td>
<td>0.479</td>
<td>1.371</td>
<td>1.133</td>
</tr>
<tr>
<td>8</td>
<td>2010-11</td>
<td>1.309</td>
<td>1.217</td>
<td>1.575</td>
<td>0.296</td>
<td>0.711</td>
<td>1.084</td>
</tr>
<tr>
<td>9</td>
<td>2011-12</td>
<td>1.267</td>
<td>1.261</td>
<td>0.588</td>
<td>0.267</td>
<td>0.423</td>
<td>1.022</td>
</tr>
<tr>
<td>10</td>
<td>2012-13</td>
<td>1.242</td>
<td>1.533</td>
<td>0.719</td>
<td>1.378</td>
<td>0.536</td>
<td>0.992</td>
</tr>
</tbody>
</table>

| Xi     | 1.552      | 1.440                | 1.543                       | 0.73                   | 0.73                    | 1.283                         |
|        |            |                     |                             |                       |                         |                               |
| \{Xi - \bar{X}\} | 0.339 | 0.227 | 0.329 | -0.483 | -0.483 | 0.070 |
| \{Xi - \bar{X}\}^2 | 0.115 | 0.051 | 0.108 | 0.233 | 0.233 | 0.004 |

\[
\bar{X} = \frac{\sum X_i}{n} = 1.213
\]

\[
\sum (X_i - \bar{X})^2 = 0.747
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2103.
Ambuja Cements Ltd.:-

Table 5.1 and Graph 5.1 reveal that the average current ratio of study period was more than the norms i.e. 1.552 times. The average current ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 3.059 times, in the year 2003-04 and the lowest ratio was 1.242 times in the year 2012-13.

In the year 2003-04 the ratio was 3.059 which is now decreased in 2004-05 and was 1.414 than it increased in 2005-06, 2006-07 respectively 1.477 and 1.675. In 2007-08 again it decreased to 1.357. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 1.587, 1.136, 1.309, 1.267 and 1.242.
Gujarat Sidhee Cement Ltd.:

Table 5.1 and Graph 5.2 reveal that the average current ratio of study period was more than the norms i.e. 1.441 times.

During the study period of this industry the highest ratio was 2.171 times, in the year 2003-04 and the lowest ratio was 1.007 times in the year 2006-07.

In the year 2003-04 the ratio was 2.171 which is now decreased in 2004-05 and was 1.771 then again decreased in 2005-06, 2006-07 respectively 1.28 and 1.007. In 2007-08 than it increased to 1.666. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 1.009, 1.487, 1.21, 1.261 and 1.533.
Sanghi Industries Ltd.:

Table 5.1 and Graph 5.3 reveal that the average current ratio of study period was more than the norms i.e. 1.543 times.

During the study period of this industry the highest ratio was 2.947 times, in the year 2008-09 and the lowest ratio was 0.588 times in the year 2011-12.

In the year 2003-04 the ratio was 0.57 which is now decreased in 2004-05 and was 0.557 than it increased in 2005-06, 2006-07, 2007-08, 2008-09 respectively 0.902 2.827, 2.94, and 2.947.In 2009-10 again it decreased to 1.805. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 1.575, 0.588 and 0.719.
Saurashtra Cement Ltd.:-

Table 5.1 and Graph 5.4 reveal that the average current ratio of study period was below than the norms i.e. 0.73 times. The average current ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 1.378 times, in the year 2012-13 and the lowest ratio was 0.266 times in the year 2011-12.

In the year 2003-04 the ratio was 0.536 which is now decreased in 2004-05 and was 0.423 than it increased in 2005-06, 2006-07 respectively 0.711 and 1.371. In 2007-08 again it decreased to 1.24. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.586, 0.479, 0.296, 0.266 and 1.378.
Shree Digvijay Cement Co. Ltd.:-

Table 5.1 and Graph 5.5 reveal that the average current ratio of study period was below than the norms i.e. 0.73 times. The average current ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 1.378 times, in the year 2003-04 and the lowest ratio was 0.266 times in the year 2005-06.

In the year 2003-04 the ratio was 1.378 which is now decreased in 2004-05 and 2005-06 was respectively 0.267, 0.266 than it increased in 2006-07, 2007-08, 2008-09, 2009-10 respectively 0.479, 0.586, 1.249 and 1.371. In 2010-11 again it decreased to 0.711. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 0.423, and 0.536.
Table 5.1 and Graph 5.6 reveal that the average current ratio of study period was more than the norms i.e. 1.284 times.

During the study period of this industry the highest ratio was 1.924 times, in the year 2003-04 and the lowest ratio was 0.99 times in the year 2012-13.

In the year 2003-04 the ratio was 1.924 which is now decreased in 2004-05, 2005-06, 2006-07 and 2007-08 was 1.906, 1.389, 1.271, 1.019 than it increased in 2008-09, 2009-10 respectively 1.093 and 1.133. In 2010-11 again it decreased to 1.084. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 1.022 and 0.99.
**NULL HYPOTHESIS (H₀) :-**

There will be no significant difference in current ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁) :-**

There will be significant difference in current ratio in selected cement industry.

**T-test :-**

\[
S.D. = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n - 1}}
\]

\[
S.D. = \sqrt{\frac{0.747}{6 - 1}}
\]

\[
S.D. = 0.386
\]

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{1.213 - 0}{0.386} \times \sqrt{6}
\]

\[
T = 7.68
\]

\[
T_{cal} = 7.68 \quad T_{tab} = 2.571 \quad \text{(at 5% level for D.F.=5)}
\]

\[
7.68 \quad > \quad 2.571
\]

\[
T_{cal} \quad > \quad T_{tab}
\]

T-test indicates that there was significant difference in the current ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.3 **QUICK RATIO:-**

The quick ratio is sometime called the “acid-test” ratio and is one of the best measures of liquidity.

The quick ratio is a much more conservative measure than the current ratio. It helps answer the question: “If all sales revenues should disappear could my business meet its current obligations with the readily convertible Rs. quick’ fund on hand?”

This ratio establishes a relationship between quick or liquid assets and current liabilities. An asset is liquid, if it can be converted into cash immediately or reasonably soon without a loss of value. Cash is the most liquid asset. Other assets which are book debts (debtor’s and bills receivables) and marketable securities (temporary quoted investments.) inventories are considered to be less liquid. Inventories normally require some time for realizing into cash; their value also has a tendency to fluctuate. The quick ratio of sampled trading house is found out by dividing quick assets by current liabilities.

The liquid is a more refined measure of the firm’s liquidity. This ratio establishes a relationship between quick or liquid assets and liquid liabilities. The liquid ratio is finding out by total of liquid liabilities. The formula of liquid ratio is as follow:

\[
\text{Quick\{Acid Test\} ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}
\]

Current assets include cash and book debt (debtor and bills receivable) only. Inventories are excluded. Because it takes time to sell finished goods and convert raw materials and work-in- progress into
finished goods. Prepaid expenses should also be excluded, because they cannot convert into cash.

The Acid-test or quick ratio measures the ability of a company to use its "near cash" or quick assets to immediately extinguish its current liabilities. Quick assets include those current assets that presumably can be quickly converted to cash at close to their book values. Such items are cash, stock investments, and accounts receivable. This ratio implies a liquidation approach and does not recognize the revolving nature of current assets and liabilities.

Generally a quick ratio of 1:1 is considered to represent a satisfactory current financial condition. But 0.8:1 is acceptable, any less and the business could suffer financial difficulties.

It is commonly held that liquid ratio should be 1:1 if this ratio is less than 1:1 i.e. liquid assets are less than liquid liability the financial position of the concern shall be deemed to be unsound and real cash will have to be provide for the payment of liabilities. On the other hand if the ratio is more than 1:1 it can be summarized that the financial condition of the enterprise is sound and good. The quick ratio of selected cement industries is being described in table no. 5.2.
### Table No. 5.2

**Quick Ratio (In Times) In Cement Industries.**

**Under Study from 2003-04 to 2012-13.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>2.835</td>
<td>0.963</td>
<td>0.192</td>
<td>0.295</td>
<td>0.109</td>
<td>0.929</td>
</tr>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>0.704</td>
<td>0.650</td>
<td>0.175</td>
<td>0.261</td>
<td>0.374</td>
<td>0.919</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>0.767</td>
<td>0.529</td>
<td>0.418</td>
<td>0.464</td>
<td>0.548</td>
<td>0.426</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>1.271</td>
<td>0.366</td>
<td>2.425</td>
<td>1.082</td>
<td>0.939</td>
<td>0.465</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>1.272</td>
<td>0.859</td>
<td>3.048</td>
<td>0.988</td>
<td>0.728</td>
<td>0.413</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>1.172</td>
<td>0.339</td>
<td>3.306</td>
<td>0.301</td>
<td>2.289</td>
<td>0.433</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>1.072</td>
<td>0.588</td>
<td>1.612</td>
<td>0.246</td>
<td>0.282</td>
<td>0.382</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>1.622</td>
<td>0.324</td>
<td>1.346</td>
<td>0.069</td>
<td>0.282</td>
<td>0.368</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>1.470</td>
<td>0.560</td>
<td>0.141</td>
<td>0.06</td>
<td>0.154</td>
<td>0.403</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>1.601</td>
<td>0.867</td>
<td>0.080</td>
<td>0.526</td>
<td>0.223</td>
<td>0.348</td>
</tr>
</tbody>
</table>

**Xi**

| Xi | 1.378 | 0.604 | 1.274 | 0.429 | 0.593 | 0.509 |

\[ \bar{X} = \frac{0.798}{10} \]

\[ \sum (X_i - \bar{X}) = 0.863 \]

**Source:** Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.2 and Graph 5.7 reveal that the average quick ratio of study period was more than the norms i.e. 1.378 times. The average quick ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 2.835 times, in the year 2003-04 and the lowest ratio was 0.704 times in the year 2004-05.

In the year 2003-04 the ratio was 2.835 which is now decreased in 2004-05 and was 0.704 than it increased in 2005-06, 2006-07, 2007-08 respectively 0.767,1.271 and1.272. In 2008-09 and 2009-10 again it decreased to respectively 1.172 and 1.072. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 1.622, 1.47 and 1.601.
Gujarat Sidhee Cement Ltd.:

Table 5.2 and Graph 5.8 reveal that the average quick ratio of study period was more below the norms i.e. 0.604 times.

During the study period of this industry the highest ratio was 0.963 times, in the year 2010-11 and the lowest ratio was 0.324 times in the year 2010-11.

In the year 2003-04 the ratio was 0.963 which is now decreased in 2004-05 and was 0.65 then again decreased in 2005-06, 2006-07 respectively 0.529 and 0.366. In 2007-08 than it increased to 0.859. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.339, 0.588, 0.324, 0.56 and 0.867.
Sanghi Industries Ltd.:

Table 5.2 and Graph 5.9 reveal that the average quick ratio of study period was below than the norms i.e. 0.080 times.

During the study period of this industry the highest ratio was 3.306 times, in the year 2008-09 and the lowest ratio was 0.08 times in the year 2012-13.

In the year 2003-04 the ratio was 0.192 which is now decreased in 2004-05 and was 0.175 than it increased in 2005-06, 2006-07, 2007-08, 2008-09 respectively 0.418, 2.425, 3.048, and 3.306. In 2009-10 again it decreased to 1.612. In 2010-11 to 2012-13 it decreased and the ratio was respectively 1.346, 0.141 and 0.08.
Saurashtra Cement Ltd.:-

Table 5.2 and Graph 5.10 reveal that the average quick ratio of study period was below than the norms i.e. 0.492 times. The average quick ratios of this industry were lowest among all selected industry.

During the study period the highest ratio was 1.082 times of this industry, in the year 2006-07 and the lowest ratio was 0.06 times in the year 2011-12.

In the year 2003-04 the ratio was 0.295 which is now decreased in 2004-05 was 0.261 than it increased in 2005-06, 2006-07 respectively 0.464 and 1.082. In 2007-08 again it decreased to 0.988. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.301, 0.246, 0.069, 0.06 and 0.526.
Table 5.2 and Graph 5.11 reveal that the average quick ratio of study period was below than the norms i.e. 0.593 times.

During the study period of this industry the highest ratio was 2.289 times, in the year 2008-09 and the lowest ratio was 0.109 times in the year 2003-04.

In the year 2003-04 the ratio was 0.109 which is now increased in 2004-05, 2005-06 and 2006-07 was respectively 0.374, 0.548 and 0.939, than it decreased in 2007-08 up to, 0.728 times. 2008-09 to 2012-13 it fluctuates and the ratio was respectively 2.298, 0.282, 0.282, 0.154 and 0.223.
Table 5.2 and Graph 5.12 reveal that the average quick ratio of study period was below than the norms i.e. 0.509 times.

During the study period of this industry the highest ratio was 0.929 times of this industry, in the year 2003-04 and the lowest ratio was 0.348 times in the year 2012-13.

In the year 2003-04 the ratio was 0.929 which is now decreased in 2004-05 and 2004-05 was 0.919 and 0.426 than it increased in 2006-07 up to 0.465. In 2007-08 again it decreased to 0.413. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.382, 0.368, 0.403 and 0.348.

**Ultratech Cement Ltd.**

Table 5.2 and Graph 5.12 reveal that the average quick ratio of study period was below than the norms i.e. 0.509 times.

During the study period of this industry the highest ratio was 0.929 times of this industry, in the year 2003-04 and the lowest ratio was 0.348 times in the year 2012-13.

In the year 2003-04 the ratio was 0.929 which is now decreased in 2004-05 and 2004-05 was 0.919 and 0.426 than it increased in 2006-07 up to 0.465. In 2007-08 again it decreased to 0.413. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.382, 0.368, 0.403 and 0.348.
- **NULL HYPOTHESIS (H₀):**

There will be no significant difference in quick ratio in selected cement industry.

- **ALTERNATIVE HYPOTHESIS (H₁):**

There will be significant difference in quick ratio in selected cement industry.

- **T-test:**

\[
S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n-1}}
\]

\[
S.D. = \sqrt{\frac{0.863}{6-1}}
\]

\[
S.D. = 0.415
\]

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{0.789 - 0}{0.415} \times \sqrt{6}
\]

\[
T = 4.65
\]

\[
T_{\text{cal}} = 4.65 \quad \text{and} \quad T_{\text{tab}} = 2.571 \quad (\text{at } 5\% \text{ level for D.F.}=5)
\]

\[
4.65 \quad > \quad 2.571
\]

\[
T_{\text{cal}} \quad > \quad T_{\text{tab}}
\]

T-test indicates that there was significant difference in the quick ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.4 LIQUIDITY RATIO:-

A class of financial metrics that is used to determine a company's ability to pay off its short-terms debts obligations. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short-term debts.

Common liquidity ratios include the current ratio, the quick ratio and the operating cash flow ratio. Different analysts consider different assets to be relevant in calculating liquidity. Some analysts will calculate only the sum of cash and equivalents divided by current liabilities because they feel that they are the most liquid assets, and would be the most likely to be used to cover short-term debts in an emergency.

A company's ability to turn short-term assets into cash to cover debts is of the utmost importance when Creditors’ are seeking payment. Bankruptcy analysts and mortgage originators frequently use the liquidity ratios to determine whether a company will be able to continue as a going concern.

Testing a company's liquidity is a necessary step in analyzing a company. Read Liquidity Measurement Ratios to further improve your understanding of these ratios.

Liquidity ratios are a set of ratios or figures that measure a company’s ability to pay off its short-term debt obligations. This is done by measuring a company’s liquid assets (including those that might easily be converted into cash) against its short-term liabilities.

There are a number of different liquidity ratios, which each measure slightly different types of assets when calculating the ratio. More conservative measures will exclude assets that need to be converted into cash.\(^5\)
In general, the greater the coverage of liquid assets to short-term liabilities, the more likely it is that a business will be able to pay debts as they become due while still funding ongoing operations. On the other hand, a company with a low liquidity ratio might have difficulty meeting obligations while funding vital ongoing business operations.

Liquidity ratios are sometimes requested by banks when they are evaluating a loan application. If you take out a loan, the lender may require you to maintain a certain minimum liquidity ratio, as part of the loan agreement. For that reason, steps to improve your liquidity ratios are sometimes necessary.

There are three fundamental liquidity ratios that can provide insight into short-term liquidity: current, quick, and cash ratios. These work as follows:

This is a way of testing liquidity by deriving the proportion of assets available to cover current liabilities, as follows:

\[
\text{Liquid ratio} = \frac{\text{Liquid assets}}{\text{Liquid liabilities}}
\]

The calculation of a company's available cash and marketable securities against outstanding debt. The ratio measures the company's ability to pay its short-term debts. A high ratio indicates a company with a low risk of default.

As stated earlier, liquidity ratios measure a company’s ability to pay off its short-term debt using assets that can be easily liquidated. In this case, the current ratio measures a company’s current assets against its current liabilities. Generally, higher numbers are better, implying that the
The liquid ratio is a more refined measure of the firm`s liquidity. This ratio establishes a relationship between quick or liquid assets and liquid liabilities. The liquid ratio is finding out by dividing the total of the liquid assets by total of liquid liabilities.

Liquid assets include cash and book beat (debtor’s and bills receivable) only. Inventories are excluded. Inventories are excluded. Because it takes time to sell finished goods and convert raw materials and work-in-progress into finished goods. Prepaid expenses should also be excluded, because they cannot convert into cash. Liquid liability means total of current liabilities minus bank overdraft.

It is commonly held that liquid ratio should be 1:1 if this ratio is less than 1:1 i.e. liquid assets are less than liquid liability the financial position of the concern shall be deemed to be unsound and real cash will have to be provide for the payment of liabilities. On the other hand if the ratio is more than 1:1 it can be summarized that the financial condition of the enterprise is sound and good. The liquidity ratio of selected cement industries is being described in table no. 5.3.
### Table No. 5.3
Liquidity Ratio (In Times) In Cement Industries.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>3.075</td>
<td>1.736</td>
<td>0.289</td>
<td>0.138</td>
<td>0.218</td>
<td>1.417</td>
</tr>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>0.858</td>
<td>1.622</td>
<td>0.319</td>
<td>0.154</td>
<td>0.533</td>
<td>1.333</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>0.925</td>
<td>1.721</td>
<td>0.583</td>
<td>1.393</td>
<td>0.665</td>
<td>0.760</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>1.439</td>
<td>1.214</td>
<td>2.494</td>
<td>1.642</td>
<td>1.196</td>
<td>0.714</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>1.488</td>
<td>1.396</td>
<td>3.166</td>
<td>3.344</td>
<td>0.918</td>
<td>0.601</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>1.396</td>
<td>1.488</td>
<td>3.344</td>
<td>3.166</td>
<td>2.611</td>
<td>0.605</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>1.214</td>
<td>1.439</td>
<td>1.642</td>
<td>2.494</td>
<td>0.598</td>
<td>0.571</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>1.721</td>
<td>0.925</td>
<td>1.393</td>
<td>0.583</td>
<td>0.326</td>
<td>0.577</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>1.622</td>
<td>0.858</td>
<td>0.154</td>
<td>0.319</td>
<td>0.224</td>
<td>0.631</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>1.736</td>
<td>3.075</td>
<td>0.138</td>
<td>0.289</td>
<td>0.304</td>
<td>0.617</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\sum (X_i - \bar{X})^2 & = 0.653 \\
\sum (X_i - \bar{X}) & = 1.224 \\
\bar{X} & = 0.783 \\
\end{align*}
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.3 and Graph 5.13 reveal that the average liquidity ratio of study period was more than the norms i.e. 1.547 times. The average liquidity ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 3.075 times, in the year 2003-04 and the lowest ratio was 0.858 times in the year 2004-05.

In the year 2003-04 the ratio was 3.075 which is now decreased in 2004-05 was 0.858 than it increased in 2005-06, 2006-07, 2007-08 respectively 0.925, 1.439 and 1.488. In 2008-09 again it decreased to 1.396. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 1.214, 1.721, 1.622 and 1.736.
Gujarat Sidhee Cement Ltd.:-

Table 5.3 and Graph 5.14 reveal that the average liquidity ratio of study period was more than the norms i.e. 1.547 times.

During the study period of this industry the highest ratio was 3.075 times, in the year 2012-13 and the lowest ratio was 0.858 times in the year 2011-12.

In the year 2003-04 the ratio was 1.736 which is now decreased in 2004-05 and was 1.622 then again increased in 2005-06, up to 1.721. In 2006-07 than it decreased to 1.214. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 1.396, 1.488, 1.439, 0.925, 0.858 and 3.075.
**Sanghi Industries Ltd. :-**

Table 5.3 and Graph 5.15 reveal that the average liquidity ratio of study period was more than the norms i.e. 1.352 times.

During the study period of this industry the highest ratio was 3.344 times, in the year 2008-09 and the lowest ratio was 0.138 times in the year 2012-13.

In the year 2003-04 the ratio was 0.289 which is now increased in 2004-05, 2005-06, 2006-07, 2007-08, 2008-09 respectively 0.319, 0.583, 2.494, 3.166, and 3.344. In 2009-10 again it decreased to 1.642. In 2010-11 to 2012-13 it decreased the ratio was respectively 1.393, 0.154 and 0.138.
**Saurashtra Cement Ltd.:**

Table 5.3 and Graph 5.16 reveal that the average liquidity ratio of study period was below than the norms i.e. 3.344 times. The average liquidity ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 3.344 times, in the year 2012-13 and the lowest ratio was 0.138 times in the year 2003-04.

In the year 2003-04 the ratio was 0.138 which is now increased in 2004-05 and was 0.154 than it increased in 2005-06, 2006-07, 2007-08 respectively 1.393, 1.642 and 3.344. In 2008-09 to 2012-13 it continues decline ratio was respectively 3.166, 2.494, 0.538, 0.319 and 0.289.
Shree Digvijay Cement Co. Ltd.:-

Table 5.3 and Graph 5.17 reveal that the average liquidity ratio of study period was below than the norms i.e. 0.759 times. The average liquidity ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 2.611 times, in the year 2008-09 and the lowest ratio was 0.218 times in the year 2003-04.

In the year 2003-04 the ratio was 0.218 which is now increased in 2004-05, 2005-06 and 2006-07 was respectively 0.533, 0.665 and 1.196, than it decreased in 2007-08 up to 0.918, than it increased in 2008-09 2.611. In 2009-10 again it decreased to 0.598. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 0.326, 0.224 and 0.304.
Ultradech Cement Ltd.:--

Table 5.3 and Graph 5.18 reveal that the average liquidity ratio of study period was more than the norms i.e. 0.783 times.

During the study period of this industry the highest ratio was 1.417 times, in the year 2003-04 and the lowest ratio was 0.571 times in the year 2009-10.

In the year 2003-04 the ratio was 1.417 which is continues decline in 2004-05, 2005-06, 2006-07, 2007-08 and 2009-10 respectively 1.333, 0.76, 0.714, 0.601 than it increased in 2008-09, 2009-10 respectively 1.093 and 1.133. In 2010-11 again it decreased to 1.084. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 1.022 and 0.99.
**NULL HYPOTHESIS (H₀) :-**

There will be no significant difference in liquidity ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁) :-**

There will be significant difference in liquidity ratio in selected cement industry.

**T-test :-**

\[ S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n-1}} \]

\[ S.D. = \sqrt{\frac{0.653}{6-1}} \]

\[ S.D. = 0.361 \]

\[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]

\[ T = \frac{1.224 - 0}{0.361} \times \sqrt{6} \]

\[ T = 8.29 \]

\[ T_{cal} = 8.29 \quad T_{tab} = 2.571 \quad \text{(at 5% level for D.F.=5)} \]

\[ 8.29 \quad > \quad 2.571 \]

\[ T_{cal} \quad > \quad T_{tab} \]

T-test indicates that there was significant difference in the liquidity ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.5 CASH RATIO / ABSOLUTE LIQUIDITY RATIO:

The ratio of a company's total cash and cash equivalents to its current liabilities. The cash ratio is most commonly used as a measure of company liquidity. It can therefore determine if, and how quickly, the company can repay its short-term debt. A strong cash ratio is useful to Creditors’ when deciding how much debt, if any, they would be willing to extend to the asking party.

The cash ratio is generally a more conservative look at a company's ability to cover its liabilities than many other liquidity ratios. This is due to the fact that inventory and accounts receivable are left out of the equation. Since these two accounts are a large part of many companies, this ratio should not be used in determining company value, but simply as one factor in determining liquidity.

The cash ratio is the most stringent and conservative of the three short-term liquidity ratios (current, quick and cash). It only looks at the most liquid short-term assets of the company, which are those that can be most easily used to pay off current obligations. It also ignores inventory and receivables, as there are no assurances that these two accounts can be converted to cash in a timely matter to meet current liabilities.

Very few companies will have enough cash and cash equivalents to fully cover current liabilities, which isn’t necessarily a bad thing, so don’t focus on this ratio being above 1:1. A cash ratio of 0.5:1 or higher is preferred.

The cash ratio is seldom used in financial reporting or by analysts in the fundamental analysis of a company. It is not realistic for a company to purposefully maintain high levels of cash assets to cover current liabilities. The reason being that it's often seen as poor asset
utilization for a company to hold large amounts of cash on its balance sheet, as this money could be returned to shareholders or used elsewhere to generate higher returns. While providing an interesting liquidity perspective, the usefulness of this ratio is limited.

The cash ratio measures the absolute liquidity of the business. This ratio considers only the absolute liquidity available with the firm. This ratio calculated as:

\[
\text{Cash ratio} = \frac{\text{Cash} + \text{Marketable securities}}{\text{Current liabilities}}
\]

Cash ratio is the most conservative look at a company's liquidity since is taking in the consideration only the cash and cash equivalents.

Cash ratio is used by Creditors’ when deciding how much credit, if any, they would be willing to extend to the company.

A subsequent innovation in ratio analysis, the absolute liquidity ratio eliminates any unknowns surrounding receivables.

The absolute liquidity ratio only tests short-term liquidity in terms of cash and marketable securities.

Cash ratio is not as popular in financial analysis as current or quick ratios, its usefulness is limited. There is no common norm for cash ratio. In some countries a cash ratio of not less than 0.2 is considered as acceptable. But ratio that is too high may show poor asset utilization for a company holding large amounts of cash on its balance sheet. The cash ratio of selected cement industries is being described in table no. 5.4.
Table No. 5.4  
Cash Ratio (In Times) In Cement Industries.  

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>1.559</td>
<td>0.725</td>
<td>0.081</td>
<td>0.530</td>
<td>0.212</td>
<td>0.306</td>
</tr>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>1.457</td>
<td>0.475</td>
<td>0.040</td>
<td>0.067</td>
<td>0.142</td>
<td>0.283</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>1.369</td>
<td>0.516</td>
<td>0.061</td>
<td>0.108</td>
<td>0.120</td>
<td>0.259</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>0.968</td>
<td>0.676</td>
<td>0.062</td>
<td>0.187</td>
<td>0.359</td>
<td>0.263</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>1.073</td>
<td>0.304</td>
<td>0.997</td>
<td>0.195</td>
<td>2.353</td>
<td>0.265</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>1.166</td>
<td>0.867</td>
<td>1.248</td>
<td>0.776</td>
<td>0.592</td>
<td>0.275</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>0.876</td>
<td>0.351</td>
<td>1.215</td>
<td>0.864</td>
<td>0.308</td>
<td>0.370</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>0.458</td>
<td>0.537</td>
<td>0.212</td>
<td>0.225</td>
<td>0.160</td>
<td>0.453</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>0.404</td>
<td>0.966</td>
<td>0.173</td>
<td>0.198</td>
<td>0.185</td>
<td>0.549</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>0.400</td>
<td>1.16</td>
<td>0.159</td>
<td>0.214</td>
<td>0.123</td>
<td>0.602</td>
</tr>
</tbody>
</table>

\[
\bar{X} = \frac{0.535}{10} = 0.0535
\]

\[
\sum (X_i - \bar{X}) = 0.294
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.4 and Graph 5.19 reveal that the average cash ratio of study period was more than the norms i.e. 0.937 times. The average cash ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 1.559 times, in the year 2003-04 and the lowest ratio was 0.4 times in the year 2012-13.

In the year 2003-04 the ratio was 1.559 which is continues decaling in 2004-05 to 2006-07 respectively 1.457, 1.369, 0.968, than it increased in 2007-08, 2008-09 respectively 1.073 and 1.166. In 2007-08 again it decreased to 0.876. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 0.458, 0.404 and 0.4.
**Gujarat Sidhee Cement Ltd.:**

Table 5.4 and Graph 5.20 reveal that the average cash ratio of study period was more than the norms i.e. 0.65 times.

During the study period of this industry the highest ratio was 1.16 times, in the year 2012-13 and the lowest ratio was 0.304 times in the year 2007-08.

In the year 2003-04 the ratio was 0.725 which is now decreased in 2004-05 and was 0.475 then it increased in 2005-06, 2006-07 respectively 0.516 and 0.676. In 2007-08 than it decreased to 0.304. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.867, 0.351, 0.537, 0.966 and 1.16.
Sanghi Industries Ltd.: -

Table 5.4 and Graph 5.21 reveal that the average cash ratio of study period was more than the norms i.e. 0.425 times.

During the study period of this industry the highest ratio was 1.248 times, in the year 2008-09 and the lowest ratio was 0.04 times in the year 2004-05.

In the year 2003-04 the ratio was 0.081 which is now decreased in 2004-05 and was 0.04 than it increased in 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10 respectively 0.061 0.062, 0.997, 1.248 and 1.215. In 2010-11 again it decreased to 0.21. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 0.173 and 0.159.
Saurashtra Cement Ltd.:-

Table 5.4 and Graph 5.22 reveal that the average cash ratio of study period was below than the norms i.e. 0.336 times. The average cash ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 0.864 times, in the year 2009-10 and the lowest ratio was 0.067 times in the year 2004-05.

In the year 2003-04 the ratio was 0.53 which is now decreased in 2004-05 and was 0.067 than it increased in 2005-06, 2006-07 respectively 0.108 and 0.187. In 2007-08 again it decreased to 0.195. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.776, 0.864, 0.225, 0.198 and 0.214.
Shree Digvijay Cement Co. Ltd.:-

Table 5.4 and Graph 5.23 reveal that the average cash ratio of study period was bellow than the norms i.e. 0.455 times.

During the study period the highest ratio was 2.353 times of this industry, in the year 2003-04 and the lowest ratio was 0.12 times in the year 2005-06.

In the year 2003-04 the ratio was 0.212 which is now decreased in 2004-05 and 2005-06 was respectively 0.142, 0.12 than it increased in 2006-07, 2007-08, 2008-09 respectively 0.359, 2.353 and 0.592. In 2009-10 again it decreased to 0.16. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 0.308, 0.185 and 0.123.
Table 5.4 and Graph 5.24 reveal that the average cash ratio of study period was below than the norms i.e. 0.362 times.

During the study period of this industry the highest ratio was 0.602 in the year 2003-04 and the lowest ratio was 0.259 times in the year 2005-06.

In the year 2003-04 the ratio was 0.306 which is now decreased in 2004-05, and 2005-06, was 0.283 and 0.259 than it increased continually 2006-07 to 2012-13 respectively 0.263, 0.265, 0.275, 0.37, 0.453, 0.549 and 0.602.
NULL HYPOTHESIS (H₀) :-
There will be no significant difference in cash ratio in selected cement industry.

ALTERNATIVE HYPOTHESIS (H₁) :-
There will be significant difference in cash ratio in selected cement industry.

T-test :-

\[ S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n-1}} \]

\[ S.D. = \sqrt{\frac{0.294}{6-1}} \]

\[ S.D. = 0.243 \]

\[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]

\[ T = \frac{0.535 - 0}{0.243} \times \sqrt{6} \]

\[ T = 5.40 \]

\[ T_{cal} = 5.40 \] \[ T_{tab} = 2.571 \] (at 5% level for D.F.=5)

\[ 5.40 > 2.571 \]

\[ T_{cal} > T_{tab} \]

T-test indicates that there was significant difference in the cash ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.6 **INTERVAL MEASURE:-**

Interval measure assesses sampled cement industries ability to meet its regular expenses. It relates liquid assets to average daily operating cash out flows. The daily operating expenses will be equal to cost of goods sold plus selling, administrative and general expenses less depreciation (and other non-cash expenditures) dividend by number of day in the year.

\[
\text{Interval measure} = \frac{\text{Current assets } - \text{ inventory}}{\text{Average daily operating expenses}}
\]

The ratio of interval measure of selected cement industries is being described in table no. 5.5.
Table No. 5.5
Interval Measure (In Times) In Cement Industries.

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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>5.868</td>
<td>2.791</td>
<td>1.108</td>
<td>2.204</td>
<td>1.065</td>
<td>1.920</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>2.023</td>
<td>1.566</td>
<td>1.988</td>
<td>2.673</td>
<td>1.113</td>
<td>0.715</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>2.064</td>
<td>0.733</td>
<td>4.17</td>
<td>5.615</td>
<td>1.358</td>
<td>0.915</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>2.258</td>
<td>2.560</td>
<td>5.126</td>
<td>3.961</td>
<td>0.994</td>
<td>1.292</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>2.498</td>
<td>1.793</td>
<td>7.935</td>
<td>0.515</td>
<td>2.405</td>
<td>0.976</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>1.371</td>
<td>2.880</td>
<td>4.544</td>
<td>0.717</td>
<td>1.931</td>
<td>0.637</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>3.818</td>
<td>4.570</td>
<td>6.140</td>
<td>1.815</td>
<td>0.993</td>
<td>0.868</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>4.504</td>
<td>4.299</td>
<td>1.183</td>
<td>1.100</td>
<td>0.800</td>
<td>0.845</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>4.130</td>
<td>3.738</td>
<td>1.473</td>
<td>1.269</td>
<td>0.603</td>
<td>0.784</td>
</tr>
</tbody>
</table>

\[
\bar{X} = \frac{\sum X_i}{n} = 3.061 + 2.817 + 3.724 + 2.177 + 1.361 + 1.016 = 2.359
\]

\[
\sum (X_i - \bar{X})^2 = 0.701^2 + 0.457^2 + 1.365^2 + (-0.182)^2 + (-0.998)^2 + (-1.343)^2 = 5.400
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:

Table 5.5 and Graph 5.25 reveal that the average interval measure ratio of study period was more than the norms i.e. 3.061 times.

During the study period of this industry the highest ratio was 5.868 times, in the year 2003-04 and the lowest ratio was 1.371 times in the year 2012-13.

In the year 2003-04 the ratio was 5.868 which are now decreased in 2004-05 and 2005-06 was 2.074 and 2.023, than it increased in 2006-07, 2006-07 and 2008-09 respectively 2.064, 2.258 and 2.498. In 2009-10 again it decreased to 1.371. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 3.818, 4.504 and 4.13.
Gujarat Sidhee Cement Ltd.:-

Table 5.5 and Graph 5.26 reveal that the average interval measure ratio of study period was more than the norms i.e. 2.817 times.

During the study period of this industry the highest ratio was 4.570 times, in the year 2003-04 and the lowest ratio was 0.733 times in the year 2006-07.

In the year 2003-04 the ratio was 2.791 which is now increased in 2004-05 and was 3.241 then it decreased in 2005-06, 2006-07 respectively 1.566 and 0.733. In 2007-08 than it increased to 2.56. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 1.793, 2.88, 4.57, 4.299 and 3.738.
Sanghi Industries Ltd. :-

Table 5.5 and Graph 5.27 reveal that the average interval measure ratio of study period was more than the norms i.e. 3.724 times. The average interval measure ratios of this industry were highest among all selected industry.

During the study period the highest ratio was 7.935 times, in the year 2008-09 and the lowest ratio was 1.108 times in the year 2003-04.

In the year 2003-04 the ratio was 1.108 which is now increased in 2004-05 and was 3.577 than it decreased in 2005-06 up to 1.988. In 2006-07 again it increased to 4.17. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 5.126, 7.935, 4.544, 6.14, 1.183 and 1.473.
Saurashtra Cement Ltd.:-

Table 5.5 and Graph 5.28 reveal that the average interval measure ratio of study period was below than the norms i.e. 2.177 times.

During the study period of this industry the highest ratio was 5.615 times of this industry, in the year 2012-13 and the lowest ratio was 0.515 times in the year 2008-09.

In the year 2003-04 the ratio was 2.204 which is now decreased in 2004-05 and was 1.896 than it increased in 2005-06 up to 5.615. In 2006-07 again it decreased to 3.961. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 0.515, 0.717, 1.815, 1.1 and 1.269.
Shree Digvijay Cement Co. Ltd.:-

Table 5.5 and Graph 5.29 reveal that the average interval measure ratio of study period was more than the norms i.e. 1.361 times.

During the study period of this industry the highest ratio was 2.405, in the year 2004-05 and the lowest ratio was 0.603 times in the year 2012-13.

In the year 2003-04 the ratio was 1.065 which is now increased in 2004-05 up to 2.346 than it decreased in 2005-06 to 1.113. In 2006-07 again it increased to 1.358. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 0.994, 2.405, 1.931, 0.993, 0.8 and 0.603.
Ultradech Cement Ltd.:-

Table 5.5 and Graph 5.30 reveal that the average interval measure ratio of study period was more than the norms i.e. 1.016 times.

During the study period of this industry the highest ratio was 1.92 times, in the year 2003-04 and the lowest ratio was 0.637 times in the year 2009-10.

In the year 2003-04 the ratio was 1.92 which is now decreased in 2004-05 and 2005-06 was 1.206 and 0.715 than it increased in 2006-07, 2007-08 respectively 0.915 and 1.292. In 2008-09 again it decreased to 0.976. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.637, 0.868, 0.845 and 0.784.
NULL HYPOTHESIS (H_0) :-

There will be no significant difference in interval measure Ratio in selected cement industry.

ALTERNATIVE HYPOTHESIS (H_1) :-

There will be significant difference in interval measure Ratio in selected cement industry.

T-test :-

\[ S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n - 1}} \]

\[ S.D. = \sqrt{\frac{5.400}{6-1}} \]

\[ S.D. = 1.039 \]

\[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]

\[ T = \frac{0.359 - 0}{1.039} \times \sqrt{6} \]

\[ T = 5.561 \]

\[ T_{\text{cal}} = 5.561 \quad T_{\text{tab}} = 2.571 \quad (\text{at } 5\% \text{ level for D.F.}=5) \]

\[ 5.561 > 2.571 \]

T-cal > T-tab

T-test indicates that there was significant difference in the interval measure in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.7 NET WORKING CAPITAL RATIO:-

Net working capital is more a measure of cash flow than a ratio. The result of this calculation must be a positive number. It is calculated as shown below:

\[
\text{Net working capital} = \text{Current assets} - \text{Current liabilities} \\
\text{(excluding short term bank borrowing)}
\]

Bank look at net working capital over time to determine a company’s ability to weather financial crises. Loans are often tied to minimum working capital requirements.

The difference between current assets and current liabilities excluding short-term borrowing is called net working capital (NWC) or net current assets (NCA). Net working capital is used as a measure of Trading Houses liquidity. It is considered that, between two firms, the one having the larger NWC has the greater ability to meet its current obligations.\(^6\)

\[
\text{NWC ratio} = \frac{\text{Net working capital}}{\text{Net assets}}
\]

The net working capital ratio of selected cement industries is being described in table no. 5.6.
### Table No. 5.6


*Under Study from 2003-04 to 2012-13.*

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003 -2004</td>
<td>0.184</td>
<td>0.177</td>
<td>-0.031</td>
<td>-0.208</td>
<td>-4.194</td>
<td>0.138</td>
</tr>
<tr>
<td>2</td>
<td>2004 -2005</td>
<td>0.065</td>
<td>0.158</td>
<td>-0.035</td>
<td>-0.364</td>
<td>-0.080</td>
<td>0.162</td>
</tr>
<tr>
<td>3</td>
<td>2005 -2006</td>
<td>0.089</td>
<td>0.094</td>
<td>-0.004</td>
<td>-0.120</td>
<td>-0.032</td>
<td>0.102</td>
</tr>
<tr>
<td>4</td>
<td>2006 -2007</td>
<td>0.147</td>
<td>0.016</td>
<td>0.096</td>
<td>0.160</td>
<td>0.358</td>
<td>0.066</td>
</tr>
<tr>
<td>5</td>
<td>2007 -2008</td>
<td>0.182</td>
<td>0.218</td>
<td>0.133</td>
<td>0.155</td>
<td>0.276</td>
<td>0.033</td>
</tr>
<tr>
<td>6</td>
<td>2008 -2009</td>
<td>0.224</td>
<td>0.038</td>
<td>0.196</td>
<td>-0.168</td>
<td>0.479</td>
<td>0.043</td>
</tr>
<tr>
<td>7</td>
<td>2009 -2010</td>
<td>0.137</td>
<td>0.398</td>
<td>0.101</td>
<td>-0.304</td>
<td>0.133</td>
<td>0.053</td>
</tr>
<tr>
<td>8</td>
<td>2010 -2011</td>
<td>0.248</td>
<td>0.164</td>
<td>0.095</td>
<td>-1.291</td>
<td>0.216</td>
<td>0.049</td>
</tr>
<tr>
<td>9</td>
<td>2011 -2012</td>
<td>0.234</td>
<td>0.206</td>
<td>-0.068</td>
<td>-2.340</td>
<td>-0.055</td>
<td>0.046</td>
</tr>
<tr>
<td>10</td>
<td>2012 -2013</td>
<td>0.242</td>
<td>0.422</td>
<td>-0.051</td>
<td>0.110</td>
<td>0.096</td>
<td>0.043</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\sum (X_i - \bar{X}) &= 0.334 \\
\sum (X_i - \bar{X})^2 &= 0.039
\end{align*}
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.6 and Graph 5.31 reveal that the average net working capital ratio of study period was i.e. 0.175 times.

During the study period of this industry the highest ratio was 0.248 times, in the year 2010-11 and the lowest ratio was 0.065 times in the year 2004-05.

In the year 2003-04 the ratio was 0.184 which is now decreased in 2004-05 and was 0.065 than it increased in 2005-06, 2006-07, 2007-08, and 2008-09 respectively 0.089, 0.147, 0.182 and 0.224. In 2009-10 again it decreased to 0.137. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 0.248, .234 and 0.242.

It can be concluded that the working capital management of this industry was satisfactory.
Gujarat Sidhee Cement Ltd.:-

Table 5.6 and Graph 5.32 reveal that the average net working ratio of study period was i.e. 0.189 times. The average net working ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 0.422 times of this industry, in the year 2012-13 and the lowest ratio was 0.016 times in the year 2006-07.

In the year 2003-04 the ratio was 0.177 which is now decreased in 2004-05 and was 0.158 then again decreased in 2005-06, 2006-07 respectively 0.094 and 0.016. In 2007-08 than it increased to 0.218. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.038, 0.0398, 0.164, 0.206 and 0.422.

The ratios of this industry indicate a highly satisfactory position in utilization of working capital management.
Table 5.6 and Graph 5.33 reveal that the average net working ratio of study period was 0.043 times.

During the study period of this industry the highest ratio was 0.196 times, in the year 2008-09 and the lowest ratio was -0.068 times in the year 2011-12.

In the year 2003-04 the ratio was -0.031 which is now decreased in 2004-05 and was -0.035 than it increased in 2005-06, 2006-07, 2007-08, 2008-09 respectively -0.004, 0.096, 0.133, and 0.196. In 2009-10 again it decreased to 0.101. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 0.095, -0.068 and -0.051.

It can be concluded that the working capital management of this industry was satisfactory.
Table 5.6 and Graph 5.34 reveal that the average net working ratio of study period was bellow than the norms i.e. -0.437 times. The average net working ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 0.16 times of this industry, in the year 2003-04 and the lowest ratio was -2.34 times in the year 2011-12.

In the year 2003-04 the ratio was -0.208 which is now decreased in 2004-05 and was -0.364 than it increased in 2005-06, 2006-07, 2007-08 respectively -0.12, 0.16 and 0.155. In 2008-09 again it decreased to -0.168. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively -0.304,-1.291, -0.234 and 0.11.

It can be concluded that the working capital management of this industry was not satisfactory.
Table 5.6 and Graph 5.35 reveal that the average net working ratio of study period was below than the norms i.e. -0.280 times.

During the study period of this industry the highest ratio was 0.479 times of this industry, in the year 2008-09 and the lowest ratio was -4.194 times in the year 2003-04.

In the year 2003-04 the ratio was -4.194 which is now increased in 2004-05, 2005-06 and 2006-07 was respectively -0.08, -0.032 and 0.358, than it decreased in 2007-08 up to 0.276. In 2008-09 again it increased to 0.479. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.133, 0.216, -0.055 and 0.096.

It can be concluded that the working capital management of this industry was satisfactory.
Ultratech Cement Ltd.:--

Table 5.6 and Graph 5.36 reveal that the average net working ratio of study period was. i.e.0.074 times.

During the study period of this industry the highest ratio was 0.162 times of this industry, in the year 2004-05 and the lowest ratio was 0.033 times in the year 2007-08.

In the year 2003-04 the ratio was 0.138 which is now increased in 2004-05 and was 0.162, than it decreased in 2005-06, 2007-08 respectively 0.102, 0.066, and 0.033. In 2010-11 again it increased to 0.043. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.053, 0.049, 0.046 and 0.043.

It can be concluded that the working capital management of this industry was satisfactory.
**NULL HYPOTHESIS (H₀):**

There will be no significant difference in net working capital ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁):**

There will be significant difference in net working capital ratio in selected cement industry.

**T-test:**

\[
S.D. = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n - 1}}
\]

\[
S.D. = \sqrt{\frac{0.334}{6 - 1}}
\]

**S.D. = 0.258**

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{-0.0392 - 0}{0.258} \times \sqrt{6}
\]

**T = -0.37**

\[
T_{cal} = -0.37 \quad T_{tab} = 2.571 \quad (at \ 5\% \ level \ for \ D.F.=5)
\]

- 0.37 < 2.571

\[
T_{cal} \quad < \quad T_{tab}
\]

T-test indicates that there was no significant difference in the net working capital ratio in selected cement industries. Because the calculate value of T was lower than the tabulate value. So, alternative hypothesis has been rejected and null hypothesis has been accepted.
5.8  INVENTORY (STOCK) TURNOVER RATIO:-

This ratio also known as stock turnover ratio establishes the relationship between the cost of goods sold during the year and average inventory held during the year. It is calculated as follows:

\[
\text{Average inventory(stock)} = \frac{\text{Opening stock} + \text{Closing stock}}{2}
\]

\[
\text{Inventory(stock) turnover ratio} = \frac{\text{Sales}}{\text{Average inventory}}
\]

Very often inventory turnover is calculated with reference to cost of sales instead of sales in that case inventory turnover will be calculated as above.

This ratio indicates that how fast inventory is used or soled. A high ratio is good from the view point of liquidity and vice versa. A low ratio would indicate that inventory is not used/soled/lost and stays in a shelf or in the cement industries for a long time. Generally 10 to 12 times inventory (stock) turnover ratio good for any industries.

The inventory turnover ratio selected cement industries are being described in table no. 5.7.
### Table No. 5.7

**Inventory (Stock) Turnover Ratio (In Times) In Cement Industries.**

*Under Study from 2003-04 to 2012-13.*

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>12.92</td>
<td>15.62</td>
<td>17.86</td>
<td>12.86</td>
<td>7.94</td>
<td>12.05</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>9.31</td>
<td>12.74</td>
<td>15.51</td>
<td>13.74</td>
<td>8.34</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>9.52</td>
<td>11.02</td>
<td>10.29</td>
<td>13.84</td>
<td>8.67</td>
<td>10.21</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>10.42</td>
<td>8.12</td>
<td>6.83</td>
<td>11.31</td>
<td>5.26</td>
<td>10.77</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>11.52</td>
<td>8.2</td>
<td>7.08</td>
<td>9.86</td>
<td>7.12</td>
<td>10.42</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\text{Xi} & = 10.669 \\
\{\text{Xi} - \bar{X}\} & = 0.338 \\
\{\text{Xi} - \bar{X}\}^2 & = 0.114 \\
\end{align*}
\]

\[
\begin{align*}
\text{Xi} & = 10.838 \\
\{\text{Xi} - \bar{X}\} & = 0.507 \\
\{\text{Xi} - \bar{X}\}^2 & = 0.257 \\
\end{align*}
\]

\[
\begin{align*}
\text{Xi} & = 10.286 \\
\{\text{Xi} - \bar{X}\} & = -0.044 \\
\{\text{Xi} - \bar{X}\}^2 & = 0.001 \\
\end{align*}
\]

\[
\begin{align*}
\text{Xi} & = 10.83 \\
\{\text{Xi} - \bar{X}\} & = 0.499 \\
\{\text{Xi} - \bar{X}\}^2 & = 0.249 \\
\end{align*}
\]

\[
\begin{align*}
\text{Xi} & = 7.979 \\
\{\text{Xi} - \bar{X}\} & = -2.351 \\
\{\text{Xi} - \bar{X}\}^2 & = 5.527 \\
\end{align*}
\]

\[
\begin{align*}
\text{Xi} & = 11.379 \\
\{\text{Xi} - \bar{X}\} & = 1.048 \\
\{\text{Xi} - \bar{X}\}^2 & = 1.099 \\
\end{align*}
\]

\[
\begin{align*}
\text{Xi} & = 10.330 \\
\{\text{Xi} - \bar{X}\} & = -2.351 \\
\{\text{Xi} - \bar{X}\}^2 & = 5.527 \\
\end{align*}
\]

\[
\begin{align*}
\sum\{\text{Xi} - \bar{X}\}^2 & = 7.252 \\
\end{align*}
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.7 and Graph 5.37 reveal that the average inventory turnover ratio of study period was near the norms i.e. 10.669 times.

During the study period of this industry the highest ratio was 12.92 times, in the year 2007-08 and the lowest ratio was 9.31 times in the year 2008-09.

In the year 2003-04 the ratio was 9.36 which is now increased in 2004-05 and was 9.62 than it again increased in 2005-06, 2006-07 and 2007-08 respectively 10.59 12.89 and 12.92. In 2008-09 again it decreased to 9.31. In 2009-10 to 2012-13 it increased continually the ratio was respectively 9.52, 10.42, 10.54 and 11.52.

For the company point of view the industry (stock) turnover ratio is very good because it is 10.669 times.
Table 5.7 and Graph 5.38 reveal that the average inventory turnover ratio of study period was near the norms i.e. 10.838 times.

During the study period of this industry the highest ratio was 15.62 times, in the year 2003-04 and the lowest ratio was 8.12 times in the year 2010-11.

In the year 2003-04 the ratio was 10.97 which is now decreased in 2004-05 and was 10.16 then again decreased in 2005-06 up to 9.4. In 2006-07 than it increased to 12.68. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 15.62, 12.74, 11.02, 8.12, 9.47 and 8.2.

For the company point of view the industry (stock) turnover ratio is very good because it is 10.838 times.
Table 5.7 and Graph 5.39 reveal that the average inventory turnover ratio of study period was near the norms i.e. 10.286 times.

During the study period the highest ratio was 17.86 times, in the year 2007-08 and the lowest ratio was 1.68 times in the year 2003-04.

In the year 2003-04 the ratio was 1.68 which is now increased in 2004-05 and was 5.85 than it increased in 2005-06, 2006-07, 2007-08 respectively 14.62, 16.29 and 17.86. In 2008-09 again it decreased to 15.51. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 10.29, 6.83, 6.85 and 7.08.

For the company point of view the industry (stock) turnover ratio is very good because it is 10.286 times.
Saurashtra Cement Ltd.:

Table 5.7 and Graph 5.40 reveal that the average inventory turnover ratio of study period was near the norms i.e. 10.83 times.

During the study period of this industry the highest ratio was 13.84 times of this industry, in the year 2009-10 and the lowest ratio was 8.63 times in the year 2004-05.

In the year 2003-04 the ratio was 8.83 which is now decreased in 2004-05 and was 8.63 than it increased in 2005-06, 2006-07, 2007-08 and 2009-10 respectively 9.77, 9.80, 12.86, 13.74 and 13.84. In 2010-11 again it decreased to 11.31. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 9.66 and 9.86.

For the company point of view the industry (stock) turnover ratio is very good because it is 10.83 times.
**Shree Digvijay Cement Co. Ltd.:**

Table 5.7 and Graph 5.41 reveal that the average inventory turnover ratio of study period was below than the norms i.e. 7.979 times. The average inventory turnover ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 12.0 times, in the year 2006-07 and the lowest ratio was 5.26 times in the year 2010-11.

In the year 2003-04 the ratio was 6.15 which are now increased in 2004-05, 2005-06, and 2006-07 was respectively 7.11, 11.35 and 12.00 than it decreased in 2007-08 up to 7.94. In 2008-09 again it increased to 8.34. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 8.67, 5.26, 5.85 and 7.12.

For the company point of view the industry (stock) turnover ratio is not good because it is 7.979 times.
Ultratech Cement Ltd.:-

Table 5.7 and Graph 5.42 reveal that the average inventory turnover ratio of study period was more than the norms i.e. 11.378 times. The average inventory turnover ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 13.49, in the year 2006-07 and the lowest ratio was 10.21 times in the year 2009-10.

In the year 2003-04 the ratio was 12.068 which are now decreased in 2004-05 and 2005-06 was 12.07 and 11.41, than it increased in 2006-07 up to 13.49. In 2007-08, 2008-09 and 2009-10 was respectively 12.05, 11.00, and 10.21. In 2010-11 again it increased to 10.77. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 10.3 and 10.42.

For the company point of view the industry (stock) turnover ratio is very good because it is 11.378 times.
ANOALYSIS AND EVALUATION

- NULL HYPOTHESIS (H₀) :
  There will be no significant difference in inventory (Stock) turnover ratio in selected cement industry.

- ALTERNATIVE HYPOTHESIS (H₁) :
  There will be significant difference in inventory (Stock) turnover ratio in selected cement industry.

- T-test :

  \[ S.D. = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n - 1}} \]
  \[ S.D. = \sqrt{\frac{10.33}{6-1}} \]
  \[ S.D. = 1.437 \]
  \[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]
  \[ T = \frac{7.252 - 0}{1.437} \times \sqrt{6} \]
  \[ T = 12.36 \]
  \[ T_{cal} = 12.36 \quad T_{tab} = 2.571 \text{ (at 5% level)} \]
  \[ 12.36 > 2.571 \]
  \[ T_{cal} > T_{tab} \]

  T-test indicates that there was significant difference in the inventory (stock) turnover ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.9 INVENTORY TO WORKING CAPITAL:

The ratio of inventory to working capital indicates the relationship between inventory and working capital. This is useful in analyzing the liquid financial position of a business enterprise. Ordinarily, there should be equal matching of inventory to working capital. However, blind use of the standard should be avoided as the ratio varies from industry to industry. The inventory to working capital can be computed as follows:

\[
\text{Inventory to working capital ratio} = \frac{\text{Inventory}}{\text{Working Capital}}
\]

According to the principles of financial management inventory should not exceed working capital. A lower will indicate a sound working capital position. The ratio of inventory to working capital of selected cement industries is being described in table no. 5.8.
Table No. 5.8
Inventory to Working Capital Ratio (In Times) In Cement Industries.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>0.360</td>
<td>0.426</td>
<td>-0.654</td>
<td>-0.335</td>
<td>-0.451</td>
<td>0.594</td>
</tr>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>1.180</td>
<td>0.565</td>
<td>-0.576</td>
<td>-0.185</td>
<td>-4.533</td>
<td>0.671</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>0.635</td>
<td>8.640</td>
<td>0.318</td>
<td>0.552</td>
<td>0.804</td>
<td>1.940</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>0.635</td>
<td>8.640</td>
<td>0.318</td>
<td>0.552</td>
<td>0.804</td>
<td>1.940</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>0.638</td>
<td>0.723</td>
<td>0.249</td>
<td>0.610</td>
<td>1.095</td>
<td>4.062</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>0.702</td>
<td>7.856</td>
<td>0.205</td>
<td>-0.642</td>
<td>0.376</td>
<td>2.775</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>0.748</td>
<td>0.939</td>
<td>0.577</td>
<td>-0.346</td>
<td>1.917</td>
<td>2.457</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>0.490</td>
<td>2.276</td>
<td>0.635</td>
<td>-0.212</td>
<td>2.087</td>
<td>2.637</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>0.484</td>
<td>1.998</td>
<td>-1.080</td>
<td>-0.215</td>
<td>-4.092</td>
<td>2.571</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>0.457</td>
<td>0.965</td>
<td>-2.121</td>
<td>1.766</td>
<td>2.961</td>
<td>2.609</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Xi</th>
<th>0.633</th>
<th>3.303</th>
<th>-0.212</th>
<th>0.154</th>
<th>0.096</th>
<th>2.226</th>
<th>1.033</th>
</tr>
</thead>
<tbody>
<tr>
<td>{Xi - \bar{X}}</td>
<td>-0.400</td>
<td>2.269</td>
<td>-1.246</td>
<td>-0.879</td>
<td>-0.936</td>
<td>1.192</td>
<td></td>
</tr>
<tr>
<td>{Xi - \bar{X}}^2</td>
<td>0.160</td>
<td>5.151</td>
<td>1.553</td>
<td>0.772</td>
<td>0.877</td>
<td>1.422</td>
<td>9.937</td>
</tr>
</tbody>
</table>

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.8 and Graph 5.43 reveal that the average inventory to working capital ratio of study period was below than the cement industries average. i.e. 0.633 times.

During the study period of this industry the highest ratio was 1.18 times, in the year 2004-05 and the lowest ratio was 0.36 times in the year 2003-04.

In the year 2003-04 the ratio was 0.36 which is now increased in 2004-05 and was 1.18 than it decreased in 2005-06, 2006-07 respectively 0.635 and 0.635. In 2007-08 again it increased to 0.638. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.702, 0.748, 0.49, 0.484 and 0.457.
Gujarat Sidhee Cement Ltd.:-

Table 5.8 and Graph 5.44 reveal that the average inventory to working capital ratio of study period was more than the norms i.e. 3.303 times. The average inventory to working capital ratios of this industry was highest among all selected industry.

During the study period of this industry the highest ratio was 8.64, in the year 2005-06 and 2006-07 the lowest ratio was 0.426 times in the year 2003-04.

In the year 2003-04 the ratio was 0.426 which is now increased in 2004-05, 2005-06 and 2006-07 respectively 0.565, 8.64 and 8.64, then again decreased in 2007-08 and was 0.723. In 2008-09 than it increased to 7.856. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.939, 2.276, 1.998 and 0.965.
Sanghi Industries Ltd.:

Table 5.8 and Graph 5.45 reveal that the average inventory to working capital ratio of study period was more than the norms i.e. -0.213 times. The average inventory to working capital ratios of this industry was lowest among all selected industry.

During the study period of this industry the highest ratio was 0.635 times, in the year 2010-11 and the lowest ratio was -2.121 times in the year 2012-13.

In the year 2003-04 the ratio was -0.654 which is now increased in 2004-05 and was -0.576 than it increased in 2005-06 and 2006-07 respectively 0.318 and 0.318. In 2007-08 again it decreased to 0.249. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.205, 0.577, 0.635, -1.08 and -2.121.
Table 5.8 and Graph 5.46 reveal that the average inventory to working capital ratio of study period was below than the cement industries average. i.e. 0.154 times.

During the study period of this industry the highest ratio was 1.766, in the year 2012-13 and the lowest ratio was -0.642 times in the year 2008-09.

In the year 2003-04 the ratio was -0.335 which is now increased in 2004-05 and was -0.185 than it increased in 2005-06, 2006-07 and 2007-08 respectively 0.552, 0.552 and 0.61. In 2008-09 again it decreased to -0.642. In 20010 to 2012-13 it fluctuates and the ratio was respectively -0.346, -0.212, -0.215 and 1.766.
Shree Digvijay Cement Co. Ltd.:-

Table 5.8 and Graph 5.47 reveal that the average inventory to working capital ratio of study period was below than the norms. i.e.0.096 times.

During the study period of this industry the highest ratio was 2.961, in the year 2012-13 and the lowest ratio was -4.533 times in the year 2004-05.

In the year 2003-04 the ratio was -0.451 which is now decreased in 2004-05 and was -4.533 than it increased in 2005-06, 2006-07 and 2007-08 respectively 0.804, 0.804 and 1.095. In 2008-09 again it decreased to 0.376. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 1.917, 2.087, -4.092 and 2.961.
Table 5.8 and Graph 5.48 reveal that the average inventory to working capital ratio of study period was more than the cement industries average, i.e. 1.284 times.

During the study period of this industry the highest ratio was 4.062, in the year 2007-08 and the lowest ratio was 0.594 times in the year 2003-04.

In the year 2003-04 the ratio was 0.594 which is now increased in 2004-05, 2005-06, 2006-07 and 2007-08 was 0.671, 1.94, 1.94, 4.062 than it decreased in 2008-09, 2009-10 respectively 2.775 and 2.457. In 2010-11 again it increased to 2.637. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 2.571 and 2.609.
Null Hypothesis ($H_0$) :-

There will be no significant difference in inventory to working capital ratio in selected cement industry.

Alternative Hypothesis ($H_1$) :-

There will be significant difference in inventory to working capital ratio in selected cement industry.

T-test :-

$$S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n-1}}$$

$$S.D. = \sqrt{\frac{9.937}{6-1}}$$

$$\text{S.D.} = 1.409$$

$$T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}$$

$$T = \frac{1.033 - 0}{1.409} \times \sqrt{6}$$

$$T = 1.759$$

$$T_{cal} = 1.759 \quad T_{tab} = 2.571 \text{ (at 5% level)}$$

12.21 < 2.571

$T_{cal} < T_{tab}$

T-test indicates that there was no significant difference in the inventory to working capital in selected cement industries. Because the calculate value of $T$ was lower than the tabulate value. So, alternative hypothesis has been rejected and null hypothesis has been accepted.
5.10 DEBTORS’ TURNOVER RATIO:-

In case firm sells goods on credit, the realization of sales revenue is delayed and the receivable are created. The cash is realized from these receivables later on.

The speed with which these receivables are collected affected the position of the firm. The debtor’s turnover ratio throws light on the collection and credit policies of the firm. It is calculated as follows:

\[
\text{Credit policye} = \frac{\text{Sales}}{\text{Average account receivable}}
\]

As account receivables pertains only to credit sales, it is often recommended to computer the debtor’s turnover with reference to credit sales instead of total sales. Then the debtor’s turnover would be:

\[
\text{Debtors’ turnover ratio} = \frac{\text{Credit sales}}{\text{Average account receivable}}
\]

Debtors’ turnover ratio indicates the average collection period. However, the average collection period can be directly calculated as follows:

\[
\text{Average collection period} = \frac{\text{Average accounts receivables}}{\text{Average daily credit sales}}
\]

\[
\text{Average daily credit sales} = \frac{\text{Credit sales}}{365(\text{No of days})}
\]

The debtors’ turnover ratio selected cement industries are being described in table no. 5.9.
### Table No. 5.9

**Debtors’ Turnover Ratio (In Days) In Cement Industries.**

**Under Study from 2003-04 to 2012-13.**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>10</td>
<td>50</td>
<td>85</td>
<td>29</td>
<td>34</td>
<td>29</td>
</tr>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>8</td>
<td>68</td>
<td>41</td>
<td>26</td>
<td>48</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>6</td>
<td>29</td>
<td>14</td>
<td>26</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>5</td>
<td>18</td>
<td>3</td>
<td>20</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>9</td>
<td>19</td>
<td>4</td>
<td>23</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>13</td>
<td>12</td>
<td>2</td>
<td>8</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>8</td>
<td>22</td>
<td>2</td>
<td>12</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>6</td>
<td>37</td>
<td>4</td>
<td>23</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>10</td>
<td>17</td>
<td>1</td>
<td>15</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>8</td>
<td>13</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>18</td>
</tr>
</tbody>
</table>

#### Xi

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Xi</td>
<td>8.3</td>
<td>28.5</td>
<td>16.3</td>
<td>19.1</td>
<td>17.3</td>
<td>17.2</td>
</tr>
</tbody>
</table>

\[
(X_i - \bar{X})^2 = 89.934 \quad 114.85 \quad 2.200 \quad 1.733 \quad 0.233 \quad 0.340
\]

\[
\sum (X_i - \bar{X})^2 = 209.28
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2103.
**Ambuja Cements Ltd.:**

Table 5.9 and Graph 5.49 reveal that the average debtors’ turnover ratio of study period was below than the norms i.e. 8.30 days. The average debtors’ turnover ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 13 days, in the year 2008-09 and the lowest ratio was 5 days in the year 2006-07.

In the year 2003-04 the ratio was 10 which are now decreased in 2004-05, 2005-06 and 2006-07 was 8, 6 and 5, than it increased in 2007-08, 2008-09 respectively 9 and 13. In 2009-10 again it decreased to 8. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 6, 10 and 8.

For the creditor point of view the solvency of this industry was sound because average debtors’ turnover ratio was below than the norms. It indicated small amount of debtors’.
**Gujarat Sidhee Cement Ltd.:**

Table 5.9 and Graph 5.50 reveal that the average debtors’ turnover ratio of study period was bellow than the norms i.e. 28.5 days. The average debtors’ turnover ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 68, in the year 2004-05 and the lowest ratio was 12 days in the year 2008-09.

In the year 2003-04 the ratio was 50 which is now increased in 2004-05 and was 68 then again decreased in 2005-06 and 2006-07 respectively 29 and 18. In 2007-08 than it increased to 19. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 12, 22, 37, 17 and 13.

For the creditor point of view the solvency of this industry was sound because average debtors’ turnover ratio was bellow than the norms. It indicated small amount of debtors’.
Sanghi Industries Ltd. :-

Table 5.9 and Graph 5.51 reveal that the average debtors’ turnover ratio of study period was below than the norms i.e. 16.30 days.

During the study period the highest ratio was 85 days, in the year 2003-04 and the lowest ratio was 1 days in the year 2011-12.

In the year 2003-04 the ratio was 85 which are now decreased in 2004-05, 2005-06 and 2006-07 was 41, 14 and 3, than it increased in 2005-06 and was 4. In 2008-09 and 2009-10 again it decreased to 2 and 2. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 4, 1 and 7.

For the creditor point of view the solvency of this industry was sound because average debtors’ turnover ratio was below than the norms. It indicated small amount of debtors’.
Table 5.9 and Graph 5.52 reveal that the average debtors’ turnover ratio of study period was below than the norms i.e. 19.1 days.

During the study period of this industry the highest ratio was 29, in the year 2003-04 and the lowest ratio was 8 days in the year 2008-09.

In the year 2003-04 the ratio was 29 which are now decreased in 2004-05, 2005-06 and 2006-07 respectively was 26, 26 and 20 than it increased in 2007-08 up to 23. In 2008-09 again it decreased to 8. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 12, 23, 15 and 9.

For the creditor point of view the solvency of this industry was not sound because average debtors’ turnover ratio was below than the norms. It indicated small amount of debtors’.
Table 5.9 and Graph 5.53 reveal that the average debtors’ turnover ratio of study period was below than the norms i.e. 17.3 days. The average debtors’ turnover ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 48, in the year 2004-05 and the lowest ratio was 3 days in the year 2010-11.

In the year 2003-04 the ratio was 34 which is now increased in 2004-05 and 48, than it decreased in 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10 respectively 11, 15, 11, 17 and 23. In 2010-11 again it decreased to 3. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 6, and 5.

For the creditor point of view the solvency of this industry was not sound because average debtors’ turnover ratio was below than the norms. It indicated small amount of debtors’.
Table 5.9 and Graph 5.54 reveal that the average debtors’ turnover ratio of study period was below than the norms i.e. 17.2 days.

During the study period of this industry the highest ratio was 29, in the year 2003-04 and the lowest ratio was 11 days in the year 2008-09, 2009-10.

In the year 2003-04 the ratio was 29 which are now decreased in 2004-05, 2005-06, 2006-07 and 2007-08 was 24, 19, 14 and 14. In 2008-09 again it decreased to 11. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 11, 17, 16, and 18.

For the creditor point of view the solvency of this industry was sound because average debtors’ turnover ratio was below than the norms. It indicated small amount of debtors'.
**NULL HYPOTHESIS (H₀) :-**

There will be no significant difference in debtors’ turnover ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁) :-**

There will be significant difference in debtors’ turnover Ratio in selected cement industry.

**T-test :-**

\[ S.D. = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n-1}} \]

\[ S.D. = \sqrt{\frac{209.28}{6-1}} \]

\[ S.D. = 6.47 \]

\[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]

\[ T = \frac{17.78 - 0}{6.47} \times \sqrt{6} \]

\[ T = 6.73 \]

\[ T_{cal} = 6.73 \quad \text{T}_{tab} = 2.571 \quad \text{(at 5\% level)} \]

\[ 6.73 \quad > \quad 2.571 \]

\[ T_{cal} \quad > \quad T_{tab} \]

T-test indicates that there was significant difference in the debtors’ turnover ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.11 CREDITORS’ TURNOVER RATIO:-

Creditors’ are the businesses or people who provide goods and services in credit terms. That is, they allow us time to pay rather than paying in cash.

There are good reasons why we allow people to pay on credit even though literally it doesn't make sense! If we allow people time to pay their bills, they are more likely to buy from your business than from another business that doesn't give credit. The length of credit period allowed is also a factor that can help a potential customer deciding whether to buy from your business or not: the longer the better, of course.

In spite of what we have just said, Creditors’ will need to optimize their credit control policies in exactly the same way that we did when we were assessing our debtors” turnover ratio - after all, if you are my debtor I am your creditor!

We give credit but we need to control how much we give, how often and for how long.

A creditor's turnover ratio is a reflection of how quickly a company pays its Creditors’. This is also known as a payable turnover ratio. Low turnover means it takes longer for a company to pay off Creditors’, while high turnover reflects rapid processing of credit accounts. Changes in the creditor's turnover ratio can provide information about a company's financial circumstances.

Credit purchases are the underpinning of many industries. Companies rely on credit to buy goods and services, and repay the credit
when they are able to sell products or move forward with economic activities as a result of the services they receive. Many companies offer credit on variable terms, and the ability to keep up with Creditors’ and control debt is important for the long-term financial success of a company. Internal accounting can determine the creditor's turnover ratio and flag changes that may be of concern.

If the ratio falls, it means a company is taking longer to repay Creditors’. This may be the result of poor liquidity, low sales, or other issues. A continued drop may be a cause for concern as it suggests the company cannot control its debt and may be at risk of bankruptcy. When the ratio rises, a company is retiring debt more quickly. A consistent ratio indicates balanced financial planning to keep repayments consistent, although if that ratio is low, it may indicate that a company could be headed for financial trouble.

A short-term liquidity measure used to quantify the rate at which a company pays off its suppliers. Accounts payable turnover ratio is calculated by taking the total purchases made from suppliers and dividing it by the average accounts payable amount during the same period.

Creditors’ Turnover Ratio (also known as Accounts Payable Turnover Ratio) is calculated by taking the total purchases made and dividing it by the average accounts payable during the period. It is used to measure the rate at which a firm pays off its suppliers.\(^9\)

This ratio is calculated on the same lines receivable turnover ratio is calculated. This ratio shows the velocity of debt payment by the firm. It is calculated as follow:

\[
\text{Creditors turnover ratio} = \frac{\text{Annual net credit purchases}}{\text{Average accounts payable}}
\]
Account payable = Trade creditors + Bills payable

Shorter average payment period or higher payable turnover ratio may indicate less period of credit enjoyed by the business it may be due to the fact that either business has better liquidity position; believe in availing cash discount and consequently enjoys better credit standing in the market or business credit rating among suppliers is not good and therefore they do not allow reasonable period of credit. The above two alternative conclusions are contradictory of each other therefore the ratio should be interpreted with caution.

A low creditor’s turnover ratio reflects liberal credit terms granted by supplies. While a high ratio shows that accounts are settled rapidly.

Average payment period = \frac{\text{Credit purchases}}{\text{Average account payable}}

Creditors’ turnover ratio indicates the average payment period. However, the average payment period can be directly calculated as follows:

Average payment period = \frac{\text{Average accounts payable}}{\text{Average daily credit purchases}}

Average daily credit purchase = \frac{\text{Credit purchases}}{365(\text{No of days})}

In determining the credit policy and average collection period provide a unique guideline.

The firm can compare what credit period it receives from the suppliers. Also it can compare the average credit period offered to the supplier in the industry to which it belongs. The creditor turnover ratio of selected cement industries is being described in table no. 5.10.
Table No. 5.10
Creditors’ Turnover Ratio (In Days) In Cement Industries.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2003 -2004</td>
<td>203</td>
<td>296</td>
<td>228</td>
<td>261</td>
<td>62</td>
<td>178</td>
</tr>
<tr>
<td>2</td>
<td>2004 -2005</td>
<td>164</td>
<td>293</td>
<td>144</td>
<td>253</td>
<td>91</td>
<td>177</td>
</tr>
<tr>
<td>3</td>
<td>2005 -2006</td>
<td>144</td>
<td>226</td>
<td>61</td>
<td>202</td>
<td>96</td>
<td>229</td>
</tr>
<tr>
<td>4</td>
<td>2006 -2007</td>
<td>204</td>
<td>226</td>
<td>126</td>
<td>84</td>
<td>28</td>
<td>246</td>
</tr>
<tr>
<td>5</td>
<td>2007 -2008</td>
<td>242</td>
<td>250</td>
<td>134</td>
<td>67</td>
<td>18</td>
<td>278</td>
</tr>
<tr>
<td>6</td>
<td>2008 -2009</td>
<td>195</td>
<td>234</td>
<td>289</td>
<td>111</td>
<td>145</td>
<td>209</td>
</tr>
<tr>
<td>7</td>
<td>2009 -2010</td>
<td>255</td>
<td>234</td>
<td>386</td>
<td>124</td>
<td>165</td>
<td>163</td>
</tr>
<tr>
<td>8</td>
<td>2010 -2011</td>
<td>276</td>
<td>447</td>
<td>178</td>
<td>236</td>
<td>206</td>
<td>207</td>
</tr>
<tr>
<td>9</td>
<td>2011 -2012</td>
<td>422</td>
<td>494</td>
<td>59</td>
<td>235</td>
<td>182</td>
<td>313</td>
</tr>
<tr>
<td>10</td>
<td>2012 -2013</td>
<td>318.8</td>
<td>538</td>
<td>154</td>
<td>158</td>
<td>149.5</td>
<td>287</td>
</tr>
</tbody>
</table>

\[
\bar{X} = 209.68
\]

\[
\sum (X_i - \bar{X})^2 = 26040.49
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Table 5.10 and Graph 5.55 reveal that the average Creditors’ turnover ratio of study period was more than the cement industries average i.e. 210.5 days.

During the study period of this industry the highest ratio was 422 days, in the year 2011-12 and the lowest ratio was 144 days in the year 2005-06.

In the year 2003-04 the ratio was 203 which is now decreased in 2004-05 and 2005-06 respectively 164 and 144, than it increased in 2006-07, 2007-08 respectively 204 and 242. In 2008-09 again it decreased to 195. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 255, 276,422 and 318.8.

For the creditor point of view the solvency of this industry was sound because average Creditors’ turnover ratio was more than the cement industries average.
Gujarat Sidhee Cement Ltd.:-

Table 5.10 and Graph 5.56 reveals that the average Creditors’ turnover ratio of study period was higher than the cement industries average, i.e. 323.8 days. The average Creditors’ turnover ratios of this industry were highest among all selected industry.

During the study period highest ratio was 538, in the year 2012-13 and the lowest ratio was 226 days in the year 2005-06 and 2006-07.

In the year 2003-04 the ratio was 296 which are now decreased in 2004-05, 2005-06 and 2006-07 respectively 293, 226 and 226 then again increased in 2007-08 and was 250. In 2008-09 and 2009-10 than it decreased to 234. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 447, 494 and 538.

For the creditor point of view the solvency of this industry was sound because average Creditors’ turnover ratio was higher than the cement industries average.
ANALYSIS AND EVALUATION

Table 5.10 and Graph 5.57 reveals that the average Creditors’ turnover ratio of study period was below than the cement industries average, i.e. 175.9 days.

During the study period of this industry the highest ratio was 386 days, in the year 2009-10 and the lowest ratio was 59 days in the year 2011-12.

In the year 2003-04 the ratio was 228 which is now increased in 2004-05 and 2005-06 respectively 144 and 61. In 2006-07 again it increased to 126. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 134, 289, 386, 178, 59, and 154.

For the creditor point of view the solvency of this industry was not sound because average Creditors’ turnover ratio was below than the cement industries average.
Saurashtra Cement Ltd.:-

Table 5.10 and Graph 5.58 reveals that the average Creditors’ turnover ratio of study period was below than the cement industries average, i.e. 173.1 days.

During the study period of this industry the highest ratio was 261, in the year 2003-04 and the lowest ratio was 67 days in the year 2007-08.

In the year 2003-04 the ratio was 261 which is now decreased in 2004-05 and was 253 than it decreased in 2005-06, 2006-07 and 2007-08 respectively 202, 84 and 67. In 2008-09 again it increased to 111. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 124, 236, 235 and 158.

For the creditor point of view the solvency of this industry was not sound because average Creditors’ turnover ratio was close near to than the cement industries average.
Shree Digvijay Cement Co. Ltd.:-

Table 5.10 and Graph 5.59 reveals that the average Creditors’ turnover ratio of study period was bellow than the cement industries average. I.e.114.25 days. The average Creditors’ turnover ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 206, in the year 2010-11 and the lowest ratio was 18 days in the year 2007-08.

In the year 2003-04 the ratio was 62 which is now increased in 2004-05 and was 91, than it increased in 2005-06 up to 96. In 2006-07 again it decreased to 28. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 18, 145, 165, 206, 182, and 149.5.

For the creditor point of view the solvency of this industry was not sound because average Creditors’ turnover ratio was bellow than the cement industries average.
Table 5.10 and Graph 5.60 reveals that the average Creditors’ turnover ratio of study period was more than the cement industries average. i.e. 228.7 days.

During the study period of this industry the highest ratio was 313, in the year 2011-12 and the lowest ratio was 163 days in the year 2009-10.

In the year 2003-04 the ratio was 178 which is now decreased in 2004-05 and was 177 than it increased in 2005-06 up to 229. In 2006-07 again it increased to 246. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 278, 209, 163, 207, 313 and 287.

For the creditor point of view the solvency of this industry was sound because average Creditors’ turnover ratio was above to the cement industries average.
NULL HYPOTHESIS ($H_0$) :-
There will be no significant difference in Creditors’ ratio in selected cement industry.

ALTERNATIVE HYPOTHESIS ($H_1$) :-
There will be significant difference in Creditors’ ratio in selected cement industry.

T-test :-

\[
S.D. = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n-1}}
\]

\[
S.D. = \sqrt{\frac{26040.49}{6-1}} = 72.167
\]

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{209.68 - 0}{72.167} \times \sqrt{6} = 7.11
\]

\[
T_{cal} = 7.11 \quad T_{tab} = 2.571 \quad \text{(at 5\% level)}
\]

\[
7.11 \quad > \quad 2.571
\]

$T_{cal}$ is greater than $T_{tab}$, indicating that there was significant difference in the Creditors’ ratio in selected cement industries. Because the calculate value of $T$ was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.12 CURRENT ASSETS TURNOVER:

Asset turnover is a financial ratio that measures the efficiency of a company's use of its assets in generating sales revenue or sales income to the company.

Companies with low profit margins tend to have high asset turnover, while those with high profit margins have low asset turnover. Companies in the retail industry tend to have a very high turnover ratio due mainly to cutthroat and competitive pricing.

Current assets turnover is an efficiency measurement accountants apply to a company’s financial statements. Both the income statements and balance sheets have the requisite information for computing this ratio. The result from this formula is a metric that indicates how well a company generates sales revenue from the current assets it owns. A higher number is generally preferable as the company uses its assets in the most efficient manner possible. Accountants can compute the current assets turnover ratio on a monthly basis.

A company’s current assets are those items that last less than 12 months in the business. The most common current assets include cash, cash equivalents, inventory, and other general current assets listed on a balance sheet. In most cases, the company reports these items at the very top of the balance sheet’s asset section. Accountants report these figures at their historical cost, which is the amount the company paid at the time of purchase. In some cases, a company may choose to leave out inventory if these items do not sell frequently.
The current assets turnover ratio is fairly basic; the most common formula divides sales by average current assets. Sales are the top figure reported on a company’s income statement. Average current assets take an extra step to compute. Accountants add together the beginning monthly balance for current assets and the ending monthly balance for current assets and then divide this figure by two. The result is the denominator for the current assets turnover ratio.

The resulting figure from the current assets turnover ratio is a metric that details the use of current assets. For example, the metric indicates how many times a company went through current assets in order to generate sales, hence turning over these items. Higher numbers prove that a company turns over more current assets to generate sales, meaning the business uses these items efficiently. A common way to look at this is by separating figures over or under 1.0 from the ratio. Results less than 1.0 indicate a company does not turn over its entire current assets balance more than once in a given period.

Financial ratios work best as a benchmark. Accountants should compare the current assets turnover ratio to historical trends or an industry average. This process can tell the company how well it operates under given market conditions at a specific time. Owners and executives can often make changes to operations in order to improve this ratio.

Assets are any property owned by a person or business. Tangible assets include money, land, buildings, investments, inventory, cars, trucks, boats, or other valuables. Intangibles such as goodwill are also considered to be assets.
Capital Assets, also known as Fixed Assets, are those assets such as land, buildings, and equipment acquired to carry on the business of a company with a life exceeding one year.

In financial records these Fixed Assets are usually expressed as the cost of the asset minus depreciation.

Current Assets are items such as cash, inventory, and accounts receivable that are currently cash or expected to be turned into cash within one year.

Asset Turnover may be used as a broad measure of asset efficiency. It's calculated by dividing sales revenue by the total assets.

Current Assets Turnover ratio shows the productivity of the company's current assets. The formula is the following:

\[
\text{Current assets turnover ratio} = \frac{\text{Sales}}{\text{Current assets}}
\]

The ideal behind the current assets turnover ratio is to give an over-all impression of how rapidly the total investment in current assets is being turned and is thought of by some as an index of ‘efficiency’ or ‘profitability’. The lower the turnover of the current assets, the worse is the utilization of current assets. The higher the turnover, the better is the use of current assets. The assets turnover ratio of selected cement industries is being described in table no. 5.11.
### Table No. 5.11
**Current Assets Turnover Ratio (In Times) In Cement Industries.**
**Under Study from 2003-04 to 2012-13.**

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<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>2.131</td>
<td>2.449</td>
<td>0.726</td>
<td>2.185</td>
<td>2.551</td>
<td>3.045</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>2.357</td>
<td>3.121</td>
<td>2.054</td>
<td>4.306</td>
<td>2.982</td>
<td>3.677</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
X_i & = 3.299 \quad 3.688 \quad 3 \quad 3.478 \quad 3.200 \quad 4.158 \\
\{X_i \text{ } - \bar{X}\} & = -0.171 \quad 0.217 \quad -0.470 \quad 0.007 \quad -0.270 \quad 0.687 \\
\{X_i \text{ } - \bar{X}\}^2 & = 0.029 \quad 0.047 \quad 0.221 \quad 0.000 \quad 0.073 \quad 0.473
\end{align*}
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Table 5.11 and Graph 5.61 reveal that the average current assets turnover ratio of study period was below than the cement industries average i.e. 3.299 times.

During the study period of this industry the highest ratio was 5.282 times, in the year 2006-07 and the lowest ratio was 2.131 times in the year 2003-04.

In the year 2003-04 the ratio was 2.131 which is now increased in 2004-05 and was 3.985 than it increased in 2005-06, 2006-07 respectively 4.444 and 5.282. In 2007-08 again it decreased to 3.526. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 2.626, 3.575, 2.357, 2.447 and 2.607.
Gujarat Sidhee Cement Ltd.:-

Table 5.11 and Graph 5.62 reveal that the average current assets turnover ratio of study period was higher than the cement industries average, i.e. 3.688 times.

During the study period highest ratio was 7.103, in the year 2008-09 and the lowest ratio was 2.092 times in the year 2004-05.

In the year 2003-04 the ratio was 2.449 which is now decreased in 2004-05 and was 2.092 then again increased in 2005-06, 2006-07 respectively 2.732 and 4.828. In 2007-08 than it decreased to 3.908. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 7.103, 4.614, 3.121, 3.444 and 2.589.
**Sanghi Industries Ltd. :-**

Table 5.11 and Graph 5.63 reveal that the average current assets turnover ratio of study period was below than the cement industries average, i.e. 3.0 times. The average current assets turnover ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 5.461 times, in the year 2011-12 and the lowest ratio was 0.726 times in the year 2003-04.

In the year 2003-04 the ratio was 0.726 which is now increased in 2004-05 and 2005-06 respectively 2.258 and 4.715. In 2006-07 again it decreased to 2.765. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 2.918, 1.906, 2.789, 2.054, 5.461, and 4.402.
Saurashtra Cement Ltd.:-

Table 5.11 and Graph 5.64 reveal that the average current assets turnover ratio of study period was close near to than the cement industries average, i.e. 3.478 times.

During the study period of this industry the highest ratio was 6.80, in the year 2008-09 and the lowest ratio was 1.286 times in the year 2006-07.

In the year 2003-04 the ratio was 2.185 which is now decreased in 2004-05 and was 1.982 than it decreased in 2005-06, 2006-07 and 2007-08 respectively 1.936, 1.286 and 1.5. In 2008-09 again it increased to 6.80. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 5.873, 4.306, 4.721 and 4.192.
ANALYSIS AND EVALUATION

- **Shree Digvijay Cement Co. Ltd.:-**

  Table 5.11 and Graph 5.65 reveal that the average current assets turnover ratio of study period was below than the cement industries average. i.e. 3.2 times.

  During the study period of this industry the highest ratio was 5.105, in the year 2011-12 and the lowest ratio was 1.316 times in the year 2004-05.

  In the year 2003-04 the ratio was 2.551 which is now decreased in 2004-05 and was 1.316, than it increased in 2005-06 up to 4.173. In 2006-07 again it decreased to 3.118. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 3.299, 1.935, 3.427, 2.982, 5.105, and 4.093.
Table 5.11 and Graph 5.66 reveal that the average current assets turnover ratio of study period was more than the cement industries average. i.e. 4.158 times. The average current assets turnover ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 5.112, in the year 2006-07 and the lowest ratio was 3.045 times in the year 2003-04.

In the year 2003-04 the ratio was 3.045 which are now increased in 2004-05, 2005-06 and 2006-07 was 3.109, 4.275 and 5.112 than it decreased in 2007-08 4.227. In 2008-09 again it increased to 4.652. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 4.787, 3.677, 4.397 and 4.302.
**NULL HYPOTHESIS (H₀) :-**

There will be no significant difference in current assets turnover in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁) :-**

There will be significant difference in current assets turnover in selected cement industry.

**T-test :-**

\[
S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n - 1}}
\]

\[
S.D. = \sqrt{\frac{0.844}{6-1}}
\]

\[
S.D. = 0.410
\]

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{3.470 - 0}{0.410} \times \sqrt{6}
\]

\[
T = 20.69
\]

\[
T_{cal} = 20.69 \quad T_{tab} = 2.571 \quad \text{(at 5% level)}
\]

\[
20.69 > 2.571
\]

\[
T_{cal} > T_{tab}
\]

T-test indicates that there was significant difference in the current assets turnover in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.13 AVERAGE COLLECTION PERIOD:-

The average collection period of accounts receivable is the average number of days it takes to convert receivables into cash. It is the average number of days that it takes customers to pay their credit accounts.

The average collection period tells the business owner the liquidity of the firm's accounts receivables. It provides information about the company's credit policies. The business owner can evaluate how well the company's credit policy is working by evaluating the average collection period.

The average collection period is the average number of days between 1) the date that a credit sale is made, and 2) the date that the money is received from the customer. The average collection period is also referred to as the days’ sales in accounts receivable.

An alternate way to calculate the average collection period is: the average accounts receivable balance divided by average credit sales per day.

If a company offers credit terms of next 30 days, the company may find that its average collection period is actually 45 days or more. Monitoring the average collection period is important for a company’s cash flow and its ability to meet its obligations when they come due.

The Average Collection Period measures the average number of days it takes for the company to collect revenue from its credit sales. The Average Daily Sales is the Net Sales divided by 365 days in the year. The
company will usually state its credit policies in its financial statement, so the Average Collection Period can be easily gauged as to whether or not it is indicating positive or negative information.

This ratio reflects how easily the company can collect on its customers. It also can be used as a gauge of how loose or tight the company maintains its credit policies. A particular thing to watch out for is if the Average Collection Period is rising over time. This could be an indicator that the company's customers are in trouble, which could spell trouble ahead.

This could also indicate the company has loosened its credit policies with customers, meaning that they may have been extending credit to companies where they normally would not have. This could temporarily boost sales, but could also result in an increase in sales revenue that cannot be recovered, as shown in the Allowance for Doubtful Accounts.

Average Collection Period is the approximate amount of time that it takes for a business to receive payments owed, in terms of receivables, from its customers and clients. Companies use the average collection period to assess the effectiveness of a company’s credit and collection policies. It should not greatly exceed the credit term period (i.e., the time allowed for payment). The average collection period is a variant of the receivables turnover ratio.
The average number of days for which books debts remain outstanding is called the average collection period (ACP) and can be computed as follows:

\[
\text{Average collection period} = \frac{\text{Debtors' Net credit Sales}}{\text{Net credit Sales}} \times 365
\]

The average collection period measures the quality of debtors’ since it indicates the speed of their collection. The shorter the average collection period, the better the quality of debtors’, as a short collection period implies the prompt payments by debtors’ The average collection period should be compared against the firm's credit terms and policy to judge its credit and collection efficiency. The ratio of average collection period of selected cement industries is being described in table no. 5.12.
Table No. 5.12

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>10</td>
<td>45</td>
<td>73</td>
<td>25</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>8</td>
<td>58</td>
<td>35</td>
<td>23</td>
<td>40</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>6</td>
<td>26</td>
<td>12</td>
<td>24</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>5</td>
<td>16</td>
<td>3</td>
<td>19</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>9</td>
<td>17</td>
<td>4</td>
<td>21</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>6</td>
<td>2008-2009</td>
<td>13</td>
<td>11</td>
<td>2</td>
<td>7</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>8</td>
<td>21</td>
<td>1</td>
<td>11</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>6</td>
<td>33</td>
<td>4</td>
<td>21</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>10</td>
<td>12</td>
<td>1</td>
<td>13</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>8</td>
<td>12</td>
<td>6</td>
<td>9</td>
<td>5</td>
<td>16</td>
</tr>
</tbody>
</table>

| Xi      | 8.3       | 25.1     | 14.1     | 17.3    | 15.1    | 15.2   | 15.85   | 311   |
| {Xi − X} | -7.55    | 9.25     | -1.75    | 1.45    | -0.75   | -0.65  | -7.86   | 148.715 |
| {Xi − X}^2 | 57.003  | 85.563   | 3.0625   | 2.1025  | 0.5625  | 0.4225 | 16.3625 | 148.715 |

Source: Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2103.
Ambuja Cements Ltd.:-

Table 5.12 and Graph 5.67 reveal that the average collection period ratio of study period was below than the cement industries average, i.e. 8.3 days. The average collection period ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 13 days, in the year 2008-09 and the lowest ratio was 5 days in the year 2006-07.

In the year 2003-04 the ratio was 10 which is now decreased in 2004-05, 2005-06 and 2006-07 respectively 8, 6 and 5 than it increased in 2007-08, 2008-09 respectively 9 and 13. In 2009-10 again it decreased to 8. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 6, 10 and 8.
Gujarat Sidhee Cement Ltd.:-

Table 5.12 and Graph 5.68 reveal that the average collection period ratio of study period was more than the cement industries average. i.e. 25.1 days.

During the study period of this industry the highest ratio was 58, in the year 2004-05 and the lowest ratio was 11 days in the year 2008-09.

In the year 2003-04 the ratio was 45 which is now increased in 2004-05 and was 58 then again decreased in 2005-06, 2006-07 respectively 26 and 16. In 2007-08 than it increased to 17. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 11, 21, 33, 12 and 12.
Sanghi Industries Ltd. :-

Table 5.12 and Graph 5.69 reveal that the average collection period ratio of study period was bellow than the cement industries average. i.e. 14.1 days.

During the study period of the highest ratio was 723 days, in the year 2003-04 and the lowest ratio was 1 days in the year 2009-10 and 2011-12.

In the year 2003-04 the ratio was 73 which is now decreased in 2004-05, 2005-06 and 2006-07 respectively 35, 12 and 3, than it increased in 2007-08 was 4. In 2008-09 again it decreased to 2. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 1, 4, 1 and 6.
ANALYSIS AND EVALUATION

**Saurashtra Cement Ltd.**

Table 5.12 and Graph 5.70 reveal that the average collection period ratio of study period was below than the cement industries average. i.e. 17.3 days.

During the study period of this industry the highest ratio was 25, in the year 2003-04 and the lowest ratio was 7 days in the year 2008-09.

In the year 2003-04 the ratio was 25 which is now decreased in 2004-05 and was 23 than it increased in 2005-06 up to 24. In 2006-07 again it decreased to 19. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 21, 7, 11, 21, 13 and 9.
Table 5.12 and Graph 5.71 reveal that the average collection period ratio of study period was below than the cement industries average, i.e. 15.1 days.

During the study period of this industry the highest ratio was 40, in the year 2004-05 and the lowest ratio was 3 days in the year 2010-11.

In the year 2003-04 the ratio was 29 which is now increased in 2004-05 and was 40 than it decreased in 2005-06 up to 9. In 2006-07 again it increased to 13. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 10, 15, 22, 3, 5, and 5.
Ultratech Cement Ltd.:

Table 5.12 and Graph 5.72 reveal that the average collection period ratio of study period was more than the cement industries average. i.e. 15.2 days.

During the study period of this industry the highest ratio was 24. In the year 2003-04 and the lowest ratio was 10 days in the year 2008-09 to 2009-10.

In the year 2003-04 the ratio was 24 which is now decreased in 2004-05, 2004-05, 2005-06 and 2006-07 respectively 21, 17 and 12 than it increased in 2007-08 and was 13. In 2008-09 and 2010-11 again it decreased to 10. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 15, 14 and 16.
ANALYSIS AND EVALUATION

❖ NULL HYPOTHESIS (H₀) :-

There will be no significant difference in average collection period in selected cement industry.

❖ ALTERNATIVE HYPOTHESIS (H₁) :-

There will be significant difference in average collection period in selected cement industry.

❖ T-test :-

\[ S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n - 1}} \]

\[ S.D. = \sqrt{\frac{148.715}{6-1}} \]

[S.D. = 5.453]

\[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]

\[ T = \frac{15.85 - 0}{5.453} \times \sqrt{6} \]

[T = 2.906]

\[ T_{cal} = 2.906 \quad T_{tab} = 2.571 \quad \text{(at 5% level for D.F.=5)} \]

\[ 2.906 > 2.571 \]

\[ T_{cal} > T_{tab} \]

T-test indicates that there was significant difference in the average collection period in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.14 WORKING CAPITAL TURNOVER RATIO:-

The working capital is major importance to internal and external analysis because of its close relationship to current day to day operations of the business. Inadequacy or mismanagement of working capital is the leading cause of business failure. The working capital of company is the life blood which flows though the veins and morel to the brain (management) and muscles (personnel) digests to the best degree the raw material used by its organs, flow and return to the heart (cash flow) for another journey and so when the working capital is taking or slows down, the financial body dies and has value only as junk.

The efficiency of a firm in managing its working capital is ascertained by computing working capital turnover ratio which as arrived at by dividing the net-sales by the figures of working capital. In the present study, working capital has been taken as the excess of current assets over current liabilities.

This ratio establishes a relationship between sales and net working capital of sampled companies. This ratio is calculated as follows:

\[
\text{Working capital turnover} = \frac{\text{Sales}}{\text{Net working capital}}
\]

Working capital turnover is further segregated into Inventory turnover, Debtors’ turnover, and Creditors’ turnover. The ratio of inventory to working capital of selected cement industries is being described in table no. 5.8.
### Table No. 5.13

**Working Capital Turnover Ratio (In Times) In Cement Industries.**

*Under Study from 2003-04 to 2012-13.*

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<tbody>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>6.142</td>
<td>10.03</td>
<td>4.124</td>
<td>7.398</td>
<td>8.111</td>
<td>41.87</td>
</tr>
</tbody>
</table>

| Xi      | 6.187      | 34.186             | -8.006                      | -0.588                 | -9.683                  | 21.9                           |
| {Xi – X̄} | -1.145     | 26.853             | -15.33                      | -7.921                 | -17.01                  | 14.568                         |
| {Xi – X̄}² | 1.311     | 721.11             | 235.28                      | 62.747                 | 289.54                  | 212.22                         |

\[
\bar{X} = \frac{7.332}{10} = 0.733
\]

\[
\sum(X_i - \bar{X})^2 = 1522.202
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Ambuja Cements Ltd.:-

Table 5.13 and Graph 5.73 reveal that the average working capital turnover ratio of study period was below than the cement industries average. i.e. 6.187 times.

During the study period of this industry the highest ratio was 9.665 times, in the year 2006-07 and the lowest ratio was 4.021 times in the year 2010-11.

In the year 2003-04 the ratio was 2.788 which is now increased in 2004-05 and was 9.094 than it decreased in 2005-06 up to 8.789. In 2006-07 again it increased to 9.665. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 6.142, 4.615, 7.756, 4.021, 4.476 and 4.528.
Gujarat Sidhee Cement Ltd.:-

Table 5.13 and Graph 5.74 reveal that the average working capital turnover ratio of study period was more than the cement industries average. i.e. 34.186 times. The average working capital turnover ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 141.172, in the year 2008-09 and the lowest ratio was 4.92 times in the year 2003-04.

In the year 2003-04 the ratio was 4.92 which is now increased in 2004-05, 2005-06 and 2006-07 respectively 5.354, 12.25, and 111.14, then again decreased in 2007-08 up to 10.03. In 2008-09 than it increased to 141.17. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 13.403, 18.781, 17.54 and 7.261.
Sanghi Industries Ltd. :-

Table 5.13 and Graph 5.3 reveal that the average working capital turnover ratio of study period was below than the cement industries average. i.e. -8.006 times.

During the study period of this industry the highest ratio was 4.981 times, in the year 2009-10 and the lowest ratio was -74.65 times in the year 2005-06.

In the year 2003-04 the ratio was -1.124 which is now decreased in 2004-05 and 2005-06 respectively -3.448 and -74.65 than it increased in 2005-06 up to 4.356.In 2007-08 again it decreased to 4.124. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 2.807, 4.981, 4.213, -8.689 and 12.624.
Saurashtra Cement Ltd.:-

Table 5.13 and Graph 5.76 reveal that the average working capital turnover ratio of study period was below than the cement industries average. i.e. -0.588 times.

During the study period of this industry the highest ratio was 15.827, in the year 2012-13 and the lowest ratio was -12.83 times in the year 2008-09.

In the year 2003-04 the ratio was -2.951 which is now decreased in 2004-05 and 2005-06 respectively -1.684 and -5.704, than it increased in 006-07, 2007-08 respectively 4.667 and 7.398. In 2008-09 again it decreased to -12.83. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively -6.645, -2.055, -1.904 and 15.827.
Shree Digvijay Cement Co. Ltd.:

Table 5.13 and Graph 5.77 reveal that the average working capital turnover ratio of study period was below the cement industries average, i.e., -9.683 times. The average working capital turnover ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 17.518, in the year 2012-13 and the lowest ratio was 102.08 times in the year 2005-06.

In the year 2003-04 the ratio was -2.585 which is now decreased in 2004-05 and 2005-06 was respectively -17.1 and -102.08 than it increased in 2006-07 and 2007-08 respectively 7.054 and 8.111. In 2008-09 again it decreased to 2.99. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 12.22, 8.617, -31.56 and 17.518.
Table 5.13 and Graph 5.78 reveal that the average working capital turnover ratio of study period was more than the cement industries average. i.e. 21.9 times.

During the study period of this industry the highest ratio was 41.874, in the year 2007-08 and the lowest ratio was 7.178 times in the year 2003-04.

In the year 2003-04 the ratio was 7.178 which is now increased in 2004-05, 2004-05, 2005-06, 2006-07 and 2007-08 was 7.242, 14.08, 24.541 and 41.874 than it decreased in 2008-09, 2009-10 and 2010-11 respectively 28.715, 23.12 and 20.157. In 2011-12 again it increased to 25.99, and in 2012-13 decreased up to 25.378.
null hypothesis (H₀) :
There will be no significant difference in working capital turnover ratio in selected cement industry.

alternative hypothesis (H₁) :
There will be significant difference in working capital turnover ratio in selected cement industry.

t-test :

\[ S.D. = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n - 1}} \]

\[ S.D. = \sqrt{\frac{1522.202}{6-1}} \]

\[ S.D. = 17.448 \]

\[ T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n} \]

\[ T = \frac{7.332 - 0}{17.448} \times \sqrt{6} \]

\[ T = 1.029 \]

\[ T_{cal} = 1.029 \quad T_{tab} = 2.571 \quad (at 5% level for D.F.=5) \]

1.029 < 2.571

\[ T_{cal} \quad < \quad T_{tab} \]

T-test indicates that there was no significant difference in the working capital turnover ratio in selected cement industries. Because the calculate value of T was lower than the tabulate value. So, alternative hypothesis has been rejected and null hypothesis has been accepted.
5.15 GROSS PROFIT RATIO:-

This ratio tells us something about the business’s ability consistently to control its production costs or to manage the margins it makes on products it buys and sells. While sales value and volumes may move up and down significantly, the gross profit margin is usually quite stable (in percentage terms). However, a small increase (or decrease) in profit margin, however caused can produce a substantial change in overall profits.

\[
\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net Sales}} \times 100
\]

The gross profit margin reflects the efficiency with which management produces each unit of product. This ratio indicates the average spread between the cost of goods sold and the sales revenue. A high gross profit margin relative to the industry average implies that the firm is able to produce at relatively lower cost. A low gross profit margin may reflect higher cost of goods sold due to the firm's inability to purchase raw materials at favorable terms, inefficient utilization of plant and machinery, or over-investment in plant and machinery, resulting in higher cost of production. The ratio will also be low due to a fall in prices in the market, or marked reduction in selling prices by the firm in an attempt to obtain large sales volume, the cost of goods sold remaining unchanged.

There is no standard showing reasonableness of gross profit ratio. Generally it varies from industry to industry. For the cement industry 15% to 20% gross profit is reasonable. The ratio of gross profit of selected cement industries is being described in table no. 5.14.
### Table No. 5.14
Gross profit Ratio (In Percentages) In Cement Industries.

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<tr>
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<tbody>
<tr>
<td>2</td>
<td>2004-2005</td>
<td>28.193</td>
<td>-10.82</td>
<td>7.735</td>
<td>-30.5</td>
<td>-7.483</td>
<td>7.225</td>
</tr>
<tr>
<td>5</td>
<td>2007-2008</td>
<td>52.675</td>
<td>17.423</td>
<td>28.8</td>
<td>10.371</td>
<td>-2.916</td>
<td>31.641</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>29.678</td>
<td>15.228</td>
<td>17.739</td>
<td>10.763</td>
<td>16.033</td>
<td>28.026</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>27.727</td>
<td>-0.151</td>
<td>14.958</td>
<td>-4.652</td>
<td>3.895</td>
<td>19.148</td>
</tr>
<tr>
<td>9</td>
<td>2011-2012</td>
<td>25.111</td>
<td>5.094</td>
<td>6.711</td>
<td>0.654</td>
<td>5.849</td>
<td>23.46</td>
</tr>
<tr>
<td>10</td>
<td>2012-2013</td>
<td>25.354</td>
<td>14.444</td>
<td>17.582</td>
<td>46.567</td>
<td>15.865</td>
<td>23.647</td>
</tr>
</tbody>
</table>

| {Xi – X} |          | 15.537             | -4.219                      | 0.528                  | -13.67                  | -4.014                        | 5.845                 |
| {Xi – X}^2 |          | 241.41             | 17.8                        | 0.278                  | 187.05                  | 16.118                        | 34.165                | 496.828 = Σ{Xi – X}^2 |

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Table 5.14 and Graph 5.79 reveal that the average gross profit ratio of study period was more than the cement industries average. i.e. 31.171%. The average gross profit ratios of this industry were highest among all selected industry.

During the study period highest ratio was 52.674%, in the year 2007-08 and the lowest ratio was 24.494% in the year 2003-04.

In the year 2003-04 the ratio was 24.494 which is now increased in 2004-05 and was 28.193 than it decreased in 2005-06 up to 27.481. In 2007-08 and 2007-08 again it increased respectively 34.849 and 52.675. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 36.15, 29.678, 27.727, 25.111 and 25.354.
Gujarat Sidhee Cement Ltd.:-

Table 5.14 and Graph 5.80 reveal that the average gross profit ratio of study period was more than the cement industries average i.e. 11.414%.

During the study period of this industry the highest ratio was 50.418, in the year 2003-04 and the lowest ratio was -10.828% in the year 2004-05.

In the year 2003-04 the ratio was 50.418 which is now decreased in 2004-05 and was -10.82 then again increased in 2005-06, 2006-07 and 2007-08 respectively -6.267, 11.826 and 17.423. In 2008-09 than it decreased to 16.959. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 15.228, -0.151, 5.094 and 14.444.
Sanghi Industries Ltd. :-

Table 5.14 and Graph 5.81 reveal that the average gross profit ratio of study period was more than the norms i.e. 16.161%.

During the study period of this industry the highest ratio was 28.8%, in the year 2007-08 and the lowest ratio was 5.453% in the year 2003-04.

In the year 2003-04 the ratio was 5.453 which is now increased in 2004-05, 2005-06, 2006-07 and 2007-08 respectively 7.735, 13.542, 25.549 and 28.8, than it decreased 2008-09 to 2011-12 continues dealing respectively 23.544, 17.739, 14.958 and 6.711 and 2.827, 2.94, 2.947. In 2012-31 again it increased to 17.582.
Saurashtra Cement Ltd.:-

Table 5.14 and Graph 5.82 reveal that the average gross profit ratio of study period was bellow than the cement industries average i.e. 1.956%. The average gross profit ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 46.567, in the year 2012-13 and the lowest ratio was -30.5% in the year 2004-05.

In the year 2003-04 the ratio was -9.618 which is now decreased in 2004-05 and was -30.5 than it increased in 2005-06 and 2006-07 respectively -16.56 and 16.442. In 2007-08 again it decreased to 10.371. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively -3.889, 10.763, -4.652, 0.654 and 45.567.
Table 5.14 and Graph 5.83 reveal that the average gross profit ratio of study period was below than the cement industries average i.e. 11.618%.

During the study period of this industry the highest ratio was 26.279, in the year 2005-06 and the lowest ratio was -7.483% in the year 2004-05.

In the year 2003-04 the ratio was 26.263 which is now decreased in 2004-05 and was -7.483 than it increased in 2005-06 up to 26.279. In 2006-07 again it decreased to 23.098. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively -2.916, 9.306, 16.033, 3.895, 5.849, and 15.865.
Ultratech Cement Ltd.:-

Table 5.14 and Graph 5.84 reveal that the average gross profit ratio of study period was more than the cement industries average i.e. 21.478%.

During the study period of this industry the highest ratio was 31.641%, in the year 2007-08 and the lowest ratio was 7.225% in the year 2004-05.

In the year 2003-04 the ratio was 11.708 which is now decreased in 2004-05 and was 7.225 than it increased in 2005-06, 2006-07 and 2007-08 respectively 15.185, 28.364 and 31.341. In 2008-09 again it decreased to 26.382. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 28.026, 19.148, 23.46 and 23.647.
**NULL HYPOTHESIS (H₀) :-**

There will be no significant difference in gross profit ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁) :-**

There will be significant difference in gross profit ratio in selected cement industry.

**T-test :-**

\[
S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n-1}}
\]

\[
S.D. = \sqrt{\frac{496.828}{6-1}}
\]

\[
S.D. = 9.968
\]

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{15.633 - 0}{9.968} \times \sqrt{6}
\]

\[
T = 3.84
\]

\[
T_{cal} = 3.84 \quad T_{tab} = 2.571 \text{ (at 5% level)}
\]

\[
3.84 > 2.571
\]

T-test indicates that there was significant difference in the gross profit in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
5.16 **NET PROFIT RATIO:-**

The net profit margin is simply the after-tax profit a company generates for each rupee of revenue. Net profit margins vary across industries, making it important to compare a potential investment against its competitors. Although the rule-of-thumb is that a higher net profit margin is preferable, it is not uncommon for management to purposely lower the net profit margin in a bid to attract higher sales.

\[
\text{Net profit ratio} = \frac{\text{Net profit}}{\text{Net sales}} \times 100
\]

Net profit margin ratio establishes a relationship between net profit and sales and indicates management’s efficiency in manufacturing, administering and selling the products. This ratio is the overall measure of the firm’s ability to turn each rupee sales into net profit. If the net margin is inadequate, the firm will fail to achieve satisfactory return on shareholder's funds. This ratio also indicates the firm’s capacity to withstand adverse economic conditions. A firm with a high net margin ratio would be in an advantageous position to survive in the face of falling sales prices, rising costs of production or declining demand for the product. It would really be difficult for a low net margin firm to withstand these adversities. Similarly, a firm with high net profit margin can make better use of favorable conditions, such as rising sales prices, falling costs of production or increasing demand for the product.

There is no showing reasonableness of net profit ratio. Generally it varies from industry to industry. For the cement industry 10% to 15% net profit ratio is reasonable. The ratio of net profit of selected cement industries is being described in table no. 5.15.
**Table No. 5.15**

*Net Profit Ratio (In Percentages) In Cement Industries.*

*Under Study from 2003-04 to 2012-13.*

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2003-2004</td>
<td>12.803</td>
<td>107.83</td>
<td>1.283</td>
<td>-10.84</td>
<td>3.601</td>
<td>1.724</td>
</tr>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>18.025</td>
<td>-10.87</td>
<td>1.345</td>
<td>-25.29</td>
<td>7.191</td>
<td>6.949</td>
</tr>
<tr>
<td>4</td>
<td>2006-2007</td>
<td>24.166</td>
<td>4.162</td>
<td>14.577</td>
<td>-3.010</td>
<td>0.218</td>
<td>15.934</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>17.216</td>
<td>8.910</td>
<td>6.515</td>
<td>2.769</td>
<td>13.583</td>
<td>15.487</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>17.098</td>
<td>-1.145</td>
<td>13.376</td>
<td>-14.56</td>
<td>4.460</td>
<td>10.45</td>
</tr>
</tbody>
</table>

\[
\sum (X_i - \bar{X}) = 7.477
\]

\[
\sum (X_i - \bar{X})^2 = 401.024
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2103.
Ambuja Cements Ltd.:--

Table 5.15 and Graph 5.85 reveal that the average net profit ratio of study period was more than the norms i.e. 18.854%. The average net profit ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 31.603%, in the year 2003-04 and the lowest ratio was 12.803% in the year 2003-04.

Gujarat Sidhee Cement Ltd.:-

Table 5.15 and Graph 5.86 reveal that the average net profit ratio of study period was more than the cement industries average i.e. 12.551%.

During the study period of this industry the highest ratio was 107.83, in the year 2003-04 and the lowest ratio was -11.53% in the year 2004-05.

In the year 2003-04 the ratio was 107.83 which is now decreased in 2004-05 and was -11.53 then again increased in 2005-06, 2006-07 and 2007-08 respectively -10.87, 4.162 and 13.288. In 2008-09 than it decreased to 6.123. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 8.91, -1.145, 1.599 and 7.157.
Sanghi Industries Ltd. :-

Table 5.15 and Graph 5.87 reveal that the average net profit ratio of study period was below than the cement industries average i.e. 6.733%.

During the study period of this industry the highest ratio was 17.454%, in the year 2007-08 and the lowest ratio was -4.907% in the year 2004-05.

In the year 2003-04 the ratio was 1.283 which is now decreased in 2004-05 and was -4.907 than it increased in 2005-06, 2006-07 and 2007-08 respectively 1.345, 14.577 and 17.454. In 2008-09 again it decreased to 12.569. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 6.515, 13.376, -3.285 and 8.406.
Saurashtra Cement Ltd.:

Table 5.15 and Graph 5.88 reveal that the average net profit ratio of study period was below than the cement industries average i.e. 0.73%. The average net profit ratios of this industry were lowest among all selected industry.

During the study period of this industry the highest ratio was 7.746, in the year 2007-08 and the lowest ratio was -25.29% in the year 2005-06.

In the year 2003-04 the ratio was -10.84 which is now decreased in 2004-05 and 2005-06 respectively -24.93 and 25.29, than it increased in 2006-07 and 2007-08 respectively -3.01 and 7.746. In 2008-09 again it decreased to -2.958. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 2.769, -14.56, -4.393 and 4.216.
**Shree Digvijay Cement Co. Ltd.:**

Table 5.15 and Graph 5.89 reveal that the average net profit ratio of study period was below than the norms i.e. 2.965%.

During the study period of this industry the highest ratio was 13.584, in the year 2009-10 and the lowest ratio was -18.8% in the year 2007-08.

In the year 2003-04 the ratio was 3.601 which is now decreased in 2004-05 and was 1.196 than it increased in 2005-06 up to 7.191. In 2006-07 again it decreased to 0.218. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively -18.80, 7.067, 13.585, 4.46, 2.927 and 8.214.
Ultratech Cement Ltd.:-

Table 5.15 and Graph 5.90 reveal that the average net profit ratio of study period was more than the cement industries average i.e. 10.887%.

During the study period of this industry the highest ratio was 18.279, in the year 2007-08 and the lowest ratio was 0.109% in the year 2004-05.

In the year 2003-04 the ratio was 1.724 which is now decreased in 2004-05 and was 0.109 than it increased in 2005-06, 2006-07 and 2007-08 respectively 6.949, 15.934 and 18.279. In 2008-09 again it decreased to 15.243. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 15.487, 10.45, 12.379 and 12.319.
**NULL HYPOTHESIS (H₀) :-**
There will be no significant difference in net profit ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁) :-**
There will be significant difference in net profit ratio in selected cement industry.

**T-test :-**

\[
S.D. = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n - 1}}
\]

\[
S.D. = \sqrt{\frac{401.024}{6-1}}
\]

\[
S.D. = 8.955
\]

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{7.477 - 0}{8.955} \times \sqrt{6}
\]

\[
T = 2.045
\]

\[
T_{cal} = 2.045 \quad T_{tab} = 2.571 \quad \text{(at 5% level)}
\]

\[
2.045 < 2.571
\]

\[
T_{cal} < T_{tab}
\]

T-test indicates that there was no significant difference in the net profit ratio in selected cement industries. Because the calculate value of T was lower than the tabulate value. So, alternative hypothesis has been rejected and null hypothesis has been accepted.
5.17 OPERATING PROFIT RATIO:

This ratio indicates the relation between operating profit and sales in the form of percentage. Operating profit arrived at by adjusting all non-operating expense and incomes in net profit in the other words; we can say profits before depreciation and taxes. A consistently high ratio tells us the efficient and efficient operation of the business. It is calculated as bellow:

\[
\text{Operating profit ratio} = \frac{\text{Operating profit}}{\text{Net sales}} \times 100
\]

The ratio of operating profit of selected cement industries is being described in table no. 5.16.
Table No. 5.16
Operating Profit Ratio (In Percentages) In Cement Industries.

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<thead>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>2005-2006</td>
<td>31.014</td>
<td>-10.87</td>
<td>26.91</td>
<td>5.650</td>
<td>27.853</td>
<td>17.899</td>
</tr>
<tr>
<td>7</td>
<td>2009-2010</td>
<td>29.995</td>
<td>8.910</td>
<td>27.303</td>
<td>20.677</td>
<td>16.77</td>
<td>29.693</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\text{Xi} & = 33.444 \\
\{\text{Xi} - \bar{X}\} & = 12.449 \\
\{\text{Xi} - \bar{X}\}^2 & = 154.98 \\
\end{align*}
\]

\[
\begin{align*}
\bar{X} & = \frac{20.994}{10} \\
\sum\{\text{Xi} - \bar{X}\}^2 & = 335.146 \\
\end{align*}
\]

Source: - Computed from the annual reports and accounts of the respective companies from 2003-2004 to 2012-2013.
Table 5.16 and Graph 5.91 reveal that the average operating profit ratio of study period was more than the cement industries average i.e. 33.444%. The average operating profit ratios of this industry were highest among all selected industry.

During the study period of this industry the highest ratio was 54.03%, in the year 2007-08 and the lowest ratio was 25.726% in the year 2011-12.

In the year 2003-04 the ratio was 31.793 which is now increased in 2004-05 and was 34.025 than it decreased in 2005-06 up to 31.014. In 2006-07 and 2007-08 again it increased 36.669 and 54.03. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 36.669, 29.995, 28.386, 25.726 and 26.132.
Gujarat Sidhee Cement Ltd.:-

Table 5.16 and Graph 5.92 reveal that the average operating profit ratio of study period was below than the cement industries average i.e. 12.551%. The average operating profit ratios of this industry were highest among all selected industry.

During the study period the highest ratio was 107.83, in the year 2003-04 and the lowest ratio was -11.53% in the year 2004-05.

In the year 2003-04 the ratio was 107.83 which is now decreased in 2004-05 and was -11.53 then again increased in 2005-06, 2006-07 and 2007-08 respectively -10.87, 4.162 and 13.288. In 2008-09 than it decreased to 6.123. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 8.91, -1.145, 1.599 and 7.157.
ANALYSIS AND EVALUATION

Sanghi Industries Ltd. :-

Table 5.16 and Graph 5.93 reveal that the average operating profit ratio of study period was more than the cement industries average i.e. 26.159%.

During the study period of this industry the highest ratio was 37.873%, in the year 2007-08 and the lowest ratio was 13.038% in the year 2003-04.

In the year 2003-04 the ratio was 13.038 which is now increased continually 2004-05, 2005-06, 2006-07 and 2007-08 respectively 24.633, 26.91, 32.686 and 37.873, than it decreased in 2008-09 and 2009-10 respectively 33.955 and 27.303. In 2009-10 again it increased to 27.489. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 17.568 and 20.137.
**Saurashtra Cement Ltd.**

Table 5.16 and Graph 5.94 reveal that the average operating profit ratio of study period was bellow than the norms i.e. 13.834%.

During the study period of this industry the highest ratio was 52.773, in the year 2012-13 and the lowest ratio was -11.84% in the year 2004-05.

In the year 2003-04 the ratio was 6.463 which is now decreased in 2004-05 and was -11.84 than it increased in 2005-06 and 2006-07 respectively 5.65 and 26.284. In 2007-08 again it decreased to 16.84. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 4.402, 20.677, 6.241, 10.845 and 52.773.
Shree Digvijay Cement Co. Ltd.:

Table 5.16 and Graph 5.95 reveal that the average operating profit ratio of study period was below than the cement industries average i.e. 16.188%.

During the study period of this industry the highest ratio was 37.498, in the year 2003-04 and the lowest ratio was 2.065% in the year 2004-05.

In the year 2003-04 the ratio was 37.498 which is now decreased in 2004-05 and was 2.065, than it increased in 2005-06 up to 27.853. In 2006-07 again it decreased to 23.641. In 2007-08 to 2012-13 it fluctuates and the ratio was respectively 14.581, 12.968, 16.77, 4.089, 6.151 and 16.267.
ANALYSIS AND EVALUATION

Ultratech Cement Ltd.:-

Table 5.16 and Graph 5.96 reveal that the average operating profit ratio of study period was more than the cement industries average i.e. 23.791%.

During the study period of this industry the highest ratio was 33.134, in the year 2007-08 and the lowest ratio was 11.329% in the year 2004-05.

In the year 2003-04 the ratio was 16.814 which is now decreased in 2004-05 and was 11.329 than it increased in 2005-06, 2006-07 and 2007-08 respectively 17.899, 30.133 and 33.134. In 2008-09 again it decreased to 28.349. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 29.693, 21.195, 24.682, and 24.686.
 NULL HYPOTHESIS (H₀) :-

There will be no significant difference in operating profit ratio in selected cement industry.

 ALTERNATIVE HYPOTHESIS (H₁) :-

There will be significant difference in operating profit ratio in selected cement industry.

 T-test :-

\[
S.D. = \sqrt{\frac{\sum (X_i - \bar{X})^2}{n - 1}}
\]

\[
S.D. = \sqrt{\frac{335.146}{6-1}}
\]

**S.D. = 8.187**

\[
T = \frac{\bar{X} - \mu}{\sigma} \times \sqrt{n}
\]

\[
T = \frac{20.994 - 0}{8.187} \times \sqrt{6}
\]

**T = 6.282**

\[
T_{cal} = 6.282 \quad T_{tab} = 2.571 \quad \text{(at 5% level)}
\]

\[
6.282 > 2.571
\]

\[
T_{cal} > T_{tab}
\]

T-test indicates that there was significant difference in the operating profit ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.
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