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4.1 CONCEPT OF LIQUIDITY:

By the term ‘liquidity’ is meant the debt-repaying capacity of an undertaking. It refers to the firm’s ability to meet claims of suppliers of goods, services and capital. According to archer and D’Amboise, liquidity means cash and cash availability, and it is from current operations and previous accumulations that cash are available, to take care of the claims of both the short-term ones. It has two dimensions; the short-term and the long-term liquidity. Short term liquidity implies the capacity of the undertaking, to repay the short term debt which means the same as the ability of the firm in meeting the currently maturing obligations from out of the current assets. The purpose of the short-term analysis is to derive a picture of the capacity of the firm to meet its short-term obligations out of its short-term resource that is to estimate the risk of supplying short-term capital to the firm. Analysis of the firm’s long-term position has for its rationale the delineation of the ability of a firm to meet its long-term financial obligations such as interest and dividend payment and repayment of principal. Long-term liquidity refers to the ability of the firm to retire long-term debt and interest and other long-run obligations. When relationship is established along these lines, it is assumed that in the long-run assets could be liquidated to meet the financial claims of the firm. Quite often the expression ‘liquidity’ is used to mean short-term liquidity of the industry.

In the present study, liquidity is taken to mean the short-term liquidity which refers to the ability of the undertaking to pay off current liabilities. This is chosen because the study relates to the management of short-term assets and liabilities. In other words, the long-run success of an undertaking lies in its ability to survive in the immediate future. Further, a company may have tremendous potential for profitability in the long-run but may languish due to inadequate liquidity. It is, therefore, short-term liquidity that has been considered crucial to the very existence of an enterprise.

4.2 MEASUREMENT OF LIQUIDITY:

Liquidity of an enterprise can be studied in two ways, namely, (I) Technical liquidity and (II) Operational liquidity. The difference between the two methods of liquidity measurement depends upon whether one assumes the ‘liquidation concept’ of
business as in case of the technical liquidity or the ‘going concern concept’ of business as in the case of the operational liquidity.

The first method of computation of liquidity is based on the assumption that they might become insolvent at any time and whether, in such an event, the current assets held by the undertaking would be sufficient to pay off the current liabilities. On the other hand, the computation of ‘operational liquidity’ attempts the measurement of the firm’s potential to meet the current obligations on the basis of net cash flows originating from out of its own operations with the view that a manufacturing enterprise cannot pay off current liabilities from its current assets when it is in the run. Working capital tends in financial analysis; the direction of change over a period of time is of crucial importance. Working capital is one of the important fields of financial management. It is, therefore, very essential for an analysis to make a study about the trends of the components of the working capital movements to provide a deep and broad base while examining the working capital management of an industry. This analysis will be provide a base to judge whether the practice and prevailing policy of the management with regard to working capital is good enough or an improvement is to be made in managing the working capital funds. Further, any one trend by itself is not very important and, therefore, an analyst should make comparison with related trends. To illustrate, an upward trend in working capital, coupled with a downward trend of current assets, inventories, accounts receivable, cash in bank balances and other current liabilities would usually be viewed favorably. All such conclusions throw light on one or more aspects of the working capital position and above to be reconciled with those other aspect. It is assumed under this approach that firms are going firms and hence the liabilities are met through the net cash flows arising out of their operations.

[I] TECHNICAL LIQUIDITY:

Technical liquidity is normally evaluated on the basis of the following ratios in a business enterprise.

(1) CURRENT RATIO:

Current ratio expresses the precise relation between current assets and liabilities. It is calculated by dividing current assets with current liabilities.
**Formula:** Current Ratio = \(\frac{\text{Current Assets}}{\text{Current Liabilities}}\)

It indicates the availability of current assets in rupees for every one rupee of current liabilities. A high ratio means that the firm has more investment in current assets. While a low ratio indicates that the firm in question is unable to retire its current liabilities. In fact, a satisfactory current ratio for any given firm is difficult to judge. For most manufacturing undertakings, a ratio of 2:1 is traditionally considered a benchmark of adequate liquidity. However, to some of the undertakings like public utilities and service firms, this standard ratio is not particularly useful in as much as they carry no inventories for sale. Current ratio is equally useful to both the outsider and management. To an outsider, it is a measure of the firm’s ability to meet its short-term claims. So far as the management concerned, the ratio discloses the magnitude of the current assets that the firm carries in relation to its current liabilities. As regards the outsider, the larger the ratio, the more liquid is the firm. But, from the management point of view, a larger ratio indicates excess investment in less profit-generating assets. On the contrary, a low current ratio or downward trend in the ratio indicate the inefficient management of working capital. Nevertheless, the current ratio is crude and quick measures of the firm’s liquidity as it is only a test of the quantity and not the quality. The limitation of this ratio as an indicator of liquidity lies in the size of the inventory of the enterprise. If inventory forms a high proportion of current assets, the 2:1 ratio might not be adequate, as a meaningful measure of liquidity.

**2) Quick or Acid-Test Ratio:**

Recognizing that inventory might not be very liquid or slow moving, this ratio takes the quickly realizable assets and measures them against current liabilities. This is a more refined if somewhat conservative estimate of the firm’s liquidity, since it establishes a relation between quick liquid assets and current liabilities. To be precise of quick assets is one that can be converted into cash immediately or reasonably soon without loss of value. For instance, cash is the most liquid of all assets. The other assets which are considered to be relatively liquid and include in the quick category are account and bills receivable and marketable securities. Inventories and period expenses are considered to be less liquid. Inventories normally require some time for realizing in to cash. The quick ratio is, then, expressed as a relation between quick assets and current liabilities, as
**Formula:** Quick Ratio = \( \frac{\text{Quick Assets}}{\text{Current Liabilities}} \)

Conventionally, a quick ratio of 1:1 is considered to be a more satisfactory measure of liquidity position of an enterprise. In fact, this ratio does not entirely supplant the current ratio; rather, it partially supplements current ratio and when used in conjunction with it, trends to give a better picture of the firm’s ability to meet its claims out of short-term assets.

(3) LIQUIDE RATIOS:

This ratio is known as balance sheet ratio. This ratio shows whether or not the company is able to pay its debts immediately, if required.

**Formula:** Liquid Ratio = \( \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}} \)

Whereby, **Liquid Assets**= Cash, Bank, Debtors, Bills receivables and immediate Salable securities (Stock is not include,)

**Liquid Liabilities**= include in all current liabilities excluding bank Overdraft

**Note:** (1) Normally, while calculating liquid assets, stock is deducted from current Assets as it are not salable immediately and therefore, it is not liquid assets.

(2) In the same way, bank overdraft is deducted from current liabilities, while Calculating liquid liabilities as it is not required to pay immediately.

**Uses:** This is a useful ratio to creditors, banks shroffs financers etc.

**Ideal Ratio:** this ideal ratio is normally 1:1 if it is a little higher, it is better.

**Limitation:** If collection is not made, regularly since long, the liquid position of a company is not said to be satisfactory, even if the ratio is 1:1

(4) DEBTORS TURNOVER:

This ratio is useful to know how speedily the collection of debts is made from debtors. As a result, one can know the collection- policy and its effectiveness. Velocity of policy collection is checked through this ratio.

**Formula:** Debtors Turnover = \( \frac{\text{Credit Sales}}{\text{Average Debtors}} \)
Whereby, \[ \text{Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2} \]

**Note:** Debtors include bills receivable also.

**Uses:** To know the efficiency and effectiveness of collection policy, this ratio is used. Finance companies which advance personal loans for scooters and cars etc. use this ratio well. The higher the ratio the speedier the collection is. If this ratio is not up to mark, drastic measures are required to make the recoveries speedy.

### (5) INVENTORY OR STOCK TURNOVER:

In a business, investment is made in plants and machineries, spare parts, raw material, work in progress, tools etc. Investment is also made in financed goods. Those items of stock are called inventories. If more investment is made, there will be loss of interest, warehouse expenses and internal-transfer expenses. On the other hand, if it is less on account of frequent purchases, a higher price will have to be paid.

To find out the proportion with sales, this ratio is established.

**Formula:** Inventory Turnover = \[ \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \]

Whereby, Cost of goods sold= Sales- Gross Profit

If operating stock is not given then closing stock is to be considered in place of average stock. When cost of sales and average stock are not available directly or indirectly then following formula should be applied.

**Formula:** Stock Turnover Ratio = \[ \frac{\text{Sales}}{\text{Closing Stock}} \]

**Uses:** This ratio is important to know how speedy the turnover of inventory is in a manufacturing concern. It can be said that the inventory is used efficiently if this ratio is high. If the ratio is low, more investment is made in inventory and hence measures should be taken to reduce the inventory.

### (6) FIXED ASSETS TURNOVER:

With the help of this ratio the profitability and efficiency of a firm is measured. The more the sales in relation to the amount invested in fixed assets, the more efficient is the use of fixed assets. If the sales are less as compared to investment in fixed assets,
it means that fixed assets are not adequately utilized in business. This ratio is calculated as under;

**Formula:** Fixed Assets Turnover = \( \frac{\text{sales or Cost of sales}}{\text{Fixed Assets}} \)

**Uses:** If the ratio is lower, it indicates that more investment is made in the business. Vice versa, it will indicate the efficient use of fixed assets.

**Limitation:**
If the assets are old, very naturally the value of the assets is less on account of depreciation, and hence the ratio will be higher and vice versa if the company has purchased new assets, the rate will be higher. This leads to a wrong decision. Valuation of assets, rate of depreciation, methods of depreciation also affect the ratio. It should also be considered.

(7) **TOTAL ASSETS TURNOVER OR VELOCITY:**
To ascertain the efficiency and profitability of business, the total assets are compared with sales. This ratio is intended to measure the effectiveness of the employment of resources, the command over which has been financed by the firm. Turnover analysis is a key factor in determining profitability.

**Formula:** Total Assets Turnover or Velocity = \( \frac{\text{sales or Cost of sales}}{\text{Total Assets}} \)

**Note:** (1) Before using and arriving at decision with the help of this ratio, the following factors should be considered:
(I) Types of assets (II) Age of assets (III) Rate and method of depreciation
(2) More sales do not mean more profit. Profit depends upon cost and selling price. Sales also depend upon the management efficiency.
(3) Valuation of assets and stock and the changes made therein also should be Considered

**Uses:** The more this ratio is the more useful and fruitful the assets are. It means less investment and more sales
Limitations: The ratio will be more, if the assets are old and have been over depreciated. The situation leads the company to a wrong direction. The ratio also changes if the valuation in the value of stock or assets will frequently change.

(II) OPERATIONAL LIQUIDITY:
Operational liquidity which is based on the going concern concept of business is determined by expressing cash flows as a percentage of current liabilities. It is verified here whether the cement industry included in the study would be able to discharge its current liabilities from the cash flows generated.

4.3 DETERMINATES OF LIQUIDITY:
So far, the measurement of liquidity was accomplished by comparing current assets with current liabilities. But, focus has not been thrown on the factors that determine liquidity. Several factors influence the liquidity position of an undertaking. Significant among them are;

(A) The nature and volume of business;
(B) The size and composition of current assets and current liabilities;
(C) The method of financing current assets;
(D) The level of investment in fixed assets in relation to the total long-term funds; and
(E) The control over current assets and current liabilities.

Firstly, the nature and volume of business influence the liquidity of an enterprise. Depending upon the nature of the units, some firms require more of working capital then others. For some of the concerns like public utilities, less proportion of working capital is needed, vis-a-vis, manufacturing organization. Beside an increasing volume of business also enhance the funds needed to finance current assets. In these situations if the firm does not divert some funds from the long-term sources, the liquidity ratios would be adversely affected. Secondly, the size and the composition of current assets and current liabilities were the basic factors that determine the liquidity of an enterprise. If a higher investment is made in the current assets in relation to current liabilities, there would be a corresponding rise in the current ratio. While quickly and other ratios depend on the composition of current assets. Thirdly, the method of financing current assets causes changes in the liquidity ratios. If greater part of the current assets is financed from long-term sources, greater also would be the current ratio. On the other hands, if the concern depends much on the outside sources for
financing current assets, the ratio would fall. Fourthly, the absorption of funds by fixed assets is one of the major causes of low liquidity. As more and more of the firm’s total funds are absorbed in this process, there will be little left to finance short-term needs and therefore liquidity ratios fall. Hence, the degree of liquidity is determined by the attitude of the management in the allocation of permanent funds between fixed and current assets. Finally, stringent control over the current item causes fluctuations in the liquidity ratios. If investment in current assets is not taken care of properly the firm may accumulate excess liquidity, which may adversely affect the profitability. On the contrary, unduly strict control of the investment in all types of current assets may eventually endanger the existence of the firm owing to non-compliance of claims because of the shortage of funds. Similarly, control over current liabilities also pays an important role in determining liquidity of an enterprise by requiring the firm to contribute necessary funds from long-term sources to keep up the liquidity position.

4.4 EFFECT OF LIQUIDITY:
Liquidity of a business is one of the key factors determining its propensity to succeed or fail. Both excess and shortage of liquidity affect the interest of the firm. By excess liquidity in a business enterprise, it is meant that it is carrying higher current assets than are warranted by the requirement of production. Hence, it indicates blocking up of funds in current assets without any return. Besides, the firm has to incur costs to carry them overtime. Further, the value of such assets would depreciate in times if inflation, if they are left idle. Owing to the cornering of capital, the firm may have resort to additional borrowing even at a fancy price. On the other hand, the impact of inadequate liquidity is more severe. The losses due to insufficient liquidity would be many. Production may have to be curtailed or stopped from the lack of necessary funds. As the firm will not be in a position to pay of the debts, the credit worthiness of the firm is badly affected. In general, the smaller the amount of default, the higher would be the damage done to the image of the unit. In addition, the firm will not be able to secure funds from outside sources, and the existing creditors may even force the firm in to bankruptcy. Further, insufficient funds will not allow the concern to launch any profitable project or earn attractive rates of return on the existing investment. Between the excess and inadequate liquidity, the latter is considered to be more detrimental, since the lake of liquidity may endanger the very
existence of the business enterprises. Besides, both the excess and inadequate liquidity adversely affect the profitability, but liquidity itself is influenced by the low profitability. If the firm is earning very low rates of return or incurring losses, there would be no funds generated by the operations of the company which are essential to retire the debts. In fact, there is a tangle between liquidity and profitability, which eventually determines the optimum level of investment of current assets. Of the liquidity and profitability, the former assumes further importance since profits could be earned with ease in subsequent periods, once the image of the unit maintained. But, if the firm loses its face in the market for wants to liquidity, it requires. Herculean efforts to restore it position. Instances are not lacking of great industrial giants, with comfortable book profit coming to grief for want to liquidity.

4.5 ANALYSIS OF LIQUIDITY OF THE CEMENT INDUSTRY:

The concept of liquidity within a business is vital to the understanding of financial management as it is the basic criteria of test the short-term liquidity position of the enterprise. Liquidity may be defined as the ability to realize value in money the real liquid assets. It has two dimensions. The time required converting the assets into money, and risks involved.

(1) The certainly of the reliable price. Liquidity refers to affirm continuous ability to meet its short-term maturing obligations. Since cash is used to meet a firm’s obligations, emphasis is given on holding large investment in current assets which include cash and ‘near cash’ items like receivables, short-term securities etc. thus, holding relativity large investment in current assets will result in no difficulty in paying the claims of the creditors and other.

According to Mauraw Bahadur, “Analysis of liquidity provides of measure of ability of the enterprise to meet its obligation. It is not sufficient that the final accounts show a profit and the balance sheet rosy pictures of financial health of the enterprise. All this will look meaningless, unless the inflows and outflows are so regulate that at all times there is enough cash available to meet obligation as and when they mature. The analysis of liquidity should therefore, be taken in to consideration, the size of the components of current assets which can be readily converted in to cash to meet maturing liability. The size, character a sequence of maturity of liabilities are also of significant importance and deserve due attention.” The term liquid assets is use to
describe money and assets that are readily convertible into money. Liquidity has two dimensions viz. time and risk.

The time dimension of liquidity concerns the speed with assets other than cash. The risk dimension raises the question of the degree of certainty about the conversion of inventories, receivable and other into cash with a little sacrifice in price as possible. Viewed from these, all assets will have a degree of liquidity and assets that comprise cash and near cash item in most liquid assets. The liquidity of any business results from its ability to generate cash. The financially sound company is able to build up a reserve of cash in excess of requirement for operation. This surplus of cash is then available for the financing of expansion and for payment of debts and dividends. The working capital of a business represents the amount of current assets which the enterprise has in excess of the claims of the current creditors and with which, therefore, it is free to work from this statement it would appear that the greater the degree of liquidity of the business, and so it is alleged that the amount of working capital is a measure of liquidity.

The word liquidity was used by the financial accounting standard board (FASB) “the amount of time that is expected to elapse until an asset is realized or otherwise converted into cash or until liabilities has been paid”. Liquidity therefore involves the amount of investment in the group of assets to meet short-term maturing obligations-creditors and others. From the point of financing, normally a major portion of the fund required for financing current assets is obtained from long-term sources, equity and for debts, while the rest is met from short-term sources. It goes without saying that if the maturing obligation are met continuously as and when become due, creditors and others will have a feeling of confidence in the financial strength of the firm and a going firm will accordingly face difficulty in holding a particular level of current assets. But failure to meet such obligation on a continuous basis will affect the reputation, and hence credit worthiness of a firm, which will, in turn, make it more difficult to continue to finance the level of current assets from short-term source. The word liquidity suggested a kind of measurement or qualification of the prospect of meeting maturing obligations. In a sound business, the sources of finance should be supplemented by own cash generation. The quantum of conversion of current assets into cash or in other words, near liquid assets may have to be supplemented by outside borrowing to make sufficient liquid fund available to meet current obligations. The current obligations will also include the repayment of borrowing.
At last we can say that the term ‘liquidity’ means conversion of assets into cash during the normal course of business and to have regular flow of cash to meet outside current liabilities (generally within a year) as and when due and payable and also to ensure money for day-to-day business operations. Hence, the flow of current assets should circulate within a year, so that timely payment is made to outsiders for interest, dividends etc. if the major part of current assets is blocked in inventories and credit sales (sundry debtors), not any ready cash will not be available to pay current debts but also there is a risk of shortage in the total current assets available because of possible fall in the value of inventories, possible losses in account of bad debts. The quality of current assets is therefore very important for analyzing liquidity. However, a firm has a strong liquidity if it is able:

1. To meet the claims of short-term creditors.
2. To maintain sufficient working capital for efficient normal operations.
3. To meet current interest and dividend requirements.
4. To maintain a favorable credit rating.

The efficient management of working capital requires constant attention to process of rapid conversion of receivable and inventory into cash.

For the analyzing of liquidity of the cement industry following ratio have been computed.

1. Current Ratios
2. Quick Ratios
3. Liquid Ratios
4. Debtors Ratios
5. Inventory and Stock Turnover Ratios
6. Fixed Assets Turnover OR Velocity
7. Total Assets Turnover OR Velocity
(4.5.1) **CURRENT RATIOS OF CEMENT INDUSTRY:**

**Table No. 4.5.1**  
*Current Ratios (In Times) Of the Cement industries Under Study from – 2007-08 to 2011-12*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>Ultratech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>1.26</td>
<td>2.83</td>
<td>0.53</td>
<td>0.58</td>
<td>0.85</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>0.89</td>
<td>1.49</td>
<td>3.20</td>
<td>0.59</td>
<td>0.78</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>1.07</td>
<td>1.32</td>
<td>1.50</td>
<td>0.67</td>
<td>0.62</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>1.17</td>
<td>1.74</td>
<td>1.00</td>
<td>0.58</td>
<td>0.92</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>1.22</td>
<td>1.17</td>
<td>1.14</td>
<td>0.86</td>
<td>0.86</td>
</tr>
</tbody>
</table>

|          | \( \bar{x} \) | 1.122                             | 1.710                             | 1.474                               | 0.656                                | 0.806                   |

\[ \text{ss between} = \sum (x_i - \bar{x})^2 = 3.90 \]

\[ \text{ss within} = \sum (x_i - \bar{x})^2 = 6.09 \]

**ss total variation** = ss between + ss within = 3.90 + 6.09 = 9.99

**Sources:** Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Table 4.5.1 and Graph 4.5.1(E) reveals that the current ratio of study period was below than the norms i.e. 1.122.

During the study period of this industry the highest ratio was 1.26, in the year 2007-2008 and the lowest ratio was 0.89, in the year 2008-2009. It is so believed that liquidity of company is higher if the ratio is higher. The ideal ratio is 2:1 it means that if the current assets are twice the current liabilities, the liquid position of a company is said to be satisfactory.

In the year 2007-2008 the ratio was increased it was 1.26, and after than the decreased in the year 2008-2009, the ratio was 0.89, it is lowest ratio of the study period in this industry and after than again increased in the every year 2009-2010, 2010-2011, 2011-2012 the ratios was 1.07, 1.17 and 1.22.

A weak condition current ratio compare with ideal ratio 2:1. But normally good condition of this industry compared with other industries.

This ratio is measure working capital position and useful to creditors and short-term money-lenders. With the help of this ratio, one can judge whether or not the company is able to pay back the debt within a short period.

\* Ambuja Cement Pvt. Ltd.


Table 4.5.1 and Graph 4.5.1(B) reveals that the current ratio of study period was below than the norms i.e. 1.710.

During the study period of this industry the highest ratio was 2.83, in the year 2007-2008 and the lowest ratio was 1.17, in the year 2011-2012. It is so believed that liquidity of company is higher if the ratio is higher. The ideal ratio is 2:1 it means that if the current assets are twice the current liabilities, the liquid position of a company is said to be satisfactory.

In the year 2007-2008 the ratio was increased it was 2.83, and after than the decreased in the year 2008-2009, the ratio was 1.49, and after than again decreased in the year 2009-2010, the ratio was 1.32, and again increased ratio in the year 2010-2011, it was 1.74, 2011-2012 the ratios was 1.17.

A good condition current ratio compare with ideal ratio 2:1. But good condition of this industry compared with other industries.

This ratio is measure working capital position and useful to creditors and short-term money-lenders. With the help of this ratio, one can judge whether or not the company is able to pay back the debt within a short period.
Table 4.5.1 and Graph 4.5.1(C) reveals that the current ratio of study period was below than the norms i.e. 1.474.

During the study period of this industry the highest ratio was 3.20, in the year 2008-2009 and the lowest ratio was 0.53, in the year 2007-2008. It is so believed that liquidity of company is higher if the ratio is higher. The ideal ratio is 2:1 it means that if the current assets are twice the current liabilities, the liquid position of a company is said to be satisfactory.

In the year 2007-2008 the ratio was decreased it was 0.53, and after than the increased in the year 2008-2009, the ratio was 3.20, and after than again decreased in the year 2009-2010, 2010-2011 the ratios was 1.50, and 1.00 again normally increased ratio in the year 2011-2012 the ratios was 1.14.

A normally good condition of this industry for current ratio compare with ideal ratio 2:1. But good condition of this industry compared with other industries.

This ratio is measure working capital position and useful to creditors and short-term money-lenders. With the help of this ratio, one can judge whether or not the company is able to pay back the debt within a short period.
Table 4.5.1 and Graph 4.5.1(D) reveals that the current ratio of study period was below than the norms i.e. 0.656.

During the study period of this industry the highest ratio was 0.86, in the year 2011-2012 and the lowest ratio was 0.58, in the years 2007-2008 and 2010-2011. It is so believed that liquidity of company is higher if the ratio is higher. The ideal ratio is 2:1 it means that if the current assets are twice the current liabilities, the liquid position of a company is said to be satisfactory.

In the year 2007-2008 the ratio was decreased it was 0.58, and after than the normally increased in the year 2008-2009, the ratio was 0.59, and after than increased in the year 2009-2010, the ratio was 0.67, and again decreased ratio in the year 2010-2011 the ratios was 0.58, and again increased ratio in the year 2011-2012 the ratio was 0.86.

A weak condition of this industry for current ratio compare with ideal ratio 2:1. But good condition of this industry compared with other industries.

This ratio is measure working capital position and useful to creditors and short-term money-lenders. With the help of this ratio, one can judge whether or not the company is able to pay back the debt within a short period.
Binani Cement Pvt. Ltd.

Table 4.5.1 and Graph 4.5.1(E) reveals that the current ratio of study period was below than the norms i.e. 0.806.

During the study period of this industry the highest ratio was 0.92, in the year 2010-2011 and the lowest ratio was 0.62, in the years 2009-2010. It is so believed that liquidity of company is higher if the ratio is higher. The ideal ratio is 2:1 it means that if the current assets are twice the current liabilities, the liquid position of a company is said to be satisfactory.

In the year 2007-2008 the ratio was increased it was 0.85, and after than the normally decreased in the year 2008-2009, the ratio was 0.78, and after again decreased ratio in the year 2009-2010, the ratio was 0.62, and again increased ratio in the year 2010-2011 the ratios was 0.92, and again decreased ratio in the year 2011-2012 the ratio was 0.86.

A weak condition of this industry for current ratio compare with ideal ratio 2:1. But good condition of this industry compared with other industries.

This ratio is measure working capital position and useful to creditors and short-term money-lenders. With the help of this ratio, one can judge whether or not the company is able to pay back the debt within a short period.
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.

F-test:

\[
\bar{x} = \frac{\sum x_1 + \sum x_2 + \sum x_3 + \sum x_4 + \sum x_5}{k}
\]

\[
= \frac{1.122 + 1.71 + 1.474 + 0.656 + 0.806}{5}
\]

\[
\bar{x} = 1.15
\]

Now we work out \( ss \) between and \( ss \) within samples:

\( ss \) between = \( n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2 \)

\[
= 0.00 + 1.57 + 0.52 + 1.22 + 0.59
\]

\[
= 3.90
\]

\( ss \) within = \( \sum (x_1 - \bar{x}_1)^2 + \sum (x_2 - \bar{x}_2)^2 + \sum (x_3 - \bar{x}_3)^2 + \sum (x_4 - \bar{x}_4)^2 + \sum (x_5 - \bar{x}_5)^2 \)

\[
= 0.07 + 1.74 + 4.2 + 0.04 + 0.04
\]

\[
= 6.09
\]

\( ss \) for total variance = \( ss \) between + \( ss \) within

\[
= 3.90 + 6.09
\]

\[
= 9.99
\]
We can now set up the F-table for this problem:

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>ss</th>
<th>d.f.</th>
<th>MS</th>
<th>F-ratio</th>
<th>5% F-limit (form the F-table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>3.90</td>
<td>(5−1)=4</td>
<td>3.90/4=0.98</td>
<td>0.98/0.305=3.21</td>
<td>F (4,20)=2.87</td>
</tr>
<tr>
<td>Within sample</td>
<td>6.09</td>
<td>(25−5)=20</td>
<td>6.09/20=0.305</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.99</td>
<td>(25−1)=24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

The above table shows that the calculated value of $F$ is 3.21 which is more than the table value of 2.87 at 5% level with d.f. being $V_1=4$ and $V_2=20$ and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
(4.5.2) **QUICK RATIOS:**

**Table No. 4.5.2**

*Quick Ratios (In Times) Of the Cement industries Under Study from – 2007-08 to 2011-12*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>Ultratech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>0.74</td>
<td>2.40</td>
<td>0.85</td>
<td>0.38</td>
<td>0.62</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>0.57</td>
<td>1.42</td>
<td>2.33</td>
<td>0.34</td>
<td>0.49</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>0.75</td>
<td>0.99</td>
<td>0.30</td>
<td>0.30</td>
<td>0.36</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>0.90</td>
<td>1.52</td>
<td>0.41</td>
<td>0.33</td>
<td>0.68</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>0.95</td>
<td>0.61</td>
<td>0.44</td>
<td>0.57</td>
<td>0.63</td>
</tr>
</tbody>
</table>

**X̄**

| 0.782 | 1.388 | 0.866 | 0.384 | 0.556 | **X̄ = 0.795** |

**ss between**

| 0.00  | 1.76  | 0.02  | 0.84  | 0.29  | \(\sum = n(x_i - \bar{x})^2 = 2.91\) |

**ss within**

| 0.08  | 1.80  | 2.85  | 0.04  | 0.06  | \(\sum (x_i - \bar{x})^2 = 4.82\) |

**SS total variation**

| ss between + ss within = 2.91 + 4.82 = 7.73 |

**Sources:** Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Ambuja Cement Pvt. Ltd.

Table 4.5.2 and Graph 4.5.2(A) reveal that the Quick ratio of study period was below than the norms i.e. 0.782.

During the study period of this industry the highest ratio was 0.95, in the year 2010-2011 and the lowest ratio was 0.57, in the years 2008-2009. To get quick liquid assets, debtors also are deducted. It is possible that collection may not be made immediately as and when required.

In the year 2007-2008 the ratio was increased it was 0.74, and after than the normally decreased in the year 2008-2009, the ratio was 0.57, and after again increased ratio in the year 2009-2010, the ratio was 0.75, and again increased ratios in the years 2010-2011, and 2011-2012 the ratios was 0.90, and 0.95.

A weak condition of this industry for quick ratio compare with ideal ratio 1:1. But normally condition of this industry compared with other industries.

It should be below 1:1. Sometime 1:1 is also considered to be an ideal ratio. If liquid (Quick) assets are 2/3 of the liquid liabilities, it is satisfactory.
Sanghi Cement Pvt. Ltd.

Table 4.5.2 and Graph 4.5.2(B) reveals that the Quick ratio of study period was below than the norms i.e. 1.388.

During the study period of this industry the highest ratio was 2.40, in the year 2007-2008 and the lowest ratio was 0.61, in the years 2011-2012. To get quick liquid assets, debtors also are deducted. It is possible that collection may not be made immediately as and when required.

In the year 2007-2008 the ratio was increased it was 2.40, and after than the normally decreased in the year 2008-2009, the ratio was 1.42, and after again decreased ratio in the year 2009-2010, the ratio was 0.99, and again increased ratios in the year 2010-2011, the ratio was 1.52 and again decreased ratio in the year 2011-2012 the ratio was 0.61.

A good condition of this industry for quick ratio compare with ideal ratio 1:1. But good condition of this industry compared with other industries.

It should be below 1:1. Sometime 1:1 is also considered to be an ideal ratio. If liquid (Quick) assets are 2/3 of the liquid liabilities, it is satisfactory.
Table 4.5.2 and Graph 4.5.2(C) reveals that the Quick ratio of study period was below the norms i.e. 0.866.

During the study period of this industry the highest ratio was 2.33, in the year 2008-2009 and the lowest ratio was 0.30, in the years 2009-2010. To get quick liquid assets, debtors also are deducted. It is possible that collection may not be made immediately as and when required.

In the year 2007-2008 the ratio was decreased it was 0.85, and after than the normally decreased in the year 2008-2009, the ratio was 2.33, and after again decreased ratio in the year 2009-2010, the ratio was 0.30, and again increased ratios in the year 2010-2011, the ratio was 0.41 and again increased ratio in the year 2011-2012 the ratio was 0.44.

A normally good condition of this industry for quick ratio compare with ideal ratio 1:1. But normally good condition of this industry compared with other industries.

It should be below 1:1. Sometime 1:1 is also considered to be an ideal ratio. If liquid (Quick) assets are 2/3 of the liquid liabilities, it is satisfactory.
Ultratech Cement Pvt. Ltd.

Table 4.5.2 and Graph 4.5.2(D) reveals that the Quick ratio of study period was below than the norms i.e. 0.384.

During the study period of this industry the highest ratio was 0.57, in the year 2011-2012 and the lowest ratio was 0.30, in the years 2009-2010. To get quick liquid assets, debtors also are deducted. It is possible that collection may not be made immediately as and when required.

In the year 2007-2008 the ratio was increased it was 0.38, and after than the normally decreased in the year 2008-2009, the ratio was 0.34, and after again decreased ratio in the year 2009-2010, the ratio was 0.30, and again increased ratios in the year 2010-2011, the ratio was 0.33 and again increased ratio in the year 2011-2012 the ratio was 0.57.

A weak condition of this industry for quick ratio compare with ideal ratio 1:1. But normally condition of this industry compared with other industries.

It should be below 1:1. Sometime 1:1 is also considered to be an ideal ratio. If liquid (Quick) assets are 2/3 of the liquid liabilities, it is satisfactory.

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Binani Cement Pvt. Ltd.

Table 4.5.2 and Graph 4.5.2(E) reveals that the Quick ratio of study period was below than the norms i.e. 0.556.

During the study period of this industry the highest ratio was 0.68, in the year 2010-2011 and the lowest ratio was 0.36, in the years 2009-2010. To get quick liquid assets, debtors also are deducted. It is possible that collection may not be made immediately as and when required.

In the year 2007-2008 the ratio was increased it was 0.62, and after than the normally decreased in the year 2008-2009, the ratio was 0.49, and after again decreased ratio in the year 2009-2010, the ratio was 0.36, and again increased ratios in the year 2010-2011, the ratio was 0.68 and again decreased ratio in the year 2011-2012 the ratio was 0.63.

A weak condition of this industry for quick ratio compare with ideal ratio 1:1. But normally condition of this industry compared with other industries.

It should be below 1:1. Sometime 1:1 is also considered to be an ideal ratio. If liquid (Quick) assets are 2/3 of the liquid liabilities, it is satisfactory.
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.

F-Test:

$$\bar{x} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \bar{x}_4 + \bar{x}_5}{k}$$

$$= \frac{0.782 + 1.388 + 0.866 + 0.384 + 0.556}{5}$$

$$= \frac{0.795}{5}$$

$$\bar{x} = 0.795$$

Now we work out ss between and ss within samples:

SS between = \(n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2\)

$$= 0.00 + 1.76 + 0.02 + 0.84 + 0.29$$

$$= 2.91$$

SS within = \(\sum (x_1 - \bar{x}_1)^2 + \sum (x_2 - \bar{x}_2)^2 + \sum (x_3 - \bar{x}_3)^2 + \sum (x_4 - \bar{x}_4)^2 + \sum (x_5 - \bar{x}_5)^2\)

$$= 0.08 + 1.80 + 2.85 + 0.04 + 0.06$$

$$= 4.82$$

SS for total variance = SS between + SS within

$$= 2.91 + 4.82$$

$$= 7.73$$
We can now set up the F- table for this problem:

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>ss</th>
<th>d.f.</th>
<th>MS</th>
<th>F- ratio</th>
<th>5% F- limit (form the F- table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>2.91</td>
<td>(5 – 1) = 4</td>
<td>2.91/4</td>
<td>0.73/0.24</td>
<td>F (4,20) = 2.87</td>
</tr>
<tr>
<td>Within sample</td>
<td>4.82</td>
<td>(25 – 5) = 20</td>
<td>4.82/20</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7.73</td>
<td>(25 – 1) = 24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

The above table shows that the calculated value of F is 3.04 which is more than the table value of 2.87 at 5% level with d.f. being V₁ = 4 and V₂ = 20 and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
### 4.5.3 LIQUID RATIOS:

**Table No. 4.5.3**

*Liquid Ratios (In Times) Of the Cement industries Under Study from – 2007-08 to 2011-12*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>Ultratech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>0.87</td>
<td>0.58</td>
<td>1.51</td>
<td>0.53</td>
<td>0.33</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>0.63</td>
<td>1.00</td>
<td>1.28</td>
<td>0.48</td>
<td>0.41</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>0.62</td>
<td>0.60</td>
<td>1.13</td>
<td>0.56</td>
<td>0.38</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>1.47</td>
<td>-0.09</td>
<td>0.88</td>
<td>0.43</td>
<td>0.57</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>1.52</td>
<td>0.68</td>
<td>0.98</td>
<td>0.55</td>
<td>0.42</td>
</tr>
</tbody>
</table>

|         | \(\bar{x}\) | 1.022                             | 0.554                              | 1.15                                 | 0.510                                 | 0.422                   | \(\bar{x} = 0.732\) |
| ss between |         | 0.42                             | 0.16                               | 0.87                                 | 0.25                                  | 0.48                    | \(\sum = n(\bar{x} - \bar{x})^2 = 2.18\) |
| ss within |         | 0.78                             | 0.63                               | 0.25                                 | 0.00                                  | 0.02                    | \(\sum(\bar{x}i - \bar{x})^2 = 1.68\) |

**ss total variation** = ss between + ss within = 2.18 + 1.68 = 3.86

**Sources:** Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Table 4.5.3 and Graph 4.5.3(A) reveal that the Liquid ratio of study period was below than the norms i.e. 1.022.

During the study period of this industry the highest ratio was 1.52, in the year 2011-2012 and the lowest ratio was 0.62, in the years 2009-2010. If collection is not made, regularly since long, the liquid position of a company is not said to be satisfactory, even if the ratio is 1:1.

In the year 2007-2008 the ratio was increased it was 0.87, and after than the normally decreased in the year 2008-2009, the ratio was 0.63, and after again decreased ratio in the year 2009-2010, the ratio was 0.62, and again increased ratios in the year 2010-2011, the ratio was 1.47 and again increased ratio in the year 2011-2012 the ratio was 1.52.

A weak condition in the beginning and after than good condition of this industry for liquid ratio compare with ideal ratio 1:1. But good condition of this industry compared with other industries.

The ideal ratio is normally 1:1 if it is a little higher, it is better.
Sanghi Cement Pvt. Ltd.

Table 4.5.3 and Graph 4.5.3(B) reveals that the Liquid ratio of study period was below than the norms i.e. 0.554.

During the study period of this industry the highest ratio was 1.00, in the year 2007-2008 and the lowest ratio was -0.09, in the years 2010-2011. If collection is not made, regularly since long, the liquid position of a company is not said to be satisfactory, even if the ratio is 1:1.

In the year 2007-2008 the ratio was decreased it was 0.58, and after than the normally increased in the year 2008-2009, the ratio was 1.00, and after again decreased ratio in the year 2009-2010, the ratio was 0.60, and again decreased ratio in the year 2010-2011, the ratio was -0.09 and again increased ratio in the year 2011-2012 the ratio was 0.68.

A normally good condition in the beginning and after than weak condition of this industry for liquid ratio compare with ideal ratio 1:1. But good condition of this industry compared with other industries.

The ideal ratio is normally 1:1 if it is a little higher, it is better.
Table 4.5.3 and Graph 4.5.3(C) reveals that the Liquid ratio of study period was below than the norms i.e. 1.150.

During the study period of this industry the highest ratio was 1.51, in the year 2007-2008 and the lowest ratio was 0.88, in the years 2010-2011. If collection is not made regularly since long, the liquid position of a company is not said to be satisfactory, even if the ratio is 1:1.

In the year 2007-2008 the ratio was increased it was 1.51, and after than the normally decreased in the year 2008-2009, 2009-2010 and 2010-2011 the ratios was the 1.28, 1.13 and 0.88 after again normally increased ratio in the year 2011-2012, the ratio was 0.98.

A good condition in the beginning and after than weak condition of this industry for liquid ratio compare with ideal ratio 1:1 but good condition of this industry compared with other industries.

The ideal ratio is normally 1:1 if it is a little higher, it is better.
Ultratech Cement Pvt. Ltd.

Table 4.5.3 and Graph 4.5.3(D) reveals that the Liquid ratio of study period was below than the norms i.e. 0.510.

During the study period of this industry the highest ratio was 0.56, in the year 2009-2010 and the lowest ratio was 0.43, in the years 2010-2011. If collection is not made, regularly since long, the liquid position of a company is not said to be satisfactory, even if the ratio is 1:1.

In the year 2007-2008 the ratio was increased it was 0.53, and after than the normally decreased in the year 2008-2009, the ratio was 0.48, and after again increased ratio in the year 2009-2010, the ratio was 0.56, and again decreased ratio in the year 2010-2011, the ratio was 0.43 and again increased ratio in the year 2011-2012 the ratio was 0.55.

A weak condition in the beginning and after than weak condition of this industry for liquid ratio compare with ideal ratio 1:1. But good condition of this industry compared with other industries.

The ideal ratio is normally 1:1 if it is a little higher, it is better.
Table 4.5.3 and Graph 4.5.3(E) reveals that the Liquid ratio of study period was below than the norms i.e. 0.422.

During the study period of this industry the highest ratio was 0.57, in the year 2010-2011 and the lowest ratio was 0.33, in the years 2007-2008. If collection is not made, regularly since long, the liquid position of a company is not said to be satisfactory, even if the ratio is 1:1.

In the year 2007-2008 the ratio was decreased it was 0.33, and after than the normally increased in the year 2008-2009, the ratio was 0.41, and after again decreased ratio in the year 2009-2010, the ratio was 0.38, and again increased ratio in the year 2010-2011, the ratio was 0.57 and again decreased ratio in the year 2011-2012 the ratio was 0.42.

A weak condition in the beginning and after than weak condition of this industry for liquid ratio compare with ideal ratio 1:1. But good condition of this industry compared with other industries.

The ideal ratio is normally 1:1 if it is a little higher, it is better.
**NULL HYPOTHESIS (H₀):**
There will be no significant difference in Liquid ratio in selected cement industry.

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

**F-Test:**

\[
\bar{x} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \bar{x}_4 + \bar{x}_5}{k}
\]

\[
= \frac{1.022 + 0.554 + 1.15 + 0.510 + 0.422}{5}
\]

\[
\bar{x} = 0.732
\]

Now we work out ss between and ss within samples:

\[
ss \text{ between} = n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2
\]

\[
= 0.42 + 0.16 + 0.87 + 0.25 + 0.48
\]

\[
= 2.18
\]

\[
ss \text{ within} = \sum (x_1 - \bar{x})^2 + \sum (x_2 - \bar{x})^2 + \sum (x_3 - \bar{x})^2 + \sum (x_4 - \bar{x})^2 + \sum (x_5 - \bar{x})^2
\]

\[
= 0.78 + 0.63 + 0.25 + 0.00 + 0.02
\]

\[
= 1.68
\]

\[
ss \text{ for total variance} = ss \text{ between} + ss \text{ within}
\]

\[
= 2.18 + 1.68
\]

\[
= 3.86
\]
We can now set up the F-table for this problem:

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>ss</th>
<th>d.f.</th>
<th>MS</th>
<th>F-ratio</th>
<th>5% F-limit (form the F-table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>2.18</td>
<td>(5 – 1) = 4</td>
<td>2.18/4 = 0.55</td>
<td>0.55/0.08 = 6.88</td>
<td>F (4,20) = 2.87</td>
</tr>
<tr>
<td>Within sample</td>
<td>1.68</td>
<td>(25 – 5) = 20</td>
<td>1.68/20 = 0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.86</td>
<td>(25 – 1) = 24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

The above table shows that the calculated value of $F$ is 3.04 which is more than the table value of 2.87 at 5% level with d.f. being $V_1 = 4$ and $V_2 = 20$ and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
(4.5.4) DEBTOR’S TURNOVER:

Table No. 4.5.4

Debtors Turnover Ratios (In Times) Of the Cement industries
Under Study from – 2007-08 to 2011-12

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>Ultratech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>9</td>
<td>4</td>
<td>11</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>13</td>
<td>2</td>
<td>17</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>8</td>
<td>2</td>
<td>23</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>10</td>
<td>1</td>
<td>6</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$\bar{x}$</th>
<th>9.2</th>
<th>2.6</th>
<th>12</th>
<th>13.6</th>
<th>5.6</th>
</tr>
</thead>
</table>

ss between | 1.8     | 180     | 57.8   | 125    | 45       |

ss within  | 26.80   | 7.20    | 264    | 27.20  | 51.20    |

ss total variation  | ss between + ss within = 409.60 + 376.40 = 786

Sources: Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Table 4.5.4 and Graph 4.5.4(A) reveal that the Debtor’s turnover of study period was below than the norms i.e. 9.2.

During the study period of this industry the highest ratio was 13, in the year 2008-2009 and the lowest ratio was 6, in the years 2010-2011. To know the efficiency and effectiveness of collection policy, this ratio is used. The higher the ratio the speedier the collection is. If this ratio is not up to mark, drastic measures are required to make the recoveries speedy.

In the year 2007-2008 the ratio was decreased it was 9, and after than the normally increased in the year 2008-2009, the ratio was 13, and after again decreased ratio in the year 2009-2010, the ratio was 8, and again decreased ratio in the year 2010-2011, the ratio was 6 and again increased ratio in the year 2011-2012 the ratio was 10.

A normally condition of this industry for debtor’s turnover compare with ideal ratio is the higher the ratio the more speedy the collection is.

This ratio shows us how ever for collection in the accounting period from debtors. Once can know the efficiency or otherwise of collection policy.

❖ Ambuja Cement Pvt. Ltd.
Sanghi Cement Pvt. Ltd.

Table 4.5.4 and Graph 4.5.4(B) reveals that the Debtor’s turnover of study period was below than the norms i.e. 2.6.

During the study period of this industry the highest ratio was 4, in the year 2008-2009, and 2010-2011 the lowest ratio was 1, in the years 2010-20111. To know the efficiency and effectiveness of collection policy, this ratio is used. The higher the ratio the speedy the collection is. If this ratio is not up to mark, drastic measures are required to make the recoveries speedy.

In the year 2007-2008 the ratio was increased it was 4, and after than the normally decreased in the year 2008-2009, and 2009-2010 the ratios was 2, and after again increased ratio in the year 2010-2011, the ratio was 4, and again decreased ratio in the year 2011-2012, the ratio was 1.

A weak condition of this industry for debtor’s turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us how ever for collection in the accounting period from debtors. Once can know the efficiency or otherwise of collection policy.
Table 4.5.4 and Graph 4.5.4(C) reveals that the Debtor’s turnover of study period was below than the norms i.e. 12.

During the study period of this industry the highest ratio was 23, in the year 2009-2010, and the lowest ratio was 3, in the years 2010-2011. To know the efficiency and effectiveness of collection policy, this ratio is used. The higher the ratio the speedy the collection is. If this ratio is not up to mark, drastic measures are required to make the recoveries speedy.

In the year 2007-2008 the ratio was decreased it was 11, and after than the normally increased in the year 2008-2009, the ratios was 17, and after again increased ratio in the year 2009-2010, the ratio was 23, and again decreased ratio in the year 2010-2011, the ratio was 3 and again increased in the year 2011-2012, the ratio was 6.

A good condition of this industry for debtor’s turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us how ever for collection in the accounting period from debtors. Once can know the efficiency or otherwise of collection policy.
Ultratech Cement Pvt. Ltd.

Table 4.5.4 and Graph 4.5.4(D) reveals that the Debtor’s turnover of study period was below than the norms i.e. 13.6.

During the study period of this industry the highest ratio was 17, in the year 2010-2011, and the lowest ratio was 11, in the years 2008-2009, and 2009-2010 To know the efficiency and effectiveness of collection policy, this ratio is used. The higher the ratio the speedy the collection is. If this ratio is not up to mark, drastic measures are required to make the recoveries speedy.

In the year 2007-2008 the ratio was increased it was 14, and after than the normally decreased in the year 2008-2009, the ratios was 11, and after again decreased ratio in the year 2009-2010, the ratio was 11, and again increased ratio in the year 2010-2011, the ratio was 17. and again decreased in the year 2011-2012, the ratio was 15.

A good condition of this industry for debtor’s turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us how ever for collection in the accounting period from debtors. Once can know the efficiency or otherwise of collection policy.
Binani Cement Pvt. Ltd.

Table 4.5.4 and Graph 4.5.4(E) reveals that the Debtor’s turnover of study period was below than the norms i.e. 5.6.

During the study period of this industry the highest ratio was 11, in the year 2011-2012, and the lowest ratio was 2, in the years 2007-2008. To know the efficiency and effectiveness of collection policy, this ratio is used. The higher the ratio the speedy the collection is. If this ratio is not up to mark, drastic measures are required to make the recoveries speedy.

In the year 2007-2008 the ratio was decreased it was 2, and after than the normally increased in the year 2008-2009, the ratios was 7, and after again decreased ratio in the year 2009-2010, the ratio was 5, and again decreased ratio in the year 2010-2011, the ratio was 3. and again increased in the year 2011-2012, the ratio was 11.

A normally good condition of this industry for debtor’s turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us how ever for collection in the accounting period from debtors. Once can know the efficiency or otherwise of collection policy.
null hypothesis (H0): 
There will be no significant difference in Debtor’s Turnover ratio in selected cement industry.

alternative hypothesis (H1): 
There will be significant difference in Debtor’s Turnover ratio in selected cement industry.

F-Test:

\[ \bar{x} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \bar{x}_4 + \bar{x}_5}{k} \]
\[ = \frac{9.2 + 2.6 + 12.0 + 13.6 + 5.6}{5} \]
\[ \bar{x} = 8.60 \]

Now we work out ss between and ss within samples:

\[ \text{SS between} = n_1 (\bar{x}_1 - \bar{x})^2 + n_2 (\bar{x}_2 - \bar{x})^2 + n_3 (\bar{x}_3 - \bar{x})^2 + n_4 (\bar{x}_4 - \bar{x})^2 + n_5 (\bar{x}_5 - \bar{x})^2 \]

\[ = 1.80 + 180 + 57.80 + 125 + 45 \]
\[ = 409.60 \]

\[ \text{SS within} = \sum (X_1 - \bar{X}_1)^2 + \sum (X_2 - \bar{X}_2)^2 + \sum (X_3 - \bar{X}_3)^2 + \sum (X_4 - \bar{X}_4)^2 + \sum (X_5 - \bar{X}_5)^2 \]

\[ = 26.80 + 7.20 + 264 + 27.20 + 51.20 \]
\[ = 376.40 \]

SS for total variance = SS between + SS within

\[ = 409.60 + 376.40 \]
\[ = 786 \]
We can now set up the **F- table** for this problem:

<table>
<thead>
<tr>
<th><strong>Sources of variation</strong></th>
<th><strong>ss</strong></th>
<th><strong>d.f.</strong></th>
<th><strong>MS</strong></th>
<th><strong>F- ratio</strong></th>
<th><strong>5% F- limit (form the F- table)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>409.60</td>
<td>(5 – 1) = 4</td>
<td>409.60/4 = 102.40</td>
<td>102.40/18.82 = 5.44</td>
<td><strong>F (4,20) =2.87</strong></td>
</tr>
<tr>
<td>Within sample</td>
<td>376.40</td>
<td>(25 – 5 ) = 20</td>
<td>376.40/20 = 18.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>786</td>
<td>( 25 – 1 ) =24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F – Test indicates that there was significant difference in the Debtor’s Turnover ratio in selected cement industries. Because the calculate value of F- test was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.

The above table shows that the calculated value of $F$ is 5.44 which is more than the table value of 2.87 at 5% level with d.f. being $V_1 = 4$ and $V_2 = 20$ and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
(4.5.5) **INVENTORY AND STOCK TURNOVER:**

Table No. 4.5.5

*Inventory and Stock Turnover Ratios (In Times) Of the Cement Industries Under Study from – 2007-08 to 2011-12*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>UltraTech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>7.54</td>
<td>26.36</td>
<td>13.66</td>
<td>31.16</td>
<td>11.90</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>11.36</td>
<td>29.85</td>
<td>13.75</td>
<td>22.89</td>
<td>15.86</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>9.19</td>
<td>14.75</td>
<td>8.70</td>
<td>22.65</td>
<td>16.44</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>9.25</td>
<td>11.81</td>
<td>13.03</td>
<td>6.80</td>
<td>34.25</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>9.89</td>
<td>5.54</td>
<td>5.91</td>
<td>8.99</td>
<td>47.65</td>
</tr>
</tbody>
</table>

\[
\bar{x} = \frac{\sum x}{n} = \frac{16.366}{6} = 2.7275
\]

\[
\sum = n(\bar{x} - \bar{x})^2 = 806.38
\]

\[
\sum (X_i - \bar{x})^2 = 1822.29
\]

**ss between** + **ss within** = 806.38 + 1822.29 = 2628.67

**Sources:** Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Ambuja Cement Pvt. Ltd.

Table 4.5.5 and Graph 4.5.5(A) reveals that the Inventory turnover or Stock ratio of study period was below than the norms i.e. 9.440.

During the study period of this industry the highest ratio was 11.36, in the year 2008-2009, and the lowest ratio was 7.54, in the years 2007-2008. This ratio is important to know how speedy the turnover of inventory is in a manufacturing concern. It can be said that the inventory is used efficiently if this ratio is high. If the ratio is low, more investment is made in inventory and hence measures should be taken to reduce the inventory.

In the year 2007-2008 the ratio was decreased it was 7.54, and after than the normally increased in the year 2008-2009, the ratios was 11.36, and after again decreased ratio in the year 2009-2010, the ratio was 9.19, and again increased ratio in the year 2010-2011, the ratio was 9.25 and again increased in the year 2011-2012, the ratio was 9.89.

A weak condition of this industry for inventory turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us investment is also made in finished goods. Those items of stock are called inventories.
Table 4.5.5 and Graph 4.5.5(B) reveals that the Inventory turnover or Stock ratio of study period was below than the norms i.e. 17.662.

During the study period of this industry the highest ratio was 29.85, in the year 2008-2009, and the lowest ratio was 5.54, in the years 2011-2012. This ratio is important to know how speedy the turnover of inventory is in a manufacturing concern. It can be said that the inventory is used efficiently if this ratio is high. If the ratio is low, more investment is made in inventory and hence measures should be taken to reduce the inventory.

In the year 2007-2008 the ratio was decreased it was 26.36, and after than the normally increased in the year 2008-2009, the ratios was 29.85, and after continue decreased ratio in the every year 2009-2010, 2010-2011 and 2011-2012 the ratios was 14.75, 11.81 and 5.54.

A good condition in the beginning of this industry after the weak condition for inventory turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us investment is also made in finished goods. Those items of stock are called inventories.
Table 4.5.5 and Graph 4.5.5(C) reveals that the Inventory turnover or Stock ratio of study period was below than the norms i.e. 11.010.

During the study period of this industry the highest ratio was 13.75, in the year 2008-2009, and the lowest ratio was 5.91, in the years 2011-2012. This ratio is important to know how speedy the turnover of inventory is in a manufacturing concern. It can be said that the inventory is used efficiently if this ratio is high. If the ratio is low, more investment is made in inventory and hence measures should be taken to reduce the inventory.

In the year 2007-2008 the ratio was decreased it was 13.66, and after than the normally increased in the year 2008-2009, the ratios was 13.75, and after again decreased ratio in the year 2009-2010, the ratio was 8.70, and again increased ratio in the year 2010-2011, the ratio was 13.03. and again decreased in the year 2011-2012, the ratio was 5.91.

A weak condition of this industry for inventory turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us investment is also made in finished goods. Those items of stock are called inventories.
Ultratech Cement Pvt. Ltd.

Table 4.5.5 and Graph 4.5.5(D) reveals that the Inventory turnover or Stock ratio of study period was below than the norms i.e. 18.498.

During the study period of this industry the highest ratio was 31.16, in the year 2007-2008, and the lowest ratio was 6.8, in the years 2010-2011. This ratio is important to know how speedy the turnover of inventory is in a manufacturing concern. It can be said that the inventory is used efficiently if this ratio is high. If the ratio is low, more investment is made in inventory and hence measures should be taken to reduce the inventory.

In the year 2007-2008 the ratio was increased it was 31.16, and after than the normally decreased in the year 2008-2009, 2009-2010, and 2010-2011 the ratios was 22.89, 22.65 and 6.8 after again increased ratio in the year 2011-2012, the ratio was 8.99.

A good condition in the beginning of this industry and after the weak condition for inventory turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us investment is also made in finished goods. Those items of stock are called inventories.
Binani Cement Pvt. Ltd.

Table 4.5.5 and Graph 4.5.5(E) reveals that the Inventory turnover or Stock ratio of study period was below than the norms i.e. 25.220.

During the study period of this industry the highest ratio was 47.65, in the year 2011-2012, and the lowest ratio was 11.9, in the years 2007-2008. This ratio is important to know how speedy the turnover of inventory is in a manufacturing concern. It can be said that the inventory is used efficiently if this ratio is high. If the ratio is low, more investment is made in inventory and hence measures should be taken to reduce the inventory.

In the year 2007-2008 the ratio was decreased it was 11.9, and after than the normally increased ratios in the every years 2008-2009, 2009-2010, 2010-2011 and 2011-2012, the ratios was 15.86, 16.44, 34.25 and 47.65.

A good condition of this industry for inventory turnover compare with ideal ratio is the higher the ratio the speedier the collection is.

This ratio shows us investment is also made in finished goods. Those items of stock are called inventories.
**NULL HYPOTHESIS (H₀):**
There will be no significant difference in Inventory and Stock Turnover ratio in selected cement industry.

**ALTERNATIVE HYPOTHESIS (H₁):**
There will be significant difference in Inventory and Stock Turnover ratio in selected cement industry.

**F-Test:**

\[
\bar{x} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \bar{x}_4 + \bar{x}_5}{k}
\]

\[
= \frac{9.44 + 17.66 + 11.01 + 18.49 + 25.22}{5}
\]

\[
\bar{x} = 16.366
\]

Now we work out ss between and ss within samples:

**SS between** = \(n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2\)

\[
= 239.85 + 8.40 + 143.43 + 22.73 + 391.97
\]

\[
= 806.38
\]

**SS within** = \(\sum (x_1 - \bar{x}_1)^2 + \sum (x_2 - \bar{x}_2)^2 + \sum (x_3 - \bar{x}_3)^2 + \sum (x_4 - \bar{x}_4)^2 + \sum (x_5 - \bar{x}_5)^2\)

\[
= 7.60 + 413.87 + 49.96 + 424.10 + 926.76
\]

\[
= 1822.29
\]

**SS for total variance** = SS between + SS within

\[
= 806.38 + 1822.29
\]

\[
= 2628.67
\]
We can now set up the **F-table** for this problem:

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>ss</th>
<th>d.f.</th>
<th>MS</th>
<th>F-ratio</th>
<th>5% F-limit (from the F-table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>806.38</td>
<td>(5 – 1) = 4</td>
<td>806.38/4 = 201.59</td>
<td>201.59/91.11 = 2.21</td>
<td>F(4,20) =2.87</td>
</tr>
<tr>
<td>Within sample</td>
<td>1822.29</td>
<td>(25 – 5) = 20</td>
<td>1822.29/20 = 91.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2628.67</td>
<td>(25 – 1) = 24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F – Test indicates that there was significant difference in the Inventory and Stock Turnover ratio in selected cement industries. Because the calculate value of F-test was less than the tabulate value. So, alternative hypothesis has been rejected and null hypothesis has been accepted.

The above table shows that the calculated value of $F$ is 2.21 which is more than the table value of 2.87 at 5% level with d.f. being $V_1 = 4$ and $V_2 = 20$ and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
**4.5.6 FIXED ASSETS TURNOVER OR VELOCITY:**

Table No. 4.5.6

*Fixed Assets Turnover or Velocity (In Times) Of the Cement Industries Under Study from – 2007-08 to 2011-12*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>Ultratech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>1.10</td>
<td>0.55</td>
<td>1.40</td>
<td>1.11</td>
<td>0.84</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>1.15</td>
<td>0.52</td>
<td>1.60</td>
<td>0.86</td>
<td>0.67</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>0.85</td>
<td>0.42</td>
<td>1.21</td>
<td>0.87</td>
<td>0.94</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>0.89</td>
<td>0.40</td>
<td>1.38</td>
<td>0.75</td>
<td>1.03</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>0.96</td>
<td>0.71</td>
<td>1.57</td>
<td>0.97</td>
<td>0.91</td>
</tr>
</tbody>
</table>

\[
\bar{x} = 0.99 \\
\text{ss between} = 0.00 \\
\text{ss within} = 0.06 \\
\text{ss total variation} = \text{ss between + ss within} = 2.09 + 0.35 = 2.44
\]

**Sources:** Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Ambuja Cement Pvt. Ltd.

Table 4.5.6 and Graph 4.5.6(A) reveals that the fixed assets turnover or velocity of study period was below than the norms i.e. 0.99.

During the study period of this industry the highest ratio was 1.15, in the year 2008-2009, and the lowest ratio was 0.89, in the years 2009-2010. If the ratio is lower, it indicates that more investment is made in the business. Vice versa, it will indicate the efficient use of fixed assets.

In the year 2007-2008 the ratio was decreased it was 1.1, and after than the normally increased in the year 2008-2009, the ratios was 1.15, and after again decreased ratio in the year 2009-2010, the ratio was 0.85, and again increased ratio in the year 2010-2011, the ratio was 0.89, and again increased in the year 2011-2012, the ratio was 0.96.

A normally good condition of this industry for fixed assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in fixed assets, the more efficient is the use of fixed assets.
Table 4.5.6 and Graph 4.5.6(B) reveals that the fixed assets turnover or velocity of study period was below than the norms i.e. 0.52.

During the study period of this industry the highest ratio was 0.71, in the year 2011-2012, and the lowest ratio was 0.40, in the years 2010-2011. If the ratio is lower, it indicates that more investment is made in the business. Vice versa, it will indicate the efficient use of fixed assets.

In the year 2007-2008 the ratio was increased it was 0.55, and after than the normally decreased in the year 2008-2009, the ratios was 0.52, and after again decreased ratio in the years 2009-2010, and 2010-2011 the ratios was 0.42, and 0.40, again increased ratio in the year 2011-2012, the ratio was 0.71.

A normally weak condition of this industry for fixed assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in fixed assets, the more efficient is the use of fixed assets.
Sanghi Cement Pvt. Ltd.

Table 4.5.6 and Graph 4.5.6(C) reveals that the fixed assets turnover or velocity of study period was below than the norms i.e. 1.43.

During the study period of this industry the highest ratio was 1.60, in the year 2008-2009, and the lowest ratio was 1.21, in the years 2009-2010. If the ratio is lower, it indicates that more investment is made in the business. Vice versa, it will indicate the efficient use of fixed assets.

In the year 2007-2008 the ratio was decreased it was 1.40, and after than the normally increased in the year 2008-2009, the ratio was 1.60, and after again decreased ratio in the years 2009-2010 the ratios was 1.21, and again increased ratio in the year 2010-2011, the ratio was 1.38, and again increased in the year 2011-2012, the ratio was 1.57.

A good condition of this industry for fixed assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in fixed assets, the more efficient is the use of fixed assets.
Table 4.5.6 and Graph 4.5.6(D) reveals that the fixed assets turnover or velocity of study period was below than the norms i.e. 0.91.

During the study period of this industry the highest ratio was 1.11, in the year 2007-2008, and the lowest ratio was 0.75, in the year 2010-2011. If the ratio is lower, it indicates that more investment is made in the business. Vice versa, it will indicate the efficient use of fixed assets.

In the year 2007-2008 the ratio was increased it was 1.11, and after than the normally decreased in the year 2008-2009, the ratio was 0.86, and after again increased ratio in the year 2009-2010 the ratio was 0.87, and again decreased ratio in the year 2010-2011, the ratio was 0.75, and again increased in the year 2011-2012, the ratio was 0.97.

A good condition of this industry for fixed assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in fixed assets, the more efficient is the use of fixed assets.
Ultratech Cement Pvt. Ltd.

Table 4.5.6 and Graph 4.5.6(E) reveals that the fixed assets turnover or velocity of study period was below than the norms i.e. 0.88.

During the study period of this industry the highest ratio was 1.03, in the year 2010-2011, and the lowest ratio was 0.67, in the year 2010-2011. If the ratio is lower, it indicates that more investment is made in the business. Vice versa, it will indicate the efficient use of fixed assets.

In the year 2007-2008 the ratio was increased it was 0.84, and after than the normally decreased in the year 2008-2009, the ratio was 0.67, and after again increased ratio in the year 2009-2010 the ratio was 0.94, and again increased ratio in the year 2010-2011, the ratio was 1.03, and again decreased in the year 2011-2012, the ratio was 0.91.

A good condition of this industry for fixed assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in fixed assets, the more efficient is the use of fixed assets.
NULL HYPOTHESIS (H₀):
There will be no significant difference in Fixed Assets Turnover Velocity ratio in selected cement industry.

ALTERNATIVE HYPOTHESIS (H₁):
There will be significant difference in Fixed Assets Turnover or Velocity ratio in selected cement industry.

F-Test:

\[
\bar{x} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \bar{x}_4 + \bar{x}_5}{k}
\]

\[
= \frac{0.99 + 0.52 + 1.43 + 0.91 + 0.88}{5}
\]

\[
\bar{x} = 0.95
\]

Now we work out ss between and ss within samples:

**SS between** = \( n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2 \)

\[
= 0.00 + 0.92 + 1.15 + 0.00 + 0.02
\]

\[
= 2.09
\]

**SS within** = \( \sum (x_1 - \bar{x}_1)^2 + \sum (x_2 - \bar{x}_2)^2 + \sum (x_3 - \bar{x}_3)^2 + \sum (x_4 - \bar{x}_4)^2 + \sum (x_5 - \bar{x}_5)^2 \)

\[
= 0.06 + 0.06 + 0.10 + 0.07 + 0.06
\]

\[
= 0.35
\]

**SS for total variance** = SS between + SS within

\[
= 2.09 + 0.35
\]

\[
= 2.44
\]

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We can now set up the F-table for this problem:

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>ss</th>
<th>d.f.</th>
<th>MS</th>
<th>F-ratio</th>
<th>5% F-limit (form the F-table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>2.09</td>
<td>$(5 - 1) = 4$</td>
<td>$2.09/4 = 0.52$</td>
<td>$0.52/0.018 = 28.89$</td>
<td>$F(4,20) = 2.87$</td>
</tr>
<tr>
<td>Within sample</td>
<td>0.35</td>
<td>$(25 - 5) = 20$</td>
<td>$0.35/20 = 0.018$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.44</td>
<td>$(25 - 1) = 24$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F – Test indicates that there was significant difference in the Fixed Assets Turnover or Velocity ratio in selected cement industries. Because the calculate value of F-test was less than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.

The above table shows that the calculated value of $F$ is 28.89 which is more than the table value of 2.87 at 5% level with d.f. being $V_1 = 4$ and $V_2 = 20$ and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
(4.5.7) **TOTAL ASSETS TURNOVER OR VELOCITY:**

Table No. 4.5.7

*Total Assets Turnover or Velocity (In Times) Of the Cement Industries Under Study from – 2007-08 to 2011-12*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year’s</th>
<th>Ambuja Cement (Gujarat) Pvt. Ltd.</th>
<th>Sanghi Cement Pvt. Ltd. (Gujarat)</th>
<th>Digvijay Cement Pvt. Ltd. (Gujarat)</th>
<th>Ultra tech Cement Pvt. Ltd. (Gujarat)</th>
<th>Binani Cement Pvt. Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007-2008</td>
<td>1.05</td>
<td>0.50</td>
<td>1.96</td>
<td>1.24</td>
<td>0.68</td>
</tr>
<tr>
<td>2</td>
<td>2008-2009</td>
<td>1.08</td>
<td>0.48</td>
<td>1.30</td>
<td>1.11</td>
<td>0.81</td>
</tr>
<tr>
<td>3</td>
<td>2009-2010</td>
<td>1.01</td>
<td>0.38</td>
<td>1.83</td>
<td>1.14</td>
<td>1.20</td>
</tr>
<tr>
<td>4</td>
<td>2010-2011</td>
<td>1.05</td>
<td>0.52</td>
<td>1.61</td>
<td>1.00</td>
<td>1.12</td>
</tr>
<tr>
<td>5</td>
<td>2011-2012</td>
<td>1.10</td>
<td>0.59</td>
<td>1.52</td>
<td>1.10</td>
<td>0.95</td>
</tr>
</tbody>
</table>

\[ \bar{x} = 1.053 \]

\[ \begin{align*}
\text{ss between} & = 0.00 + 1.56 + 1.75 + 0.02 + 0.05 \\
& = 3.38 \\
\text{ss within} & = 0.00 + 0.02 + 0.27 + 0.03 + 0.18 \\
& = 0.50 \\
\text{ss total variation} & = \text{ss between} + \text{ss within} = 3.38 + 0.50 = 3.88
\]

**Sources:** Computed from the annual reports and account of the respective companies from 2007-2008 to 2011-2012.
Table 4.5.7 and Graph 4.5.7(A) reveals that the Total assets turnover or velocity of study period was below than the norms i.e. 1.058.

During the study period of this industry the highest ratio was 1.10, in the year 2011-2012, and the lowest ratio was 1.01, in the year 2009-2010. This ratio is intended to measure the effectiveness of the employment of resource, the command over which has been financed by the firm.

In the year 2007-2008 the ratio was decreased it was 1.05, and after than the normally increased in the year 2008-2009, the ratio was 1.08, and after again decreased ratio in the year 2009-2010 the ratio was 1.01, and again increased ratio in the year 2010-2011, the ratio was 1.05, and again increased in the year 2011-2012, the ratio was 1.10.

A good condition of this industry for total assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in total assets, the more efficient is the use of total assets. The more this ratio is, the more useful and faithful the assets are. It means less investment and more sales.
Table 4.5.7 and Graph 4.5.7(B) reveals that the Total assets turnover or velocity of study period was below than the norms i.e. 0.494.

During the study period of this industry the highest ratio was 0.59, in the year 2011-2012, and the lowest ratio was 0.38, in the year 2009-2010. This ratio is intended to measure the effectiveness of the employment of resource, the command over which has been financed by the firm.

In the year 2007-2008 the ratio was increased it was 0.50, and after than the normally decreased in the year 2008-2009, the ratio was 0.48, and after again decreased ratio in the year 2009-2010 the ratio was 0.38, and again increased ratio in the year 2010-2011, the ratio was 0.52, and again increased in the year 2011-2012, the ratio was 0.59.

A weak condition of this industry for total assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in total assets, the more efficient is the use of total assets. The more this ratio is, the more useful and faithful the assets are. It means less investment and more sales.
Table 4.5.7 and Graph 4.5.7(C) reveals that the Total assets turnover or velocity of study period was below than the norms i.e. 1.644.

During the study period of this industry the highest ratio was 1.96, in the year 2007-2008, and the lowest ratio was 1.30, in the year 2008-2009. This ratio is intended to measure the effectiveness of the employment of resource, the command over which has been financed by the firm.

In the year 2007-2008 the ratio was increased it was 1.96, and after than the normally decreased in the year 2008-2009, the ratio was 1.30, and after again increased ratio in the year 2009-2010 the ratio was 1.83, and again decreased ratio in the year 2010-2011, the ratio was 1.61, and again decreased in the year 2011-2012, the ratio was 1.52.

A good condition of this industry for total assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in total assets, the more efficient is the use of total assets.

The more this ratio is, the more useful and faithful the assets are. It means less investment and more sales.
Table 4.5.7 and Graph 4.5.7(D) reveals that the Total assets turnover or velocity of study period was below than the norms i.e. 1.118.

During the study period of this industry the highest ratio was 1.24, in the year 2007-2008, and the lowest ratio was 1.00, in the year 2010-2011. This ratio is intended to measure the effectiveness of the employment of resource, the command over which has been financed by the firm.

In the year 2007-2008 the ratio was increased it was 1.24, and after than the normally decreased in the year 2008-2009, the ratio was 1.11, and after again increased ratio in the year 2009-2010 the ratio was 1.14, and again decreased ratio in the year 2010-2011, the ratio was 1.00, and again increased in the year 2011-2012, the ratio was 1.10.

A good condition of this industry for total assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in total assets, the more efficient is the use of total assets.

The more this ratio is, the more useful and faithful the assets are. It means less investment and more sales.

Ultratech Cement Pvt. Ltd.
Table 4.5.7 and Graph 4.5.7(E) reveals that the Total assets turnover or velocity of study period was below than the norms i.e. 0.952.

During the study period of this industry the highest ratio was 1.20, in the year 2009-2010, and the lowest ratio was 0.68, in the year 2007-2008. This ratio is intended to measure the effectiveness of the employment of resource, the command over which has been financed by the firm.

In the year 2007-2008 the ratio was decreased it was 0.68, and after than the normally increased in the year 2008-2009, the ratio was 0.81, and after again increased ratio in the year 2009-2010 the ratio was 1.20, and again decreased ratio in the year 2010-2011, the ratio was 1.12, and again decreased in the year 2011-2012, the ratio was 0.95.

A normally good condition of this industry for total assets turnover or velocity compare with ideal ratio is the more the sales in relation to the amount invested in total assets, the more efficient is the use of total assets.

The more this ratio is, the more useful and faithful the assets are. It means less investment and more sales.
NULL HYPOTHESIS (H₀):
There will be no significant difference in Total Assets Turnover Velocity ratio in selected cement industry.

ALTERNATIVE HYPOTHESIS (H₁):
There will be significant difference in Total Assets Turnover or Velocity ratio in selected cement industry.

F-Test:

\[
\bar{x} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \bar{x}_4 + \bar{x}_5}{k}
\]

\[
= \frac{1.058 + 0.494 + 1.644 + 1.118 + 0.952}{5}
\]

\[
\bar{x} = 1.053
\]

Now we work out ss between and ss within samples:

\[
\text{ss between} = n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2
\]

\[
= 0.00 + 1.56 + 1.75 + 0.02 + 0.05
\]

\[
= 3.38
\]

\[
\text{ss within} = \sum (X_1 - \bar{x})^2 + \sum (X_2 - \bar{x})^2 + \sum (X_3 - \bar{x})^2 + \sum (X_4 - \bar{x})^2 + \sum (X_5 - \bar{x})^2
\]

\[
= 0.00 + 0.02 + 0.27 + 0.03 + 0.18
\]

\[
= 0.50
\]

ss for total variance = ss between + ss within

\[
= 3.38 + 0.50
\]

\[
= 3.88
\]
We can now set up the **F-table** for this problem:

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>ss</th>
<th>d.f.</th>
<th>MS</th>
<th>F-ratio</th>
<th>5% F-limit (form the F-table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between sample</td>
<td>3.38</td>
<td>(5 – 1) = 4</td>
<td>3.38/4 =0.85</td>
<td>0.85/0.025 = 34</td>
<td>F (4,20) = 2.87</td>
</tr>
<tr>
<td>Within sample</td>
<td>0.50</td>
<td>(25 – 5 ) = 20</td>
<td>0.50/20 =0.025</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.88</td>
<td>(25 – 1 ) =24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F – Test indicates that there was significant difference in the Total Assets Turnover or Velocity ratio in selected cement industries. Because the calculate value of F-test was less than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.

The above table shows that the calculated value of $F$ is 34 which is more than the table value of 2.87 at 5% level with d.f. being $V_1 = 4$ and $V_2 = 20$ and hence could have arisen due to chance. This analysis supports the alternative hypothesis of no difference is sample means.
REFERENCES:


3. A.F Peed, “Corporate Cash Management” as reproduce in R.R Bari’s Book selected Reading in cash management, Triveit Publishing, Delhi, 1981,

