Analysis and Interpretation of Liquidity
Chapter -4

ANALYSIS AND INTERPRETATION OF LIQUIDITY

4.1 Introduction
4.2 Working capital theories
4.3 Cash Management
4.4 Profitability V/s. Liquidity
4.5 Importance of liquidity in to the capital structure
4.6 Ratios to know the situation of the liquidity
  4.6.1. Current ratio
  4.6.2. Liquidity ratio
  4.6.3. Cash as Percentage to Total Assets ratio
  4.6.4. Cash to Net Working Capital Ratio
  4.6.5. Cash to current assets ratio
4.7 Liquidity analysis
4.8 Measurement of Liquidity and Trends
Chapter -4
ANALYSIS AND INTERPRETATION OF LIQUIDITY

4.1 Introduction

Capital structure refers to the way a firm is financing its assets through a combination of equity and debt (Titman and Wessels, 1988). It can be measured as the ratio between debt and total of equity and liabilities (Myers, 2001). The form of financing and types of funding sources will define the firms’ capital structure. The process of financing takes a very important place in firms’ management because it must ensure financial continuity necessary for growth and maintaining competitiveness in their environment.

Funding is the process of acquiring, using and returning funds to their sources. If income, derived from the use of debt, is greater than the cost of capital, then it can be said that using debt is a good financial decision. However, it still remains an open question whether it is better to use internal sources of financing (cash, dividends, unpaid taxes etc.) or to use external sources and pay for compensation in the form of interest rates. The issue of vertical financial structure remains open both for managers and for theorists, because it is relatively difficult to make a decision about the optimal mode of financing with regard to dynamic business changes, but also those of the institutional and legislative.

143
Gujarat Siddhi Cements to external funding is generally easier for liquid firms whose financial ratios correspond to the criteria of financial institutions.

Liquidity is a property of the assets to be converted into cash. Firms in their operations seek to maintain liquidity, or ability to timely perform its obligations. Liquidity ratios compare current liabilities with current resources available to meet current liabilities. The capital structure is a form of leverage or debt ratio measures (Zingales and Rajan, 1995).

Leverage ratios show the ways in which a firm finances its assets. They represent a measure of the degree of investment risk in the firm, and determine the degree of use of borrowed funds. Firms with significantly high levels of debt are losing financial flexibility, may have problems in finding new investors, and are faced with the risk of bankruptcy. However, debt is not necessarily bad. If the level of debt is under control and regularly monitored through time, and borrowed funds are used properly, debt can result in increased return on investment. A liquid firm is one that promptly pays all its obligations and as such is desirable for funding sources.

4.2 Working capital approaches

4.2.1 Working capital

Working capital (abbreviated WC) is a financial metric which represents operating liquidity available to a business, organization or other entity, including governmental entity. Along with fixed assets such
as plant and equipment, working capital is considered a part of operating capital. Gross working capital equals to current assets. Working capital is calculated as current assets minus current liabilities. If current assets are less than current liabilities, an entity has a working capital deficiency, also called a working capital deficit.

A company can be endowed with assets and profitability but short of liquidity if its assets cannot readily be converted into cash. Positive working capital is required to ensure that a firm is able to continue its operations and that it has sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses. The management of working capital involves managing inventories, Gujarat Siddhi Cements receivable and payable, and cash.

Working capital is the difference between the current assets and the current liabilities.

The basic calculation of the working capital is done on the basis of the gross current assets of the firm.

Working capital Approaches:

A) **Matching or hedging approach:**

This approach matches assets and liabilities to maturities. Basically, a company uses long term sources to finance fixed assets and permanent current assets and short term financing to finance temporary current assets.

The traditional approach to capital structure suggests that there exist an optimal debt to equity ratio where the overall cost of capital is the minimum and market value of the firm is the maximum. On either
side of this point, changes in the financing mix can bring positive change to the value of the firm. Before this point, the marginal cost of debt is less than a cost of equity and after this point vice-versa.

Capital Structure Theories and its different approaches put forth the relation between the proportion of debt in the financing of a company’s assets, the weighted average cost of capital and the market value of the company. While Net Income Approach and Net Operating Income Approach are the two extremes Approach are the two extremes, traditional approach, advocated by Ezta Solomon and Fred Weston is a midway approach also known as “intermediate approach”.

The traditional approach to capital structure advocates that there is a right combination of equity and debt in the capital structure, at which the market value of a firm is maximum. As per this approach, debt should exist in the capital structure only up to a specific point, beyond which, any increase in leverage would result in the reduction in value of the firm.

It means that there exists an optimum value of debt to equity ratio at which is the lowest and the market value of the firm is the highest. Once the firm crosses that optimum value of debt to equity ratio, the cost of equity rises to give a detrimental effect to the GUJARAT SIDDHI CEMENT. Above the threshold, the increases and market value of the firm starts a downward movement.

**Assumptions under Traditional Approach:**

The rate of interest on debt remains constant for a certain period and thereafter with an increase in leverage, it increases.
The expected rate by equity shareholders remains constant or increase gradually. After that, the equity shareholders starts perceiving a financial risk and then from the optimal point and the expected rate increases speedily Example: A fixed asset which is expected to provide cash flow for 5 years should be financed by approx 5 years long-term debts. Assuming the company needs to have additional inventories for 2 months, it will then seek short term 2 months bank credit to match it.

B) **Conservative approach:**

it is conservative because the company prefers to have more cash on hand. That is why, fixed and part of current assets are financed by long-term or permanent funds. As permanent or long-term sources are more expensive, this leads to “lower risk lower return”.

Conservative approach is a risk-free strategy of working capital financing. A company adopting this strategy maintains a higher level of current assets and therefore higher working capital also. The major part of the working capital is financed by the long-term sources of funds such as equity, debentures, term loans etc. So, the risk associated with short-term financing is abolished to a great extent.

In the conservative approach, fixed assets, permanent working capital and a part of temporary working capital is financed by long-term financing sources and the remaining part only is financed by short-term financing sources. Thus, the primary objective of working capital management is ensured. It is explained in the equation below:
Financing Strategy in Equation:

Long Term Funds will Finance = Fixed Assets + Permanent Working Capital + Part of Temporary Working Capital

Short Term Funds will Finance = Remaining Part of Temporary Working Capital

Advantages of Conservative Strategy of Working Capital Financing

Smooth Operations with No Stoppages: In this strategy, the level of working capital and current assets (inventory, Gujarat Siddhi Cements receivables and most importantly liquid cash or bank balance) is high. A higher level of inventory absorbs the sudden spurt in product sales, production plans, any abnormal delay in procurement time etc. This achieves the higher level of customer satisfaction and smooth operations of the company. Higher levels of Gujarat Siddhi Cements receivables are due to relaxed credit terms which is turn attracts more customer and thereby higher sales and higher sales mean higher profits in normal circumstances.

No Insolvency Risk: Most important part and highly relevant to financing strategy are the higher levels of cash and working capital. Higher working capital avoids the risk of refinancing which exists in case it is financed by short-term sources of finance. Not only the risk of refinancing but also the risk of adverse change in the interest rate while getting the short term loans renewed are avoided. This is how the insolvency risk is avoided as at any time company has sufficient capital to pay off any liability.
Disadvantages of Conservative Strategy of Working Capital Financing

Higher Interest Cost: This strategy employs long-term sources of finance and hence there are all the chances that the rate of interest will be high. The theory of term premium says that the long-term funds have higher interest rate compared to short-term funds as risk perception and uncertainty is high in case of longer terms.

Idle Funds: Long term loans cannot be paid off when wished and if paid cannot be easily availed back. As we noted in the diagram, the long-term funds remain un-utilized in the times when seasonal spurt in activity is not there. Idle funds have an opportunity cost of interest attached to it.

Higher Carrying Cost: A Higher level of inventory and debtors implies higher carrying and holding cost which has a direct impact on profitability.

Inefficient Working Capital Management: If the margins of the firm are low for a particular year, a reasonable part of it will be attributed to working capital management. In such a situation, the conservative approach of financing may be called with another name of ‘inefficient working capital management’.

C) **Aggressive approach:**

The Company wants to take high risk where short term funds are used to a very high degree to finance current and even fixed assets.

The aggressive approach is a high-risk strategy of working capital financing wherein short-term finances are utilized not only to finance the temporary working capital but also a reasonable part of the permanent working capital. In this approach of financing, the levels of inventory,
Gujarat Siddhi Cements receivables and bank balances are just sufficient with no cushion for uncertainty. There is a reasonable dependence on the trade credit.

Fixed assets and a part of permanent working capital are financed by long-term financing sources and the remaining part of permanent working capital and total temporary working capital is only is financed by short-term financing sources. It is explained in the equation below:

**Financing Strategy in Equation:**
Long Term Funds will Finance = Fixed Assets + Part of Permanent Working Capital
Short Term Funds will Finance = Remaining Part of Permanent Working Capital + Temporary Working Capital

**Advantages of Aggressive Strategy of Working Capital Financing**
Lower Financing Cost, High Profitability: In this strategy, the cost of interest is low because of the maximum usage of short term finances. There are two reasons of this. Firstly, the rate of interest is cheaper and secondly, in the off seasons, the loan can be repaid and hence, no idle funds. If the operating cycle is moving smoothly, it is called most effective working capital management.

Lower Carrying and Handling Cost: Lower level of inventory makes the carrying and holding cost also go down and that directly affect the profitability.

Highly Efficient Working Capital Management: The task of working capital manager is to smoothly run the operating cycle of the company with the lowest level of working capital. Precisely, that is what
this strategy is all about. If the strategy is successful with no dissatisfied stakeholders, there is nothing better than this.

Disadvantages of Conservative Strategy of Working Capital Financing

Insolvency Risk: This strategy faces the high level of insolvency risk because the permanent assets are financed by the short-term financing sources. To maintain those permanent assets, the firm would need to be repeated refinancing and renewals. It is not necessary that all the time the refinancing is smooth. For any reason, if the financial institution rejects the renewal, the firm will not be in a position to maintain those permanent assets and will have to forcibly sell them. If failed in realizing those assets, the Options left is liquidation. Liquidating the permanent working capital is very difficult as it consists of Gujarat Siddhi Cements receivables and inventory.

Lost Opportunities and Unexpected Shocks: Since, there is no cushion or margin in this strategy of financing, sudden big contracts of sales are not possible to execute. On the other hand, if there are other uncertainties like delay in an abnormal raw material acquisition, machinery break downs etc, the firm will disturb the business operating cycle and therefore will face sustainability problems.

4.3 Cash Management

Cash Management is concerned with minimizing unproductive balances, investing temporarily cash advantageously and to making the best possible arrangement to meeting planned and unexpected demand on the firm’s cash. It involves managing of cash flows in and out of the firm
i.e. cash flows within the firm and cash balances held by the firm at a point of time.

It is necessary for business to maintain a certain amount of cash in hand or bank, always even if the other current assets are at a sustained figure. Cash is both beginning and the end of the working capital cycle—cash, inventories, receivables and cash. Working capital cycle—cash inventories, receivables and cash.

Cash is the basic input needed to keep a business running on a continuous basis. It is also the ultimate output expected to be realized by selling the services or product manufactured by an enterprise.

Cash Management assumes more importance than other current assets because cash is the most significant and the least productive asset that a firm holds. The aim of Cash Management should be to maintain adequate cash position to keep the firms operations in profitable manner. There are two primary reasons for a firm to hold cash.

1. To meet the needs of day-to-day transactions.
2. To protect the firm against uncertainties characterizing its cash flow.

Proper cash management is required for smooth running and maximum profitability of the business.

It is clear that cash is like blood stream in the human body, gives vitality and strength to a business enterprise. It is necessary that the management of business enterprise should provide sufficient coverage to their currently maturing obligations in the form of enough cash and near cash assets, high and stable cash flows and sound profit margin. The first
function of cash management increases the turnover of working capital cycle to bringing down the size of cash the function reduces the problem of financing the working capital. Trade creditors, banks and external agencies provide finance.

Cash Management involves managing the monies of the firm in order to attain maximum cash availability and maximum cash income. Idle Cash management is concerned with minimizing unproductive cash balances, investing temporarily excess cash advantageously, and to making the best possible arrangements for meeting planned and to making the best possible arrangements for meeting planned and unexpected demand on the firm’s cash flows within the firm, and cash balances held by the firm at a point of time.

Cash management must be thought of in terms of the overall liquidity needs of the firm, specifically its current assets and liabilities. In order to reduce the influence of uncertainties with regard to cash needs and to ensure adequate liquidity, firms have to gauge the need for protective liquidity. Firms have to gauge the need for protective liquidity. The efforts involved for this purpose usually take the form of: Assessment of the probabilities or odds that each of these will develop within a given period in future, such as 5 years. Assessment of the probabilities and developments creating cash drains will occur at the same time. Assessment of the likely amount of cash drain that will result if each of the contingencies develops. An important policy decision regarding cash management is: what should be the optimal amount of cash balance to consider the form impact of the following factors:
1. The philosophy of the management regarding liquidity and risk of insolvency.
2. The expected cash inflows and outflows based on the cash budget forecasts
   Encompassing long-range and short-range cash needs.
3. The size of sales in relation to fixed asset investment.
4. The degree of deviation between the expected and actual net cash flows.
5. The maturity structure of the firm’s liabilities.
6. The firm’s ability to borrow at short notice in the event of emergency.
7. Efficient planning and control of cash.
8. The status of the firm’s receivables and inventory
9. The credit position of the firm.
10. The nature of business.

4.4 Profitability V/s. liquidity

Profitability and liquidity are the two terms which are most widely watched by both the investors and owners in order to gauge whether the business is doing good or not. Given below are the differences between profitability and liquidity –

Profitability refers to profits which the company has made during the year which is calculated as difference between revenue and expense done by the company, whereas liquidity refers to availability of cash with the company at any point of time.
A profitable company may not have enough liquidity because most of the funds of the company are invested into projects and a company which has lot of cash or liquidity may not be profitable because of lack of opportunities for putting idle cash.

Gross profit, net profit, operating profit, return on capital employed are some of the ratios which are used to calculate profitability of the firm while current ratio, liquid ratio and cash debt coverage ratio are some of the ratios which are used to calculate liquidity of the firm.

A company which is profitable can go bankrupt in the short term if it does not have liquidity whereas a company which has liquidity but is not profitable cannot go bankrupt in the short term.

Liquidity and profitability are very closely related. When one increases the other decreases. Apparently liquidity and profitability goals conflict in most of the decisions which the finance manager makes. For example, it higher inventories are kept in anticipation of increase in prices of raw materials, profitability goal is approached but the liquidity of the firm is endangered. Similarly, the firm by following a liberal credit policy may be in a position to push up its sales but its illiquidity decrease.

There is also a direct relationship between higher risk and higher return. Higher risk on the one hand endangers the liquidity—a" the firm, higher return on the other hand increases its profitability. A company may increase its profitability by having a very high debt equity ratio. However, when the company raises funds from outside sources, it is committed to make the payment of interest, etc. at fixed times and in fixed amounts and hence to that extent of its liquidity is reduced.
Hence as one can see from the above that profitability and liquidity are not same and the company has to maintain a fine balance between the two because if company focuses on too much profitability then it runs the risk of not able to pay its creditors, employees and other parties whereas on the other hand if company focuses on liquidity and then it runs the risk of going into loss.

Thus, in every area of financial management, the financial manager is to choose between risk and profit and generally he chooses in between the two. He should forecast cash flows and analyses the various sources of funds. Forecasting of cash flow and managing the flow of internal funds are the functions which lead to liquidity, cost control and forecasting future profits are the functions of finance manager which lead to profitability. An efficient finance manager fixes that level of operations where both profit and risk are optimized.

### 4.5 Importance of liquidity in to the capital structure

The need for liquidity of current assets could not be over emphasized. The efficient management of liquidity is a integrated part of overall finance management and has a bearing on the objective of the consolidation of short-terms solvency position to achieve this.

It is necessary to generate sufficient liquid fund. The extent to which liquidity can be gained will naturally depend upon the magnitude of the sales. The efficiency of collection department the lowest period of operating cycle etc. a successful collection programmer is in other words, necessary for maintaining liquidity by any business enterprises.
Those sales don't convert into cash is instantly remain a time lag between the sales of goods and receipt of cash.

There is therefore a need for liquidity in the form of cash and bank balance, marketable security and bills receivables etc. will deals with the problem arising out of take of immediately realization of current assets? Therefore sufficient liquidity is necessary to certain the ability to pay short-term obligations. Technically, liquidity depends upon the production or cash cycling. The operating cycle can be said to be; the heart of the need for liquidity.

"The continuing flow from cash to supplier to inventory to Gujarat Siddhi Cements receivable and back into cash what is collected operating cycle."

In other words, the terms cash cycle refused to the length of time necessary cycle events:
1. Conversion of cash into inventory.
2. Conversion of inventory into receivable.
3. Conversion of receivable into cash.

Thus, the operating cycle is a continuous process. If it were possible to complete the sequences instantaneously, there would no need of liquid fund. But since it is not possible; the firm is forced to have current assets. Since cash inflows and cash outflow don't match, firms have to necessity keep cash or investment in short-term liquid securities.

Therefore they will be in a position to meet due obligation as per requirement.
Similarly, business concern must have adequate Inventory to guard against the possibility of not being able to meet a demand for their products. Adequate inventory therefore provides a cushion against being out of stock. If the firms have to be competitive they must sale goods to their customers on credit which receivables the holding of Gujarat Siddhi Cements receivable. It is in these ways that an adequate level of working capital is absolutely necessary for smooth sales activity which, in turn, enhances the liquid position of the concerns.

4.6 Ratios to know the situation of the liquidity

The scope to which there is quick convertibility of assets in to money, for the purpose of paying obligation of short-term nature can be termed as liquidity. A propos to obtaining an indication of a firm's ability to meet its current liabilities, the utility of the liquidity ratios is instrumental. As a flipside, however, it does not bring to the light, the effectiveness of the optimal management of cash resources. It is also termed as Short-Term Solvency Ratios. To measure the liquidity of a firm, the following Liquidity ratios are commonly used:

1. **Current Ratio:**

   The ratio of cash in current assets provides an index of current operations and, used correctly, helps determine the minimum level of cash. Monthly control of cash and his records give some indication of trends. An increasing level of cash in current assets could be caused by a reduction in the credit given by the company’s suppliers or by too high
cash balance. The first may be unavoidable; the second is not. The further analysis is required to determine the cause.

Formula:
Current ratio = current assets/current liabilities

Current Ratio of Selected Cement Companies has been shown in Table 4.1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gujarat siddhi cement</th>
<th>Saurashtra Cement Ltd.</th>
<th>Gujarat Ambuja</th>
<th>Digvijay Cement Ltd</th>
<th>Tata Chemicals Ltd</th>
<th>Narmada Cement Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1.47</td>
<td>3.09</td>
<td>3.16</td>
<td>2.36</td>
<td>2.25</td>
<td>2.46</td>
</tr>
<tr>
<td>2009</td>
<td>1.92</td>
<td>2.45</td>
<td>3.79</td>
<td>2.48</td>
<td>3.64</td>
<td>2.86</td>
</tr>
<tr>
<td>2010</td>
<td>1.77</td>
<td>2.32</td>
<td>2.32</td>
<td>2.67</td>
<td>2.96</td>
<td>2.41</td>
</tr>
<tr>
<td>2011</td>
<td>1.56</td>
<td>1.56</td>
<td>2.21</td>
<td>3.17</td>
<td>3.66</td>
<td>2.43</td>
</tr>
<tr>
<td>2012</td>
<td>1.55</td>
<td>0.80</td>
<td>1.29</td>
<td>2.66</td>
<td>3.91</td>
<td>2.04</td>
</tr>
<tr>
<td>Company Average</td>
<td>1.65</td>
<td>2.05</td>
<td>2.55</td>
<td>2.67</td>
<td>3.28</td>
<td>2.44</td>
</tr>
</tbody>
</table>

Source: Annual Report of Selected cement companies and EMIS database website

The current ratio of all the cement companies shows fluctuation trend throughout the study period except Saurashtra Cement Ltd. which shows decreasing trend. The minimum Current Ratio in Gujarat siddhi cement is 1.47 (2008), Saurashtra Cement Ltd. is –0.80 (2012), Gujarat Ambuja is 1.29 (2012), Digvijay Cement Ltd.is 2.36 (2008), and in the Tata Chemicals Ltd is 2.25 (2008). The maximum Current Ratio in Gujarat siddhi cement is 1.92 (2010), Saurashtra Cement Ltd. is 3.09
(2008), Gujarat Ambuja is 3.79 (2010), and Digvijay Cement Ltd is 3.17 (2011) and in Tata Chemicals Ltd.

Chart No.-4.1

Current ratio

- Gujarat siddhi cement
- Saurashtra Cement Ltd.
- Gujarat Ambuja cement
- Digvijay Cement Ltd
- Tata Chemicals Ltd
- Narmada Cement Ltd

Year

2008 2009 2010 2011 2012
Calculation of ‘F’ (ANOVA) Test:

Table No. 4.1 (A)

Analysis of ‘F’ Test in Selected Cement companies under the Study Current Ratio

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>7.759627</td>
<td>5</td>
<td>1.551925</td>
<td>3.931181</td>
<td>2.620654</td>
</tr>
<tr>
<td>Within Groups</td>
<td>9.47456</td>
<td>24</td>
<td>0.394773</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17.23419</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis:

H₀ = There is no significant difference between Current ratio in selected cement factories under the study.

H₁ = There is significant difference between Current ratio in selected cement factories under the study.

5 % level of significance table value is 2.620.

The calculated value of 'F' is 3.93 and table value is 2.620.

Hence,

Fc > Ft

The calculated value of 'F' is greater than the table value. The Null Hypothesis is rejected and Alternative Hypothesis is accepted.

2. Liquidity ratio

Liquidity ratio expresses a company’s ability to repay short-term creditors out of its total cash. It is the result of dividing the total cash by short-term borrowings. It shows the number of times short-term
liabilities are covered by cash. If the value is greater than 1.00, it means fully covered.

**Formula:**

Liquidity ratio = liquid assets/short-term liabilities

Liquidity Ratio of Selected Cement Companies has been presented in Table 4.2

**Table 4.2**

**Liquidity Ratio of Selected Cement Companies for the years from 2008 - 2012**

<table>
<thead>
<tr>
<th>Year</th>
<th>Gujarat siddhi cement</th>
<th>Saurashtra Cement Ltd.</th>
<th>Gujarat Ambuja cement</th>
<th>Digvijay Cement Ltd</th>
<th>Tata chemicals Ltd</th>
<th>Narmada Cement Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>0.39</td>
<td>1.39</td>
<td>0.60</td>
<td>0.58</td>
<td>0.47</td>
<td>0.69</td>
</tr>
<tr>
<td>2009</td>
<td>0.73</td>
<td>1.17</td>
<td>1.32</td>
<td>0.99</td>
<td>0.39</td>
<td>0.92</td>
</tr>
<tr>
<td>2010</td>
<td>0.67</td>
<td>1.02</td>
<td>0.57</td>
<td>1.09</td>
<td>0.40</td>
<td>0.75</td>
</tr>
<tr>
<td>2011</td>
<td>0.50</td>
<td>0.63</td>
<td>0.40</td>
<td>1.05</td>
<td>0.56</td>
<td>0.63</td>
</tr>
<tr>
<td>2012</td>
<td>0.48</td>
<td>0.26</td>
<td>0.17</td>
<td>1.43</td>
<td>0.51</td>
<td>0.57</td>
</tr>
<tr>
<td>Company Average</td>
<td>0.56</td>
<td>0.89</td>
<td>0.61</td>
<td>1.03</td>
<td>0.47</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Source: Annual Report of Selected cement companies and EMIS database website

The liquidity Ratio of all the cement companies shows fluctuating rend throughout the study period except Saurashtra Cement Ltd. which shows decreasing trend. The minimum Liquid Ratio in Gujarat siddhi cement is 0.39 (2008), Saurashtra Cement Ltd. is 0.26 (2012), Gujarat Ambuja is 0.17 (2012), Digvijay Cement Ltd is 0.58
(2008), and in India Cement is 0.39 (2009). The maximum Liquid Ratio in Gujarat siddhi cement is 0.73 (2009), Saurashtra cement is 1.39 (2008), Gujarat Ambuja is 1.32 (2009), and Tata chemicals is 1.43 (2012) and in Digvijay Cement is 0.56 (2011).

Chart No.-4.2

![Liquidity ratio chart](chart.png)
Calculation of ‘F’ (ANOVA) Test:

Table No. 4.2 (A)

Analysis of ‘F’ Test in Selected Cement companies under the Study Liquidity Ratio

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.14227</td>
<td>5</td>
<td>0.228454</td>
<td>2.618384</td>
<td>2.620654</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2.094</td>
<td>24</td>
<td>0.08725</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.23627</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis:

H₀ = There is no significant difference between Liquidity ratio in selected cement factories under the study.

H₁ = There is significant difference between Liquidity ratio in selected cement factories under the study.

5 % level of significance table value is 2.620.

The calculated value of 'F' is 2.618 and table value is 2.620.

Hence,

Fc < Ft

The calculated value of 'F' is less than the table value. The Null Hypothesis is accepted and Alternative Hypothesis is rejected.
3. **Cash as Percentage to Total Assets ratio**

By this ratio you can measure cash as a percentage of total assets to determine the relative amount of cash the company holds. This calculation is called common-size analysis, which compares the amount to total assets. Common-size analysis makes it easier to compare cash balance over time and between companies.

**Formula:**

Cash as percentage to total assets = cash/total assets * 100

Cash as Percentage to Total Assets of Selected Cement Companies has been shown in Table 4.3.

**Table 4.3**

<table>
<thead>
<tr>
<th>Year</th>
<th>Gujarat Siddhi Cement</th>
<th>Saurashtra Cement Ltd.</th>
<th>Gujarat Ambuja</th>
<th>Digvijay Cement Ltd</th>
<th>Tata Chemicals Ltd</th>
<th>Narmada Cement Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1.91</td>
<td>2.42</td>
<td>2.55</td>
<td>0.54</td>
<td>2.86</td>
<td>2.06</td>
</tr>
<tr>
<td>2009</td>
<td>2.26</td>
<td>3.42</td>
<td>5.64</td>
<td>1.69</td>
<td>1.09</td>
<td>2.82</td>
</tr>
<tr>
<td>2010</td>
<td>1.76</td>
<td>3.09</td>
<td>3.13</td>
<td>2.44</td>
<td>1.02</td>
<td>2.29</td>
</tr>
<tr>
<td>2011</td>
<td>1.05</td>
<td>2.25</td>
<td>1.37</td>
<td>1.45</td>
<td>0.77</td>
<td>1.38</td>
</tr>
<tr>
<td>2012</td>
<td>0.83</td>
<td>2.63</td>
<td>0.53</td>
<td>2.39</td>
<td>0.33</td>
<td>1.34</td>
</tr>
<tr>
<td>Company Average</td>
<td>1.56</td>
<td>2.76</td>
<td>2.65</td>
<td>1.70</td>
<td>1.21</td>
<td>1.98</td>
</tr>
</tbody>
</table>

Source: Annual Report of Selected cement companies and EMIS database website
The Cash as percentage to Total Assets of all the cement companies shows fluctuating trend throughout the study period except India Cement which shows decreasing trend. The minimum Cash as percentage to Total Assets in Gujarat siddhi cement is 0.83 (2012), Saurashtra Cement Ltd. is 2.25 (2011), Gujarat Ambuja is 0.53 (2012), Digvijay Cement Ltd is 0.54 (2008), and in Tata chemicals ltd is 0.33 (2012). The Maximum cash as percentage to Total Assets in Gujarat siddhi cement is 2.26 (2009), Saurashtra Cement Ltd. is 3.42 (2009), Gujarat Ambuja is 5.64 (2009), and Digvijay Cement Ltd is 2.44 (2010) and in Tata chemicals ltd is 2.86 (2008).
Chart No.-4.3

Cash to total assets ratio

- Gujarat siddhi cement
- Saurashtra Cement Ltd
- Gujarat Ambuja cement
- Digvijay Cement Ltd
- Tata chemicals ltd
- Narmada Cement Ltd

Year:
- 2008
- 2009
- 2010
- 2011
- 2012
Calculation of ‘F’ (ANOVA) Test:

Table No. 4.3 (A)

Analysis of ‘F’ Test in Selected Cement companies under the Study Cash as percentage to total assets

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>9.45567</td>
<td>5</td>
<td>1.891134</td>
<td>1.783657</td>
<td>2.620654</td>
</tr>
<tr>
<td>Within Groups</td>
<td>25.44616</td>
<td>24</td>
<td>1.060257</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34.90183</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis:

H₀ = There is no significant difference between Cash as percentage to total assets in selected cement factories under the study.

H₁ = There is significant difference between Cash as percentage to total assets in selected cement factories under the study.

5 % level of significance table value is 2.620.

The calculated value of ‘F’ is 1.78 and table value is 2.620.

Hence,

Fₑ < Fₜ

The calculated value of ‘F’ is less than the table value. The Null Hypothesis is accepted and Alternative Hypothesis is rejected.
4. Cash to Net Working Capital Ratio

This ratio measures how well company can meet its short-term liabilities using its liquid assets such as cash and cash equivalents and marketable securities. This ratio will also help uncover situations where the company may be too heavily spending its cash on inventory that is not being turned into sales as rapidly as it should be.

**Formula:**

Cash to net working capital ratio = cash/net working capital

Cash to Net Working Capital of Selected Cement Companies has been given in Table 4.4.
### Table 4.4

**Cash to Net Working Capital of Selected Cement Companies for the years 2008 to 2012**

<table>
<thead>
<tr>
<th>Year</th>
<th>Gujarat siddhi cement</th>
<th>Saurashtra Cement Ltd</th>
<th>Gujarat Ambuja</th>
<th>Digvijay Cement Ltd</th>
<th>Tata chemicals Ltd</th>
<th>Narmada Cement Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>0.15</td>
<td>0.16</td>
<td>0.21</td>
<td>0.04</td>
<td>0.17</td>
<td>0.15</td>
</tr>
<tr>
<td>2009</td>
<td>0.15</td>
<td>0.26</td>
<td>0.40</td>
<td>0.11</td>
<td>0.04</td>
<td>0.19</td>
</tr>
<tr>
<td>2010</td>
<td>0.14</td>
<td>0.24</td>
<td>0.31</td>
<td>0.14</td>
<td>0.04</td>
<td>0.17</td>
</tr>
<tr>
<td>2011</td>
<td>0.10</td>
<td>0.27</td>
<td>0.18</td>
<td>0.09</td>
<td>0.03</td>
<td>0.13</td>
</tr>
<tr>
<td>2012</td>
<td>0.09</td>
<td>-0.45</td>
<td>0.21</td>
<td>0.19</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Company Average</td>
<td>0.13</td>
<td>0.09</td>
<td>0.26</td>
<td>0.11</td>
<td>0.06</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Source: Annual Report of Selected cement companies and EMIS database website

The Cash to Net Working Capital of all the cement companies shows fluctuating trend throughout the study period except Gujarat siddhi cement and Digvijay Cement Ltd which shows decreasing trend. The minimum Cash to Net Working Capital in Gujarat siddhi cement is 0.09 (2012), Saurashtra Cement Ltd is -0.45 (2012), Gujarat Ambuja is 0.18 (2011), Digvijay Cement Ltd is 0.04 (2008), and in Tata chemicals Ltd is 0.01 (2012). The Maximum Cash to Net Working Capital in Gujarat siddhi cement is 0.15 (2008 and 2009), Saurashtra Cement Ltd is 0.27 (2011), Gujarat Ambuja is 0.40 (2009), and Digvijay Cement Ltd is 0.19 (2012) and in Tata chemicals Ltd is 0.17 (2008).
Chart No.-4.4

Cash to Net working capital ratio

- Gujarat siddhi cement
- Saurashtra Cement Ltd
- Gujarat Ambuja cement
- Digvijay Cement Ltd
- Tata chemicals ltd
- Narmada Cement Ltd

Year

Ratio
Calculation of ‘F’ (ANOVA) Test:

Table No. 4.4 (A)

Analysis of ‘F’ Test in Selected Cement companies under the Study Cash to Net Working Capital

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.12015</td>
<td>5</td>
<td>0.02403</td>
<td>1.238341</td>
<td>2.620654</td>
</tr>
<tr>
<td>Within Groups</td>
<td>0.46572</td>
<td>24</td>
<td>0.019405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.58587</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis:

H₀= There is no significant difference between Cash to Net Working Capital in selected cement factories under the study.

H₁= There is significant difference between Cash to Net Working Capital in selected cement factories under the study.

5 % level of significance table value is 2.620.

The calculated value of 'F' is 1.24 and table value is 2.620.

Hence,

Fc < Ft

The calculated value of 'F' is less than the table value. The Null Hypothesis is accepted and Alternative Hypothesis is rejected.

5. Cash to current assets ratio

The cash to current assets ratio tells us what portion of total current assets is constituted by the company-cash and cash equivalents and marketable securities.
Formula:

Cash to current assets ratio = cash/current assets

Cash to Current Assets of Selected Cement Companies has been presented in Table 4.5.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gujarat siddhi cement</th>
<th>Saurashtra Cement Ltd</th>
<th>Gujarat Ambuja</th>
<th>Digvijay Cement Ltd</th>
<th>Tata chemicals Ltd</th>
<th>Narmada Cement Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>0.05</td>
<td>0.11</td>
<td>0.14</td>
<td>0.02</td>
<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
<td>2009</td>
<td>0.07</td>
<td>0.16</td>
<td>0.30</td>
<td>0.07</td>
<td>0.03</td>
<td>0.12</td>
</tr>
<tr>
<td>2010</td>
<td>0.06</td>
<td>0.13</td>
<td>0.17</td>
<td>0.09</td>
<td>0.03</td>
<td>0.10</td>
</tr>
<tr>
<td>2011</td>
<td>0.04</td>
<td>0.10</td>
<td>0.10</td>
<td>0.06</td>
<td>0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>2012</td>
<td>0.03</td>
<td>0.11</td>
<td>0.05</td>
<td>0.12</td>
<td>0.01</td>
<td>0.06</td>
</tr>
<tr>
<td>Company Average</td>
<td>0.05</td>
<td>0.12</td>
<td>0.15</td>
<td>0.07</td>
<td>0.04</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Source: Annual Report of Selected cement companies and EMIS database website

The cash to current assets of all the cement Companies shows fluctuating trend throughout the study period except India Cement which shows decreasing trend. The minimum cash to current assets ratio in Gujarat siddhi cement is 0.04 (2012), Saurashtra Cement Ltd is 0.10 (2012), Gujarat Ambuja is 0.05 (2012), Digvijay Cement Ltd is 0.02 (2008), and in India Cement is 0.01 (2012). The maximum cash to current assets in Gujarat siddhi cement is 0.07 (2010), Saurashtra Cement Ltd is 0.16 (2011), Gujarat Ambuja is 0.30 (2011), and Digvijay Cement Ltd is 0.12 (2012) and in Tata chemicals ltd is 0.10 (2008).
Calculation of ‘F’ (ANOVA) Test:
Table No. 4.5 (A)

Analysis of ‘F’ Test in Selected Cement companies under the
Study Cash to current assets ratio

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.047257</td>
<td>5</td>
<td>0.009451</td>
<td>4.358801</td>
<td>2.620654</td>
</tr>
<tr>
<td>Within Groups</td>
<td>0.05204</td>
<td>24</td>
<td>0.002168</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sTotal</td>
<td>0.099297</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis:

$H_0$: There is no significant difference between Cash to current assets ratio in selected cement factories under the study.

$H_1$: There is significant difference between Cash to current assets ratio in selected cement factories under the study.

5 % level of significance table value is 2.620.

The calculated value of 'F' is 4.35 and table value is 2.620. Hence,

$F_c > F_t$

The calculated value of 'F' is greater than the table value. The Null Hypothesis is rejected and Alternative Hypothesis is accepted.

4.7. Liquidity Analysis

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

(1) The certainty 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 relatively large investment in current assets will result in no difficulty in paying the claims of the creditors and others.

According to Mauraw Bahadur, “Analysis of liquidity provides the measure of the ability of the enterprise to meet its obligation. It is not sufficient that the final accounts show a profit and the balance sheet a rosy picture of financial health of the enterprise. All this will look meaning-less, unless the cash inflows and outflows are so regulated that at all times there is enough cash available to meet obligations as and when they mature. The analysis of liquidity should therefore, be taken into consideration, the size of the components of current assets which can be readily converted into cash to meet maturing liability. The size, character and sequence of maturity of liabilities are also of significant importance and deserve due attention.” The term liquid assets is used 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 others 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 items 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 amount of working capital, or net current assets, 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 a liability has been paid”.

Liquidity management 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 debt, while the rest is met from short-term sources. It goes without saying that if the maturing obligations 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 this will
sustain the credit reputation of the firm and a going firm will accordingly face difficulty in holding a particular level of current assets. But failure to meet such obligations 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 the short-term source.

The word liquidity suggests a kind of measurement or qualification of the prospect of meeting maturing obligations.

In a sound business, the source of finance should be supplemented by own cash generation. The quantum of conversion of current assets into cash or in other words, near liquid asset 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 asset is blocked in inventories and credit sales (Sundry debtors), not any ready cash will not be available to pay current debt but also there is a risk of shortage in the total current asset available because of possible fall in the value of inventories, possible losses in account of bad debts. The quality of current asset 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 favourable credit rating. The efficient management of working capital requires constant attention to process of rapid conversion of receivable and inventory into cash.

### 4.8 Measurement of Liquidity and Trends

Working capital trend 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 analyst to make a study about the trend and direction of working capital. Further, a study should also be made about the trend 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 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 in sales would usually reflect an unfavourable situation,
an upward trend of current assets, inventories, accounts receivable, cash in bank balances and other current assets, in connection with a downward trend of current liabilities would usually be viewed favourably. All such conclusions throw light on one or more aspects of the working capital position and have to be reconciled with those other aspects.