Analytical Study of Working Capital of Selected Cement Industries

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Abstract:
In finance, capital structure refers to the way a corporation finances its assets through some combination of equity, debt, or hybrid securities. A firm's capital structure is then the composition or 'structure' of its liabilities. In reality, capital structure may be highly complex and include dozens of sources. Defined as the difference between current assets and current liabilities. There are some variations in how working capital is calculated. Variations include the treatment of short-term debt. In addition, current assets may or may not include cash and cash equivalents, depending on the company. Current assets minus current liabilities. Working capital measures how much in liquid assets a company has available to build its business. The number can be positive or negative, depending on how much debt the company is carrying. In general, companies that have a lot of working capital will be more successful since they can expand and improve their operations. Companies with negative working capital may lack the funds necessary for growth. Also called net current assets or current capital. A measure of both a company's efficiency and its short-term financial health. The working capital ratio is calculated as:

Working capital = Current assets – Current liabilities

Positive working capital means that the company is able to pay off its short-term liabilities. Negative working capital means that a company currently is unable to meet its short-term liabilities with its current assets (cash, accounts receivable and inventory). The amount of money a company has on hand, or will have, in a given year. Working capital is calculated by subtracting current liabilities from current assets. That is, one takes the value of all debts and obligations for the current year and subtracts that from the value of all cash and assets that might reasonably be converted into cash in the current year.

Keywords: *Capital, Cement industries, Current assets, Debt, Working capital*

1. Introduction

Any person cannot ignore the necessity of funds in a business unit either a retail shop or a large manufacturing unit. Money is the only common factor in all units. Thus money management is must that is commonly known as financial management. Proper management of invested funds in a business results in effective financial management. Each and every business unit needs funds. The uses of funds of a concern can be divided into two parts namely long-term funds and short-term funds. The long–term investment may be termed as 'fixed investment.' A major part of the long-term funds is invested in the fixed assets. These fixed assets are retained in the business to earn profits during the life of the fixed assets. To run the business operations short–term assets are also required. A manufacturing concern is sure to collapse without an adequate supply of working capital. Working capital is just like the heart of business. Working capital management is a significant in financial management due to the fact that is plays a pivot role in keeping the wheels of a business enterprise running. Working capital management is concerned with short-term financial decisions. Working capital is work as Blood in business. So, any business firm cannot work without working

capital. Inadequate working capital means shortage of inputs, whereas excess of it leads to extra cost. So the quantum of working capital in every business firm should be neither more nor less than what is actually required. The management has to see that funds invested as working capital in their organization earn return at least as much as they would have earned return if it invested anywhere else. At the time of increasing capital costs and scare funds, the area of working capital management assumes added importance as it deeply influences a firm's liquidity and profitability. A notable feature of utilization of funds is that they are of recurring nature. Therefore, efficient working capital management requires a proper balance between generation and utilization of these funds without which either shortage of funds will cause obstruction in the smoother functioning of the organization or excess funds will prevent the firm from conducting its business efficiently. So the main objective of working capital management is to arrange the needed funds on the right time from the right source and for the right period, so that a trade of between liquidity and profitability may be achieved.

2. Objectives

The mandatory objective is to study working capital structure and also to measure the social performance of the selected corporate concept. The objective of the study is to analyze of the working capital structure of cement industries.

The main objectives of this study are as under:

1. To understand the concept of working capital structure.
2. To understand the trend analysis of financial statement.
3. To document the capital structure in cement industries.
4. To analyze of working capital structure in cement industries.
5. To evaluate the performance of the cement industries in terms of Ratio.
6. To study comparison of last 10 years performance and social responsibility of selected ten corporate units.

3. Hypotheses

For the present study the researcher has formulated hypothesis NULL hypothesis and alternative hypothesis were tested with the help of statistical tools. The statements of hypothesis were as under;

3.1 Null hypothesis (H_0)

1. There will be no significant difference in Current Ratio in selected cement industries.
2. There will be no significant difference in Quick Ratio in selected cement industries.

3.2 Alternative hypothesis (H_1)

1. There will be significant difference in Current Ratio in selected cement industries.
2. There will be significant difference in Quick Ratio in selected cement industries.

4. Time period

As any researcher wish to collect all required data and information about the research so collection of data, to analyze and for better conclusion, researcher was interested in proper period. Here researcher undertakes research on working capital structure in cement industries for the period of ten years. The present study is made for a period of the ten accounting year starting from 2003-04 to 2012-13.

5. Tools and Techniques

Researcher has followed scientific approach to design the research methodology for investigation. For this study researcher has used secondary data as a source of information.

The following tool & techniques have been classified in the study.

5.1 Accounting techniques

The researcher picks up the techniques to suit their requirement and also basis to data available to them. The accounting techniques which are used for the analysis is as under.

5.2 Ratio analysis

A ratio is a quotient of two numbers and the relation expressed between two figures. Ratio analysis is a process of comparison of one figure against another, which makes ratio. Ratio analysis is a very powerful.

5.3 Statistical techniques

The statistical techniques which are used for the analysis are as under:

5.3.1 Average

Average is most important and frequently used technique. It is also known as mean. Average is obtained by taking the sum of all observations comprising a given set of data and dividing the sum by the total number of observations.

5.3.2 The standard deviation

Standard deviation is retired as the square –root of the average of squares of deviations. When such deviations for the values of individual items in series are obtained from the arithmetic average.

5.3.3 T-Test

T-test is a way to test for comparing two samples, involving small values of 'n' that does not require the variances of the two populations to be equal, but the assumption that the two populations are normal must continue to applying this situation, it is used t-test for difference in means and work out the test statistic 't' as under. In order to test a hypothesis the comparison is made by computing a value of 't' on the basis of the formula. If the computing value of 't' is less than the critical value (table value) of 't' at the significance level with appropriate degrees of freedom, the null hypothesis is accepted otherwise it is rejected.

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

6. Analysis and Evaluation

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

6.1 Current Ratio

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

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Above formula comprises of two components i.e., current assets and current liabilities. Some

examples of current assets and current liabilities are given below:

The ratio is mainly used to give an idea of the company's ability to pay back its short-term liabilities (debt and payables) with its short-term assets (cash, inventory, receivables). While this shows the company is not in good financial health, it does not necessarily mean that it will go bankrupt - as there are many ways to access financing - but it is definitely not a good sign. The current ratio is the index of the concern's financial stability since it shows the extent of the working capital. Which in the amount by which current assets exceeds the current liabilities. The current ratio of selected cement industries is being described in table 1.

Table 1. Current Ratio (In Times) In Cement Industries. Under Study from 2003-04 to2012-13

Sr. No	Year	Ambuja Cements Ltd.	Gujarat Sidhee Cement Ltd.	Sanghi Industries Ltd.	Saurashtar Cement Ltd.	Shree Digvijay Cement Co. Ltd.	Ultratech Cement Ltd.	
1	**2003 -2004**	3.059	2.171	0.570	0.536	1.378	1.924	
2	**2004 -2005**	1.414	1.771	0.557	0.423	0.267	1.906	
3	**2005 -2006**	1.477	1.280	0.902	0.711	0.296	1.389	
4	**2006 -2007**	1.675	1.007	2.827	1.371	0.479	1.271	
5	**2007 -2008**	1.357	1.666	2.940	1.249	0.586	1.019	
6	**2008 -2009**	1.587	1.009	2.947	0.586	1.249	1.093	
7	**2009 -2010**	1.136	1.487	1.805	0.479	1.371	1.133	
8	**2010 -2011**	1.309	1.217	1.575	0.296	0.711	1.084	
9	**2011 -2012**	1.267	1.261	0.588	0.267	0.423	1.022	
10	**2012 -2013**	1.242	1.533	0.719	1.378	0.536	0.992	
Xi		1.552	1.440	1.543	0.73	0.73	1.283	1.213 $= \bar{X}$
$\{Xi - \bar{X}\}$		0.339	0.227	0.329	-0.483	-0.483	0.070	
$\{Xi - \bar{X}\}^2$		0.115	0.051	0.108	0.233	0.233	0.004	0.747 $= \sum\{Xi - \bar{X}\}^2$

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

6.2 Ambuja Cements Ltd.

Table 5.1 and Graph 5.1 reveal that the average ratio of study period was more than the norms. i.e. 1.552 times. The average ratios of this industry were highest among all selected industry. During the study period of this industry the highest ratio was 3.059 times, in the year 2003-04 and the lowest ratio was 1.242 times in the year 2012-13. In the year 2003-04 the ratio was 3.059 which is now decreased in 2004-05 and was 1.414 than it increased in 2005-06, 2006-07 respectively 1.477 and 1.675. In 2007-08 again it decreased to 1.357. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 1.587, 1.136, 1.309, 1.267 and 1.242. For the creditor point of view the solvency of this industry was sound because average ratio was more than the norms.

6.3 Gujarat Sidhee Cement Ltd.

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

1.441 times. During the study period of this industry the highest ratio was 2.171 times, in the year 2003-04 and the lowest ratio was 1.007 times in the year 2006-07. In the year 2003-04 the ratio was 2.171 which is now decreased in 2004-05 and was 1.771 then again decreased in 2005-06, 2006-07 respectively 1.28 and 1.007. In 2007-08 than it increased to 1.666. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 1.009, 1.487, 1.21, 1.261 and 1.533.
For the creditor point of view the solvency of this industry was sound because average ratio was more than the norms.

6.4 Sanghi Industries Ltd.

Table 5.1 and Graph 5.3 reveal that the average ratio of study period was more than the norms. i.e. 1.543 times. During the study period of this industry the highest ratio was 2.947 times, in the year 2008-09 and the lowest ratio was 0.588 times in the year 2011-12. In the year 2003-04 the ratio was 0.57 which is now decreased in 2004-05 and was 0.557 than it increased in 2005-06, 2006-07, 2007-08, 2008-09 respectively 0.902 2.827, 2.94, and 2.947.In 2009-10 again it decreased to 1.805. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 1.575, 0.588 and 0.719. For the creditor point of view the solvency of this industry was sound because average ratio was more than the norms.

6.5 Saurashtar Cement Ltd.

Table 5.1 and Graph 5.4 reveal that the average ratio of study period was bellow than the norms. i.e. 0.73 times. The average ratios of this industry were lowest among all selected industry. During the study period of this industry the highest ratio was 1.378 times, in the year 2012-13 and the lowest ratio was 0.266 times in the year 2011-12. In the year 2003-04 the ratio was 0.536 which is now decreased in 2004-05 and was 0.423 than it increased in 2005-06, 2006-07 respectively 0.711 and 1.371. In 2007-08 again it decreased to 1.24. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.586, 0.479, 0.296, 0.266 and 1.378. For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.6 Shree Digvijay Cement Co. Ltd.

Table 5.1 and Graph 5.5 reveal that the average ratio of study period was bellow than the norms. i.e. 0.73 times. The average ratios of this industry were lowest among all selected industry. During the study period of this industry the highest ratio was 1.378 times, in the year 2003-04 and the lowest ratio was 0.266 times in the year 2005-06. In the year 2003-04 the ratio was 1.378 which is now decreased in 2004-05 and 2005-06 was respectively 0.267, 0.266 than it increased in 2006-07, 2007-08, 2008-09, 2009-10 respectively 0.479, 0.586, 1.249 and 1.371. In 2010-11 again it decreased to 0.711. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 0.423, and 0.536.
For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.7 Ultratech Cement Ltd.

Table 5.1 and Graph 5.6 reveal that the average ratio of study period was more than the norms. i.e. 1.284 times. During the study period of this industry the highest ratio was 1.924 times, in the year 2003-04 and the lowest ratio was 0.99 times in the year 2012-13. In the year 2003-04 the ratio was 1.924 which is now decreased in 2004-05, , 2005-06, 2006-07 and 2007-08 was 1.906, 1.389, 1.271, 1.019 than it increased in 2008-09, 2009-10 respectively 1.093 and 1.133. In 2010-11 again it decreased to 1.084. In 2011-12 to 2012-13 it fluctuates and the ratio was respectively 1.022 and 0.99. For the creditor point of view the solvency of this industry was sound because average ratio was more than the norms.

6.8 Null hypothesis (H_0)

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

6.8.1 Alternative Hypothesis (H_1)

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

T-test

$$\text{S.D.} = \sqrt{\frac{\sum\{Xi - \bar{X}\}^2}{n-1}}$$

$$\text{S.D.} = \sqrt{\frac{0.747}{6-1}}$$

$$\boxed{\text{S.D.} = 0.386}$$

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

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

$$\boxed{T = 7.68}$$

T_{cal} = 7.68 T_{tab} = 2.571 (at 5% level for D.F.=5)

7.68 > 2.571

T_{cal} > T_{tab}

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

6.9 Quick Ratio

The quick ratio is sometime called the "acid-test" ratio and is one of the best measures of liquidity. The liquid is a more refined measure of the firm's liquidity. This ratio establishes a relationship between quick or liquid assets and liquid liabilities. The liquid ratio is finding out by total of liquid liabilities. The formula of liquid ratio is as follow:

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

Current assets include cash and book debt (debtor and bills receivable) only. Inventories are excluded. Because it takes time to sell finished goods and convert raw materials and work-in-progress into finished goods. Prepaid expenses should also be excluded, because they cannot convert into cash. Generally a quick ratio of 1:1 is considered to represent a satisfactory current financial condition. But 0.8:1 is acceptable, any less and the business could suffer financial difficulties. It is commonly held that liquid ratio should be 1:1 if this ratio is less than 1:1 i.e. liquid assets are less than liquid liability the financial position of the concern shall be deemed to be unsound and real cash will have to be provide for the payment of liabilities. On the other hand if the ratio is more than 1:1 it can be summarized that the financial condition of the enterprise is sound and good. The quick ratio of selected cement industries is being described in table 2.

Table 2. Quick Ratio (In Times) In Cement Industries Under Study from 2003-04 to 2012-13

Sr. No.	Year	Ambuja Cements Ltd.	Gujarat Sidhee Cement Ltd.	Sanghi Industries Ltd.	Saurashtar Cement Ltd.	Shree Digvijay Cement Co. Ltd.	Ultratech Cement Ltd.	
1	**2003 -2004**	2.835	0.963	0.192	0.295	0.109	0.929	
2	**2004 -2005**	0.704	0.650	0.175	0.261	0.374	0.919	
3	**2005 -2006**	0.767	0.529	0.418	0.464	0.548	0.426	
4	**2006 -2007**	1.271	0.366	2.425	1.082	0.939	0.465	
5	**2007 -2008**	1.272	0.859	3.048	0.988	0.728	0.413	
6	**2008 -2009**	1.172	0.339	3.306	0.301	2.289	0.433	
7	**2009 -2010**	1.072	0.588	1.612	0.246	0.282	0.382	
8	**2010 -2011**	1.622	0.324	1.346	0.069	0.282	0.368	
9	**2011 -2012**	1.470	0.560	0.141	0.06	0.154	0.403	
10	**2012 -2013**	1.601	0.867	0.080	0.526	0.223	0.348	
Xi		1.378	0.604	1.274	0.429	0.593	0.509	0.798 $= \bar{X}$
$\{Xi - \bar{X}\}$		0.580	-0.193	0.476	-0.368	-0.205	-0.289	
$\{Xi - \bar{X}\}^2$		0.337	0.037	0.226	0.136	0.042	0.083	0.863 $= \sum\{Xi - \bar{X}\}^2$

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

6.10 Ambuja Cements Ltd.

Table 5.2 and Graph 5.7 reveal that the average ratio of study period was more than the norms. i.e. 1.378 times. The average ratios of this industry were highest among all selected industry. During the study period of this industry the highest ratio was 2.835 times, in the year 2003-04 and the lowest ratio was 0.704 times in the year 2004-05. In the year 2003-04 the ratio was 2.835 which is now decreased in 2004-05 and was 0.704 than it increased in 2005-06, 2006-07, 2007-08 respectively 0.767,1.271 and1.272. In 2008-09 and 2009-10 again it decreased to respectively 1.172 and 1.072. In 2010-11 to 2012-13 it fluctuates and the ratio was respectively 1.622, 1.47 and 1.601.

For the creditor point of view the solvency of this industry was sound because average ratio was more than the norms.

6.11 Gujarat Sidhee Cement Ltd.

Table 5.2 and Graph 5.8 reveal that the average ratio of study period was more bellow the norms. i.e. 0.604 times. During the study period of this industry the highest ratio was 0.963 times, in the year 2010-11 and the lowest ratio was 0.324 times in the year 2010-11. In the year 2003-04 the ratio was 0.963 which is now decreased in 2004-05 and was 0.65 then again decreased in 2005-06, 2006-07 respectively 0.529 and 0.366. In 2007-08 than it increased to 0.859. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.339, 0.588, 0.324, 0.56 and 0.867. For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.12 Sanghi Industries Ltd.

Table 5.2 and Graph 5.9 reveal that the average ratio of study period was bellow than the norms. i.e. 0.080 times. During the study period of this industry the highest ratio was 3.306 times, in the year

2008-09 and the lowest ratio was 0.08 times in the year 2012-13. In the year 2003-04 the ratio was 0.192 which is now decreased in 2004-05 and was 0.175 than it increased in 2005-06, 2006-07, 2007-08, 2008-09 respectively 0.418, 2.425, 3.048, and 3.306. In 2009-10 again it decreased to 1.612. In 2010-11 to 2012-13 it decreased and the ratio was respectively 1.346, 0.141 and 0.08. For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.13 Saurashtar Cement Ltd.

Table 5.2 and Graph 5.10 reveal that the average ratio of study period was bellow than the norms. i.e. 0.492 times. The average ratios of this industry were lowest among all selected industry. During the study period the highest ratio was 1.082 times of this industry, in the year 2006-07 and the lowest ratio was 0.06 times in the year 2011-12. In the year 2003-04 the ratio was 0.295 which is now decreased in 2004-05 was 0.261 than it increased in 2005-06, 2006-07 respectively 0.464 and 1.082. In 2007-08 again it decreased to 0.988. In 2008-09 to 2012-13 it fluctuates and the ratio was respectively 0.301, 0.246, 0.069, 0.06 and 0.526. For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.14 Shree Digvijay Cement Co. Ltd.

Table 5.2 and Graph 5.11 reveal that the average ratio of study period was bellow than the norms. i.e. 0.593 times. During the study period of this industry the highest ratio was 2.289 times, in the year 2008-09 and the lowest ratio was 0.109 times in the year 2003-04. In the year 2003-04 the ratio was 0.109 which is now increased in 2004-05, 2005-06 and 2006-07 was respectively 0.374, 0.548 and 0.939, than it decreased in 2007-08 up to, 0.728 times. 2008-09 to 2012-13 it fluctuates and the ratio was respectively 2.298, 0.282, 0.282, 0.154 and 0.223. For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.15 Ultratech Cement Ltd.

Table 5.2 and Graph 5.12 reveal that the average ratio of study period was bellow than the norms. i.e. 0.509 times. During the study period of this industry the highest ratio was 0.929 times of this industry, in the year 2003-04 and the lowest ratio was 0.348 times in the year 2012-13. In the year 2003-04 the ratio was 0.929 which is now decreased in 2004-05 and 2004-05 was 0.919 and 0.426 than it increased in 2006-07 up to 0.465. In 2007-08 again it decreased to 0.413. In 2009-10 to 2012-13 it fluctuates and the ratio was respectively 0.382, 0.368, 0.403 and 0.348. For the creditor point of view the solvency of this industry was not sound because average ratio was bellow than the norms.

6.16 Null hypothesis (H_0)

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

6.17 Alternative hypothesis (H_1)

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

T-test

$$\text{S. D.} = \sqrt{\frac{\sum\{\text{Xi} - \bar{\text{X}}\}^2}{\text{n} - 1}}$$

$$\text{S. D.} = \sqrt{\frac{0.863}{6-1}}$$

$$\boxed{\text{S. D.} = 0.415}$$

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

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

T= 4.65

T_{cal} = 4.65 T_{tab} = 2.571 (at 5% level for D.F.=5)

4.65 > 2.571

T_{cal} > T_{tab}

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

7. Conclusion and Finding

7.1 Current Ratio

The current ratio of selected cement industries during the study period shows an average 1.213. During the study period the Ambuja Cements Ltd. shows an average of 1.552, Gujarat Sidhee Cement Ltd. 1.440, Sanghi Industries Ltd. 1.543, Saurashtar Cement Ltd. 0.730, Shree Digvijay Cement Co. Ltd. 0.73, and Ultratech Cement Ltd. 1.283. T-test indicates that there was significant difference in the current ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.

7.2 Quick Ratio

The quick ratio of selected cement industries during the study period shows an average 0.798. During the study period the Ambuja Cements Ltd. shows an average of 1.378, Gujarat Sidhee Cement Ltd. 0.604, Sanghi Industries Ltd. 1.274, Saurashtar Cement Ltd. 0.429, Shree Digvijay Cement Co. Ltd. 0.593, and Ultratech Cement Ltd. 0.509. T-test indicates that there was significant difference in the quick ratio in selected cement industries. Because the calculate value of T was more than the tabulate value. So, alternative hypothesis has been accepted and null hypothesis has been rejected.

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