Shrinkhla Ek Shodhparak Vaicharik Patrika

A Study on the Liquidity Management of Select Cement Companies of Meghalaya

Abstract

Effective liquidity management is one of the requirements for the survival of an organization. Adequate working capital enables an organization to meet its obligations in time. It avoids the organization for making payment of unnecessary interests to the creditors. The firm has to invest enough funds in current assets for generating adequate sales capacity; there should be proper quantity & quality of inventories for maintaining and improving sales capacity. Working capital can be assumed as a lifeline of every concern. Without adequate working capital, no progress is possible; inadequate working capital leads to shortage of raw-materials & underutilization of machinery & finally failure of business. It is the review of existing literature in the field of liquidity management. Re- view of literature helps in capturing both conceptual and re-search based studies of liquidity management.

Keywords: Liquidity Management, Current Ratios, Quick Ratios, Super Quick Ratios, Annova, Correlations

Yoowanka Lyngdoh
Research Scholar,
Deptt.of Management,
North Eastern Hill University,
Tura Campus, Meghalaya

Introduction

Financial performance of any organization is usually judged in terms of its liquidity, long-term solvency, activity and profitability. Liquidity refers to the ability of a concern to meet its current obligations as and when they become due. A firm should ensure that it does not suffer from lack of liquidity, and also that it should not possess too much liquidity as it hampers profitability. The short-term obligations are met by realizing funds from current, floating or circulating assets. The current assets should either be liquid or near liquidity. If current assets can pay off current liabilities, then liquidity position is satisfactory. If a firm has a strong liquidity, it is able to meet the claims of the short-term credits when they are due, to maintain sufficient working capital for regular operations, to meet current interest and dividend requirements and to maintain a favourable credit rating Here both India and abroad based research and conceptual studies are involved. Many studies relating to management of various elements of working capital have been analyzed. Number of studies is accessible on the topic; it is the summary of critical points of a particular topic consisting of essential findings as well as theoretical and methodological contributions. A qualified literature review is characterized by displaying proper arranged ideas. The following displays the studies and observations on liquidity management.

Objectives of the Study

1. To analyse and compare the liquidity position of the selected cement company of Meghalaya.
2. To study the trend analysis of a select cement companies.
3. To test the inter-relationship among the cement companies.

Hypothesis Formulated in the Study

Following are the hypothesis formulated in the current study to be tested using various data analysis techniques:

Null Hypothesis (H_{01})

There is no significant different in the liquidity Ratios among the select cement Companies.

Null Hypothesis (H_{02})

There is no significant different in the liquidity Ratios over the years taken up for the study.

Population and Sampling

Population is also called universe, the whole. Sample is a part of population that represents the whole population. In Meghalaya, there are total eleven cement companies in operation till 2016. Out of the total

K.C. Biswal
Associate Professor,
Deptt.of Management,
North Eastern Hill University,
Tura Campus, Meghalaya

population which is eleven, a sample of five companies has been taken in the current study for the purpose of measuring the working capital performance of cement companies of Meghalaya. The basis for selection of five cement companies out of eleven cement companies of Meghalaya is that only five cement companies are those who are doing business in Meghalaya from last ten years. The aim of the researcher is to measure the working capital performance of the cement companies for last ten years therefore the cement companies who are in operations from last ten years have been selected as a sample for the current study. The list of the cement companies of Meghalaya has been given in the table below. The companies highlighted in the table are those which have been taken as a sample in the current study.

Table 1.3: List of Cement Companies in Meghalaya

S. No.	Name of the Cement Companies in Meghalaya
1	Mawmluh Cherra Cement Ltd.
2	Cement Manufacturing Companies Ltd.
3	Virgo Cement Ltd.
4	Meghalaya Cement Ltd.
5	Jaintia Cement Ltd.
6	Green valley Cement Ltd.
7	Hills Cement Ltd.
8	JUD Cement Ltd.
9	Amrit Cement Ltd.
10	Magic Cement Ltd.
11	Dalmia Cement Ltd.

Research Methodology

The study is based on secondary data. The data has been collected from Annual Report of select cement company of Meghalaya. The period has been taken from 2005-06 to 2014-15. The inter-relationships among liquidity have been tested by using correlation method. To measure the level of corporate liquidity the following financial ratio has been used:

Liquidity Ratios

Liquidity is ability of firm to meet its current obligations as and when they become due. The liquidity position of a firm will be satisfactory if current assets are sufficient to pay current liabilities. It can be measured as under:

Current Ratio

It states the relationship between current assets and current liabilities. A high current ratio represents a good liquidity position of the firm while a low current ratio represents a poor position of liquidity. An increase in the current ratio reflects the improvement in the liquidity position of the firm. On the other hand, a decrease in the current ratio states deterioration in the liquidity position of the firm. The ideal current ratio is 2:1. It means current assets should be double the current liabilities. It represents the satisfactory liquidity position. A high current ratio than ideal ratio is better after a point; but shareholders does not like it as it means a huge capital tied up in inventory or debtors. It may be affected by window dressing; so, a firm can't believe on it fully.

Quick or Acid Test or liquid Ratio

It states the relationship between liquid assets and current liabilities.

Liquid Assets= Current Assets – (Prepaid Expenses +Inventories)

Liquid assets are that assets are converted into cash within a period of short time (usually one year) without any loss in value. A current ratio equal to 1:1 is ideal ratio which represents satisfactory position of liquidity. It means to pay current liabilities; there should be liquid assets equal to current liabilities. But, it may give wrong result, if all debtors can be realized to meet the current needs. . In case of slow moving inventories and slow credit collections, both ratios may give unsatisfactory results regarding liquidity.

Super Quick Ratio

It represents the relation between absolute liquid assets and current liabilities. Absolute liquid assets are consists of cash at hand and cash at bank, and temporary investments or marketable securities. An absolute liquid ratio equal to 1:2 is an ideal ratio which represents satisfactory level of inventory. It means half absolute current assets are sufficient to pay current liabilities.

Review Literature

Garcia-Terual et all (2007) collected a panel of 8872 small to medium-sized enterprises from Spain covering the period 1996-2002. They tested the effects of working capital management on SME profitability using the panel data methodology. The results, which are robust to the presence of endogeneity, demonstrated that managers could create value by reducing their inventories and the number of days for which their accounts are outstanding. Moreover, shortening the cash conversion cycle also improves the firm's profitability.

Chakraborty (2009) evaluated the relationship between working capital and profitability of 25 selected companies in the Indian pharmaceutical industry during the period 1996-97 to 2007-08.Inadequacy of working capital may lead to the firm to insolvency, whereas excessive working capital implies idle funds which earns no profits. Therefore, efficient management of working capital is an integral part of the overall corporate strategy to improve corporate profitability. The partial regression co efficient shown in the multiple regression equation of ROCE on CR, ITR and DTR fitted in this study revealed that the liquidity management, inventory management and credit management made positive contribution towards improvement of the corporate profitability.

Mathuva (2009) examined the influence of working capital management components on corporate profitability by using a sample of 30 firms listed on Nairobi Stock Exchange for the periods 1993-2008. He used Pearson and Spearmans correlations, the pooled ordinary least squares and the fixed effects regression models to conduct data analysis. The key findings of his study were that there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers and profitability, there exists a highly

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significant positive relationship between the period taken to convert inventories to sales and profitability and there exists a highly significant positive relationship between the time it takes for firms to pay its creditors and profitability.

Nandi (2011) made an attempt to examine the influence of working capital management on corporate profitability.For assessing impact of working capital management on profitability of National Thermal Power Corporation Ltd. During the period of 10 years i.e., from 1999-2000 to 2008-09 Pearson's coefficient of correlation and multiple regression analysis between some ratios relating to working capital management and the impact measure relating to profitability ratio (ROI) had been computed and applied. An attempt had been undertaken for measuring the sensitivity of return of investment (ROI) to changes in the level of working capital leverage (WCL) of the studying company.

Bardia S.P, (2010) found that most firms had a large amount of cash invested in working capital and it is expected that the way in which working capital is administered will have a significant impact on profitability of those firms. He established a noteworthy negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms with the help of correlation and regression analysis.The findings of the study suggested that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum.The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills.

Yadav, R.A., (2011) Attempted to shed light on the empirical relationship between efficiency of working capital management and corporate profitability of selected companies in the Istanbul Stock Exchange for the period of 2005-2009. The companies should focus on working capital management in order to increase their profitability by seriously and professionally considering the issues on their cash conversion cycle which was derived from the number of day's accounts payable, the number of days accounts receivable and the number of days of inventories. The findings suggested that it may be possible to increase profitability by improving efficiency of working capital.

Rajesh and Ramana Reddy (2011) studied that Management of working capital in terms of liquidity and profitability management is essential for sound financial recital as it has a direct impact on profitability of the company.

Haq and Sohail and Zaman and Alam (2011) studied the Relationship between Working Capital Management and Profitability: A Case Study of Cement Industry in Pakistan. This study empirically examines the relationship between working capital management and profitability by using data of fourteen companies in cement industry in the Khyber Pakhton khuwa Province (KPK) of Pakistan. The study is based on secondary data collected from the financial statements of these companies which are listed in Karachi Stock Exchange for the period of six years from 2004-2009. The data was analyzed using the techniques of correlation coefficient and multiple regression analysis.

Result & Discussion
Liquidity Analysis

The liquidity analysis was carried out with the help of financial and statistical analysis such as ratio analysis, analysis of two-way variance, coefficient of variation, growth rates, and inter-correlation analysis to measure the ability of the cement companies in meeting their short-term obligations.

Current Ratio

Current ratio is the ratio of current assets and current liabilities. It is a measure of general liquidity and is most widely used to analyse the short-term financial position of a firm. A relative high current ratio is an indication that the firm is liquid and has the ability to pay its current obligations in time. On the other hand, a relatively low current ratio represents that the liquidity position of the firm is not good and the firm shall not be able to pay its current liabilities in time without facing difficulties. As a convention, the minimum of "two to one" ratio is a standard. It is referred to as "a banker's rule of thumb". However, each firm has to develop its own ratio from past experience and this only can be taken as a norm. What is applicable to Western Countries may not be equally applicable to the Indian condition having money market, management pattern and other factors of its own. Analysis of two-way variance was applied to find if there is any significant difference in the current ratio among the select cement companies over the years. The results are presented in table 1.

Table 1
Current Ratio of the Select Cement Companies

Companies	Year									
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Mawmluh Cherra Cement Limited	1.32	1.38	3.40	1.80	1.44	0.84	0.87	0.89	0.41	6.80
Jaintia Cement Limited	0.44	0.48	0.52	1.48	0.38	0.57	0.97	0.87	0.98	5.00
Virgo Cement Limited	5.83	5.56	2.70	3.10	4.31	3.63	0.20	1.03	1.46	1.66
Meghalaya Cement Limited	1.31	2.47	6.94	6.97	1.02	4.66	0.84	0.99	1.06	1.41
Cement Manufacturing Company Limited	3.91	3.84	8.62	7.27	4.84	1.30	3.31	3.86	1.33	1.91

Source: Computed from the Annual Reports of the Select Cement Companies.

Table 2
Current Ratio among the Companies over the Years: ANOVA

Source of Variation	Sum of Squares	D.F	Mean Square	Calculated F Value	Result
Between companies	46.729	4	11.682	3.219	.023 (significant)
Between years	59.441	9	6.605	1.820	.098(Not Significant)
Error	130.661	36	3.629		
Total	236.831	49	21.916		

The calculated F value of the current ratio among the cement companies (3.219) is greater than the table value (2.633) at 5% level of significance. This indicates that there is a significant difference in the current ratio among the select cement companies. Hence the null hypothesis H_01 is rejected.

The calculated F value over the years is (1.820), which is less than the table value of 2.153 at 5% level of significance. Therefore, the current ratio of the select companies does not differ significantly over the years. Therefore, the null hypothesis H_02 is accepted.

Table 3
Co-Efficient of Variation of the Current Ratio

Companies	*Mean*	Standard Deviation	Co-efficient of Variation
Mawmluh Cherra Cement Limited	1.91	1.90	99.47
Jaintia Cement Limited	1.16	1.38	118.96
Virgo Cement Limited	2.95	1.90	64.40
Cement Manufacturing Company Limited	4.02	2.40	59.70
Cement Manufacturing Company Limited	4.02	2.40	59.70
Overall	2.56	2.01	78.52

Source: Computed from the Annual Reports of the Select Cement Companies.

Co-efficient of variation was employed to test the consistency in the current ratio of the select cement companies. The variation in the current ratio is found to be high in Jaintia Cement (118.96%) followed by Mawmluh Cherra Cement and the least is registered in Meghalaya Cement (59.70%).The overall co-efficient of variation of the companies is (78.52 %,) which indicates that there is low variation in the current ratio of the select cement companies. The current ratio of the companies represents the poor liquidity in the recent years and these units were not able to pay their current liabilities in time without facing difficulties. The current ratio of the Mawmluh Cherra Cement was not satisfactory over the study period, whereas Cement Manufacturing Company and Virgo Cement had ample liquidity position from 2005-06 to 2008-09. The mean of the current ratio shows that Cement Manufacturing Company had satisfactory current ratio (4.02) followed by Virgo Cement (2.95). However, Jaintia Cement has low mean (1.16) of the current ratio.

Figure 1
Mean Current Ratio of the Cement Companies
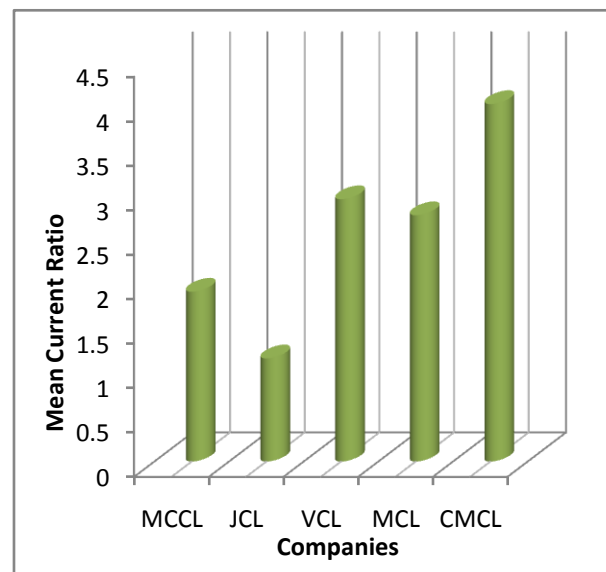

Table 4
Annual, Linear Annual and Compound Annual Growth Rates of the Current Ratio

Companies	Annual Growth Rate	Linear Annual Growth Rate	Compound Annual Growth Rate
Mawmluh Cherra Cement Limited	1.75	7.42	-0.48
Jaintia Cement	0.73	5.44	0.14
Virgo Cement	0.44	7.63	-0.97
Meghalaya Cement(Topcem)	1.06	1.41	-0.89
Cement Manufacturing Company (Star Cement)	0.13	1.01	-0.95
Overall	4.01	4.58	-0.63

Source: Computed from the Annual Reports of the Select Cement Companies.

The growth rate of the current ratio is calculated with the help of annual, linear annual and compound annual growth rates. The overall annual growth of the current ratio is (4.01), Mawmluh Cherra Cement has registered highest annual growth rate (1.75) of current ratio followed by Meghalaya Cement (1.06) and the least is in Cement Manufacturing Company (0.13). In the case of linear annual growth rates, Virgo Cement (7.63) has higher positive growth

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rates, whereas in compound annual growth rates Jaintia Cement has registered highest positive rates during the study period.

Quick Ratio

Quick ratio is also known as acid test or liquid ratio. It is the relationship between the liquid assets and liquid liabilities. If the financial manager finds on examination that the current ratio is favourable but the acid test is less than one to one, an immediate investigation should be made, since an undesirable inventory situation may exist. Usually, a high acid test ratio is an indication that the firm is liquid and has the ability to meet its liquid liabilities on time; on the other hand, a low quick ratio represents that the firm's liquidity position is not good. As a convention quick ratio of 1:1 is considered to be satisfactory. The quick ratio is very useful to measure the firm's capacity to pay off current obligations instantly and is a more meticulous test of liquidity than the current ratio. An effort is made to find out if there is any significant difference in the quick ratio among the select cement companies over the years.

Table 1
Quick Ratio of the Select Cement Companies

Companies	Year									
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Mawmluh Cherra Cement Limited	0.85	0.82	0.74	0.72	0.63	0.55	0.65	0.95	0.73	0.88
Jaintia Cement Limited	0.87	0.71	0.73	0.68	0.10	0.20	0.17	0.26	0.19	0.13
Virgo Cement Limited	0.12	1.21	0.73	0.79	0.42	0.10	0.26	0.37	0.23	2.79
Meghalaya Cement Limited	0.65	0.94	1.28	1.30	1.05	0.71	0.47	0.59	0.54	1.66
Cement Manufacturing Company Limited	1.15	0.33	0.66	1.58	1.89	1.32	0.81	0.75	0.83	0.62

Source: Computed from the Annual Reports of the Select Cement Companies.

Table 2
Quick Ratio among the Companies over the Years: ANOVA

Source of Variation	Sum of Squares	D.F	Mean Square	Calculated F Value	Result
Between companies	2.100	4	0.525	2.388	0.069 (Not Significant)
Between years	2.481	9	0.276	1.254	.295 (Not significant)
Error	7.917	36	.220		
Total	12.498	49	1.021		

The calculated F value of the quick ratio among the select cement companies is 2.388, which is lesser than the table value of 2.633 at 5% level of significance. This reveals that there is a no significant difference in the quick ratio among the cement companies. Hence the null hypothesis H_01 is accepted.

The calculated F value over the years is 1.254, which is less than the table value 2.153 at 5% level of significance. Hence, the null hypothesis H_02 is accepted.

Table 3
Co-efficient of Variation of the Quick Ratio

Companies	Mean	Standard Deviation	Co-efficient of Variation
Mawmluh Cherra Cement Limited	0.75	0.12	16.00
Jaintia Cement Limited	0.40	0.30	74.00
Virgo Cement Limited	0.70	0.81	115.7
Meghalaya Cement Limited	0.91	0.39	42.86
Cement Manufacturing Company Limited	0.99	0.48	48.48
Overall	0.75	0.42	56.00

Source: Computed from the Annual Reports of the Select Cement Companies.

It is obvious from the above analysis that the variation in the quick ratio is found to be high in Virgo Cement (115.7%) with a standard deviation of 0.81 followed by Jaintia Cement, and it is least in Mawmluh Cherra Cement (16.00%). The overall co-efficient of variation of the select cement companies altogether is (56.00%) which states that there is low degree of variation in the quick ratio over the study period. When compared with the standard of 1:1, the quick ratio of the select companies except Jaintia Cement represents satisfactory position and these companies are able to pay their quick liabilities in time during the study period. The average of the quick ratio shows that except jaintia Cement limited, all other cement companies have satisfactory quick ratio over the study period.

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Figure 1
Mean Quick Ratio of the Cement Companies
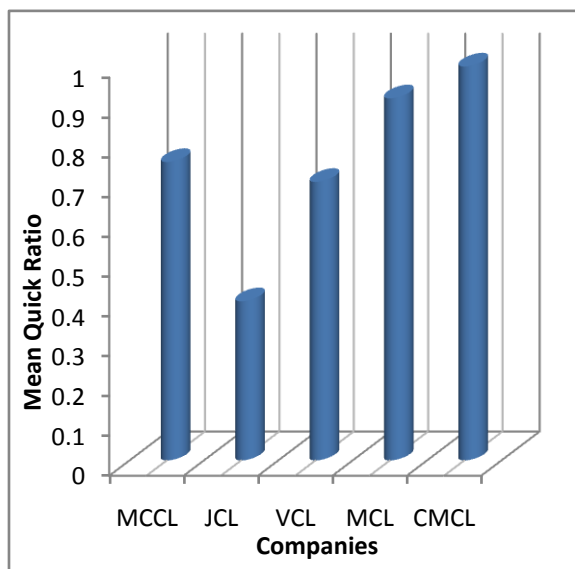

Table 4
Annual, Linear Annual and Compound Annual Growth Rates of the Quick Ratio

Companies	Annual Growth Rate	Linear Annual Growth Rate	Compound Annual Growth Rate
Mawmluh Cherra Cement Limited	0.20	-32.45	0.10
Jaintia Cement	-0.28	2.27	-0.98
Virgo Cement	2.26	3.08	1.32
Meghalaya Cement	0.02	1.75	-0.74
Cement Manufacturing Company Limited	0.20	1.65	-0.94
Overall	0.44	-4.74	-0.25

Source: Computed from the Annual Reports of the Select Cement Companies.

The overall annual growth rate of the quick ratio is 0.44. Virgo Cement has registered highest annual growth rate (2.26) followed by the Mawmluh Cherra Cement (0.02) and the least is in Jaintia Cement (-0.28). The linear annual growth rates of the Mawmluh Cherra Cement show negative trend; whereas compound growth rates of Jaintia Cement have registered negative values.Virgo Cement have the highest values both in linear and compound growth rates.

Super Quick Ratio

The super quick ratio is the relationship between cash and current liabilities and it should be calculated together with current ratio and acid test ratio. The specific norm for this ratio is 0.25:1 or 1:4 i.e. Re.1 worth cash is considered adequate to pay Rs.4 worth current liabilities in time as all the creditors are not expected to demand cash at the same time and their cash may be realized from debtors and inventories. Despite the fact that the ratio gives a more meaningful measure of liquidity, it is not of much use because keeping large cash balance has long since been disproved, and cash balance yields no return. An attempt is made to find whether there is any significant difference in the super quick ratio among the select cement companies over the years. The results are presented in table 1.

Table 1
Super Quick Ratio of the Select Cement Companies

Companies	Year									
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Mawmluh cherra cement	0.06	0.13	0.21	0.23	0.19	0.33	0.14	0.60	0.09	0.49
Jaintia Cement	0.85	0.93	0.99	0.12	0.64	1.67	1.42	0.64	0.45	0.54
Virgo Cement	0.28	0.26	0.26	0.51	0.03	0.05	0.53	0.03	0.21	0.10
Meghalaya Cement	0.96	0.58	0.69	0.46	0.31	0.74	0.82	0.53	0.27	0.31
Cement Manufacturing Company	1.26	1.22	0.69	0.15	1.30	0.30	0.82	0.91	0.47	0.30

Source: Computed from the Annual Reports of the Select Cement Companies.

Table 2
Super Quick Ratio among the Companies over the Years: ANOVA

Source of Variation	Sum of Squares	D.F	Mean Square	Calculated F Value	Result
Between companies	3.055	4	.764	7.904	.000 (Significant)
Between years	1.156	9	.128	1.329	.257 (Not significant)
Error	3.478	36	.097		
Total	7.689	49	0.989		

The calculated F value of the super quick ratio among the select cement companies (7.904) is greater than the table value (2.633) at 5% level of significance.This indicates that there is a considerable difference in the super quick ratio among the select cement companies. Hence the null hypothesis H_01 is rejected.

The calculated F value over the years is (1.329), which is lower than the table value of (2.153) at 5% level of significance. Thus, the super quick ratio of the companies does not differ significantly over the years. Hence, the null hypothesis H_02 is accepted.

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Table 3
Co-efficient of Variation of the Super Quick Ratio

Companies	Mean	Standard Deviation	Co-efficient of Variation
Mawmluh Cherra Cement	0.25	0.18	72.00
Jaintia Cement	0.83	0.46	55.42
Virgo Cement	0.23	0.18	78.26
Meghalaya Cement	0.57	0.23	40.35
Cement Manufacturing Company	0.74	0.43	58.10
Overall	0.52	0.29	55.77

Source: Computed from the Annual Reports of the Select Cement Companies.

It is seen in the above table that the variation in the super quick ratio is high in Virgo Cement (78.26%) followed by Mawmluh Cherra Cements and Cement Manufacturing Company, and it is least in Meghalaya Cement (40.35%). The co-efficient of variation of the select companies on the whole is (55.77%), which indicates a moderate variation in the super quick ratio of the cement companies during the study period. The average of the super quick ratio reveals that Mawmluh Cherra Cement and Virgo Cement have satisfactory super quick ratio during the study period.

Table 4
Annual, Linear Annual and Compound Annual Growth Rates of the Super Quick Ratio

Companies	Average Growth Rate	Linear Annual Growth Rate	Compound Annual Growth Rate
Mawmluh Cherra Cement	1.07	1.06	-0.18
Jaintia Cement	0.49	0.55	-0.94
Virgo Cement	1.64	0.08	-0.96
Meghalaya Cement	-5.56	0.26	-0.97
Cement Manufacturing Company	0.74	0.16	-0.98
Overall	-0.32	0.42	-0.81

Source: Computed from the Annual Reports of the Select Cement Companies.

The overall annual growth rate of the super quick ratio is -0.32. Virgo Cement has highest annual growth rate (1.64) followed by the Mawmluh Cherra Cement (1.07), Cement Manufacturing Company Cement (0.74), and the least is in Meghalaya Cements (-5.56). All the cement company have positive linear annual growth rate. In the case of compound annual growth rate all the Cements company has negative values during the study period.

Inventory to Working Capital Ratio

Inventory to Working Capital ratio,defined as a method to show what portion of a company's inventories is financed from its available cash,is essentials to businesses which hold inventory and survive on cash supplies.In general,the lower the ratio,the higher the liquidity of a company is.If a company has too much working capital invested in inventories they may have difficulty having enough working capital to make payments on short-term liabilities and account payable.This is a great ratio to be used with several others to thoroughly investigate the inner workings of a company.. An effort is made to find out if there is any significant difference in the inventory to working capital among the select cement companies over the years.

Table 1
Inventory to Working Capital Ratio of the Select Cement Companies

Companies	Year									
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Mawmluh Cherra Cement Limited	1.04	1.08	0.37	0.85	1.63	-2.79	-2.35	-2.04	-1.25	-0.39
Jaintia Cement Limited	-0.63	-2.72	-3.58	0.47	-0.38	-0.68	-0.27	-2.21	-12.30	2.38
Virgo Cement Limited	-0.79	0.76	-2.14	0.07	0.25	0.12	-0.02	0.66	0.29	0.13
Meghalaya Cement Limited	2.77	2.60	0.07	0.02	0.02	0.02	0.03	-1.77	-8.14	7.50
Cement Manufacturing Company Limited	12.11	2.03	4.31	5.27	4.80	1.64	1.70	1.54	1.76	4.94

Source: Computed from the Annual Reports of the Select Cement Companies.

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Table 2
Inventory to Working Capital Ratio among the Companies over the Years: ANOVA

Source of Variation	Sum of Squares	D.F	Mean Square	Calculated F Value	Result
Between companies	195.930	4	48.982	7.689	0.000 (Significant)
Between years	178.133	9	19.793	3.107	.007 (significant)
Error	229.322	36	6.370		
Total	603.385	49	75.145		

The calculated F value of the inventory to Working Capital ratio among the select cement companies is 7.689, which is greater than the table value of 2.633 at 5% level of significance. This reveals that there is a significant difference in the Inventory to Working Capital ratio among the cement companies. Hence the null hypothesis $H_0 1$ is rejected.

Table 3
Co-efficient of Variation of the Inventory to Working Capital Ratio

Companies	Mean	Standard Deviation	Co-efficient of Variation
Mawmluh Cherra Cement Limited	-0.39	1.61	-412.82
Jaintia Cement Limited	-1.99	3.99	-200.50
Virgo Cement Limited	-0.07	0.84	-1200.
Meghalaya Cement Limited	0.31	3.93	1267.74
Cement Manufacturing Company Limited	4.01	3.25	81.05
Overall	0.37	2.72	735.14

Source: Computed from the Annual Reports of the Select Cement Companies.

It is obvious from the above analysis that the variation in the Inventory to working capital ratio is found to be high in Meghalaya Cement (1267.74%) with a standard deviation of (3.93) followed by Cement Manufacturing Company (81.05).The overall co-efficient of variation of the select cement companies altogether is (735.14%) which states that there is low degree of variation in the inventory to working capital ratio over the study period. When compared the inventory to working capital ratio of the select companies except Virgo Cement represents satisfactory position and these companies are able to pay their short-term liabilities in time during the study period.
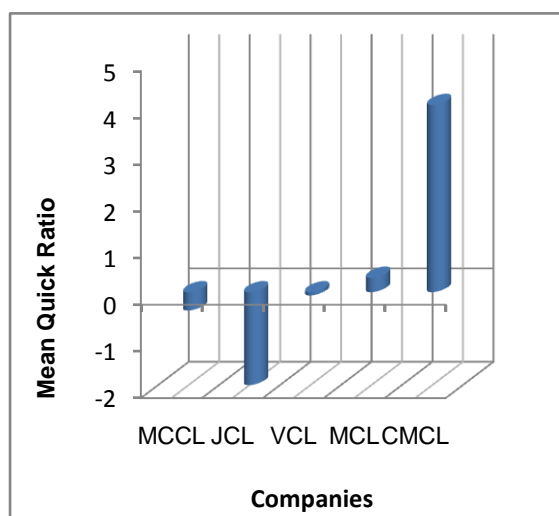
Figure 1
Mean Inventory to Working Capital Ratio of the Cement Companies

Table 4
Annual, Linear Annual and Compound Annual Growth Rates of the Inventory to Working Capital Ratio

Companies	Annual Growth Rate	Linear Annual Growth Rate	Compound Annual Growth Rate
Mawmluh Cherra Cement Limited	0.10	0.34	-1.04
Jaintia Cement	1.52	7.33	-1.38
Virgo Cement	3.73	0.29	-1.02
Meghalaya Cement	0.89	8.07	-0.73
Cement Manufacturing Company Limited	0.18	4.21	-0.96
Overall	1.28	4.05	-1.28

Source: Computed from the Annual Reports of the Select Cement Companies.

The overall annual growth rate of the quick ratio is (-1.28). Virgo Cement has registered highest annual growth rate (3.73) followed by the Jaintia Cement (1.52) and the least is in Mawmluh Cherra Cement (0.10). The linear annual growth rates of the Meghalaya Cement show highest positive trend, whereas in compound growth rates all cement have registered negative values.

Inter-relationship among the Liquidity Ratios

A number of financial activities are interconnected. Therefore, the performance and efficiency of an activity may influence another.

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Liquidity ratios are interrelated and the performance of a particular liquidity ratio may influence another. Therefore, an attempt is made to find whether there is any relationship among the liquidity ratios of the select cement companies.

Table 1
Inter-Correlations among the Liquidity Ratios

Companies	Ratios	Current Ratio	Quick Ratio	Super Quick Ratio	Inventory to Working Capital Ratio
Mawmluh Cherra Cement	Current ratio	1.000	.344	0.408	.217
	Quick ratio		1.000	0.409	.179
	Super quick ratio			1.000	-.406
	Inventory to Working Capital Ratio				1.000
Jaintia Cement	Current ratio	1.000	-.326	-.325	.354
	Quick ratio		1.000	-0.134	.042
	Super quick ratio			1.000	.149
	Inventory to Working Capital Ratio				1.000
Virgo Cement	Current ratio	1.000	-.092	-.121	-.079
	Quick ratio		1.000	-.113	.093
	Super quick ratio			1.000	-.214
	Inventory to Working Capital Ratio				1.000
Meghalaya Cement	Current ratio	1.000	.447	0.133	.027
	Quick ratio		1.000	-.419	.610
	Super quick ratio			1.000	.203
	Inventory to Working Capital Ratio				1.000
Cement Manufacturing Company	Current ratio	1.000	0.165	0.101	.258
	Quick ratio		1.000	-0.030	.298
	Super quick ratio			1.000	.285
	Inventory to Working Capital Ratio				1.000

Source: Computed from the Annual Reports of the Select Cement Companies.

From the above table it is inferred there has been a highest positive correlation between current ratio and quick ratio in Meghalaya Cement(0.447) followed by Mawmluh Cherra Cement(-.092).There exists negative correlation among these ratios in virgo Cement(0.144). Similarly, there is a positive correlation between the quick ratio and super quick ratio in Mawmluh Cherra Cement Company (0.409).Positive correlation between quick and inventory to working capital in Meghalaya Cement (.610). The Super quick ratio is negatively correlated with the inventory to working capital in Virgo Cements (-.214).

Findings and Suggestions

On the basis of overall analysis, it is stated that the selected cement companies always tries to maintain adequate amount of net working capital in relation to current liabilities as to keep a good amount of liquidity throughout the study period.

The company must maintain a significant amount of cash & bank balance in order to meet its short-term commitments and for emergency requirements which will help the company to increase its margin of working capital and also to make adequate arrangement of credit facilities with banks so as to maintain good amount of liquidity.

Since the average current ratios of the company under study are below the standard norm of 2:1 during the whole of the study period, it may be concluded that the liquidity position of the company exist significant difference in the current ratio, quick ratio and super quick ratio and inventory to working capital ratio among the companies. However, over the years, no significant difference is found in the current ratio, quick ratio and super quick ratio. The mean of the current ratio shows that the Jaintia Cements has

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satisfactory followed by Mawmluch Cherra cement limited and Virgo Cements In quick ratio all Cement companies are not satisfied over the study period. Similarly, Mawmluh Cherra Cements and Virgo Cements have satisfactory super quick ratio. The consistency in the current and super quick ratios is found to be high in Mawmluh Cherra Cements. The variation is high in the quick ratio of Virgo Cement. There is positive correlation between quick ratio and super quick ratio in Mawmluh Cherra Cements. The Company should try to maintain adequate amount of current assets to meet its short-term maturing obligations. The cash ratio of company deteriorated continuously during the study period and was unable to reach the standard ratio of 1:2 in any financial year except the year 2006-07 & 2011-12.

An attempt has been made to measure the short term liquidity position of the select cement companies. However, there was positive correlation among liquidity ratio. So, management should try to establish optimum level of liquidity.

Conclusion

On the basis of overall analysis, it is stated that the company always tries to maintain adequate amount of net working capital in relation to current liabilities as to keep a good amount of liquidity throughout the study period. The company must maintain a significant amount of cash & bank balance in order to meet its short-term commitments and for emergency requirements which will help the company to increase its margin of working capital and also to make adequate arrangement of credit facilities with banks so as to maintain good amount of liquidity. Since the average current ratios of the company under study are below the standard norm of 2:1 during the whole of the study period, it may be concluded that the liquidity position of the company was unsatisfactory and therefore, the company should try to maintain adequate amount of current assets to meet its short-term maturing obligations. The cash ratio of company deteriorated continuously during the study period and was unable to reach the standard ratio of 1:2 in any financial year except the year 2006-07 & 2011-12. The level of liquidity was found unsatisfactory, so, it is must require to the company to maintain adequate level of cash. So, management should focus on its collection policy. Liquidity position of the company is best in the year 2006-07 and the second position in 2011-12 followed by the years 2007-08, 2008-09, and 2009-10 respectively. The liquidity position has been remained critical in the year 2009-10. There was high variation in various current assets. However, there was positive correlation among liquidity ratio. So, management should try to establish optimum level of liquidity.

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