**International Journal of Economics, Commerce and Management**
United Kingdom Vol. I, Issue 1, 2013

*http://ijecm.co.uk/* ISSN 2348 0386

# A STUDY ON LIQUIDITY AND PROFITABILITY OF SELECTED INDIAN CEMENT COMPANIES: A REGRESSION MODELING APPROACH

**Sandhar, Simranjeet Kaur**
Indore Institute of Science & Technology, India
*sandhar_simranjeet@yahoo.co.in*

**Janglani, Silky**
Acropolis Faculty of Management & Research, India
*janglanisilky@gmail.com*

**Abstract**

*Purpose of the study was to analyze the working capital management in terms of profitability and liquidity. In business cash is important thing, without cash company cannot survive and to take advantage of business opportunities, it's necessary to maintain liquidity position to overcome the difficulties. The Population of the study was all the companies listed in the NSE. The data is used on the basis of profitability random sampling. Secondary data was used from the journals and internet. The data was analyzed through the regression analysis to find out the impact of liquidity on profitability, Correlation analysis was used to find out the relationship between liquidity with profitability. The empirical investigation using both the partial correlation and regression analysis revealed that liquidity ratios measure by current ratio (CR), Liquid ratio (LR) and Cash Turnover Ratio, CATAR, CLTAR have a diminutive relationship with profitability measured by return on capital employed (ROA and ROI). It also revealed that CR and LR are negatively associated with ROA and ROI, while Cash Turnover Ratio (CTR) is negatively associated with ROI and ROA. It is worthy to mention here that the inverse direction reveals with respect to CR and LR with profitability ratios ROA and ROI is very informative of the fact as it proves the theoretical foundation (liquidity- profitability trade off theory) which posts that profitability and liquidity are inversely related or that there must always be a trade-off between profitability and liquidity.*

*Keywords: Liquidity ratios, Profitability, Working Capital Management*

## INTRODUCTION

### Working Capital Management Concepts

Working capital management is one of the most important areas while making the liquidity and profitability comparisons among firms (Eljelly, 2004), involving the decision of the amount and composition of current assets and the financing of these assets. The greater the relative proportion of liquid assets, the lesser the risk of running out of cash, all other things being equal. All individual components of working capital including cash, marketable securities, account receivables and inventory management play a vital role in the performance of any firm. Shin and Soenen, (1998) argued that efficient working capital management is very important to create value for the shareholders while Smith (1997) emphasized that profitability and liquidity are the salient goals of working capital management. The need to balance working capital position of the business enterprise in order to maintain adequate liquidity, minimize risks and raise profitability, at all times, and more especially in periods of intense financial crises as it exists at the global level today. An enlightened top management should therefore, maintain the right proportion of working capital on a continuous basis. Only then a proper functioning of business operations will be ensured. Sound financial and statistical techniques, supported by judgment, should be used to predict the quantum of working capital needed at different time periods (Pandey, 2000). The effective working capital management is very important because it affects the performance and liquidity of the firms (Taleb et al., 2010). The main objective of working capital management is to reach optimal balance between working capital management components (Gill, 2011). The efficient management of working capital is a fundamental part of the overall corporate strategy to create shareholders‟ value (Nazir and Afza, 2008). Therefore firms try to keep an optimal level of working capital that maximizes their value (Deloof, 2003). Working capital management indicates how much a company shall continue its existence if operations are aborted. Moreover, it gives indications of the time period elapsed between the points of inventory purchase to the point of collection of sales amounts. Retention of inventories at a desirable level and setting credit policies by providers of materials and granting credit to customers significantly affects company profitability (Lazaridis and Tryfonidis, 2006). There are different approaches for the management of working capital. Two basic policies of working capital management are namely aggressive working capital management policy and conservative working capital management policy. An aggressive investment policy with high levels of fixed assets and low investment in current assets may generate more profits for a firm. On the other hand it also accompanies a risk of insufficient funds for daily operations and for payment of short term debts. A conservative investment policy is opposite to it with less investment in fixed assets and more in current assets. For financing of working capital aggressive policy implies that current liabilities are maintained in a greater portion as compared

to long-term debts. High level of current liabilities requires more resources to be in liquid form to pay back debts earlier. But current payouts bear less rate of interest and hence can cause more savings. In conservative working capital financing policy a greater portion of long-term debts is used in contrast to current liabilities. WCM could be permanent or temporary; former is the amount of current assets company must possess for longer period of time to offset its current liabilities while later is the excess of current assets to meet seasonal current liabilities. Working capital management is probably one of the most basic and least studied topics in corporate finance. It should involve the analysis of the investments in operating assets and its corresponding financing. Moreover, framing working capital practices within the financing of operating investment helps to understand its key drivers, and to differentiate them -and their relative importance- from the key factors that shape the operating investment of a firm. Working capital management is a significant facet of financial management. Its importance Stems from two reasons -

First is Investment in current assets represents a substantial portion of total investment. Cash is the lifeblood of business and needs to be managed very carefully as it become the source of income if invested properly in marketable securities. Investment in current assets and the level of current liabilities have to be geared quickly to changes in sales. And, second is Fixed assets investment and long-term financing are also related to variation in sales. However, this relationship is not as close and direct as it is in the case of working capital components. When firms make investment decisions, they must not only consider the financial outlay involved with acquiring the new machine or the new building, etc., but must also take account of the additional current assets that are usually involved with any expansion of activity.

Working capital approved the company's ability to continue its activities without endangering liquidity. Working capital management is very important due to its affect on risk and profitability of company and thus the value of the company. Working capital management can be accessed in several ways. from its main components (in this study) can be noted to cash conversion cycle (inventory management, accounts payable and accounts receivable management), current assets to current liabilities ratio (current ratio), current assets to total assets ratio, Current liabilities to total assets ratio and total debts to total assets ratio. Most research in finance affairs of companies usually is in relation to long-term financing decisions and dividend policy. But short-term financial decisions in developing a financial strategy in companies are not less important that among short term Strategies, working capital management has a vital role in increasing shareholder value of a company and the balance between two purpose of a company that is profitability and liquidity. Effective management of working capital consists of two steps which are planning for resources and controlling them.

Both of these are required to facilitate the firm in meeting its short term obligations and also to let the firm avoid wastage of resources by over investment in current assets (Eljelly, 2004). Effective management of working capital decreases the need for lending funds to pay back the short term debts of the firm. There are different approaches for the management of working capital. Two basic policies of working capital management are namely aggressive working capital management policy and conservative working capital management policy. An aggressive investment policy with high levels of fixed assets and low investment in current assets may generate more profits for a firm. On the other hand it also accompanies a risk of insufficient funds for daily operations and for payment of short term debts. A conservative investment policy is opposite to it with less investment in fixed assets and more in current assets. For financing of working capital aggressive policy implies that current liabilities are maintained in a greater portion as compared to long-term debts. High level of current liabilities requires more resources to be in liquid form to pay back debts earlier.

**Liquidity**

The concern of business owners and managers all over the world is to devise a strategy of managing their day to day operations in order to meet their obligations as they fall due and increase profitability and shareholder's wealth. Liquidity management, in most cases, are considered from the perspective of working capital management as most of the indices used for measuring corporate liquidity are a function of the components of working capital.

The importance of liquidity management as it affects corporate profitability in today's business cannot be over emphasis. The crucial part in managing working capital is required in maintaining its liquidity in day-to-day operation to ensure its smooth running and meets its obligation. A firm should ensure that it does not suffer from lack-of or excess liquidity to meet its short-term compulsions. A study of liquidity is of major importance to both the internal and the external analysts because of its close relationship with day-to-day operations of a business. Liquidity requirement of a firm depends on the peculiar nature of the firm and there is no specific rule on determining the optimal level of liquidity that a firm can maintain in order to ensure positive impact on its profitability.

Liquidity and its management determines to a great extent the growth and profitability of a firm. This is because either inadequate liquidity or excess liquidity may be injurious to the smooth operations of the organization. This seeming controversy has attracted a lot of interest in the subject of liquidity management. WCM technique appears with the philosophy of using long term source should be used for the entire investment in the current assets and short term should be used only for urgent situations. Distinct features of conservative WCM are increased liquidity and less risk but more interest has to be paid on the seasonal requirement for the entire

period. Larger firm focus on higher sales with fewer on cash basis which leads to greater cash flow problems and seasonality while smaller firms major focus is stock management and credit management policies with low profitability.

**Profitability**

Every business is most concerned with its profitability. Profitability is the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. One of the most frequently used tools of financial ratio analysis is profitability ratios, which are used to determine the company's bottom line. Profitability ratios show a company's overall efficiency and performance. Profitability and management efficiency are usually taken to be positively associated: poor current profitability may threaten current management efficiency and vice versa; poor management efficiency may threaten profitability. It is related to the goal of shareholders' wealth maximization, and investment in current assets is made only if an acceptable return is obtained. While liquidity is needed for a company to continue business, a company may choose to hold more cash than needed for operational or transactional needs i.e. for precautionary or speculative reasons. It can also be termed as the rate of return on investment. If there will be an unjustifiable over investment in current assets then this would negatively affect the rate of return on investment (vishnani & shah, 2007). The basic purpose of managing working capital is controlling of current financial resources of a firm in such a way that a balance is created between profitability of the firm and risk associated with that profitability (ricci & vito, 2000). Profitability is a widely used financial measure of performance. The concept of profitability may be used in two senses: commercial/private profitability and public profitability. Although the use of public profitability which is based on economist's notion of cost and benefits, i.e., the true opportunity cost and the benefits for the society as a whole, appears to be a more appropriate measure of performance of public enterprises, the measure of commercial profitability has been used in this study. This is because of the fact that commercial profitability is widely used to measure the performance of public enterprises in Bangladesh and even in other countries of the world like India, the UK, France etc. And also for its general acceptance and ready understandability. Two major types of profitability ratios are computed: (i) profitability in relation to sales and (ii) profitability in relation to investment. Gross profit margins (gpm), net operating margin (nom), return on total assets (Rota), return on equity (roe), and return on investment (roi) are the main measures of profitability. Therefore, profit is an absolute measure and profitability is a relative measure of efficiency of the operations of an enterprise.

**Measures of corporate profitability**

A company should earn profit to survive and grow over a long period of time. Profits are essential, but all management decision should not be profit centered at the expense of the concerns for customers, employees, suppliers or social consequences. Profit is the difference between revenues and expenses over a period of time (usually one year). Profit is the ultimate 'output' of a company, and it will have no future if it fails to make sufficient profits. The profitability ratios are calculated to measure the operating efficiency of the company. Some the profitability ratios include the following:

***Return on investment (ROI)***

The term investment may refer to total assets or net assets. The funds employed in net assets in is known as capital employed. Net assets equal net fixed assets plus current assets minus current liabilities excluding bank loan. The conventional approach of calculating return on investment is to divide profit after tax (pat) by investment. Investment refers to pool of funds supplied by shareholders and lenders, while pat represent residue income of shareholders.

***Return on Equity (ROE)***

Common or ordinary shareholders are entitled to the residue profits. The rate of dividend is not fixed; the earnings may be distributed to shareholders or retained in the business. Nevertheless, the net profit after tax represents their return. A return on shareholder's equity is calculated to see the profitability of owners' investment. The shareholders' equity or net worth will include paid up share capital, share premium and reserves and surplus less accumulated losses. Net worth can also be found by subtracting total liabilities from the total assets. The ROI is net profit after taxes divided by shareholders' equity which is given by net worth.

ROE = PROFIT AFTER TAXES $\big/$ NET WORTH (EQUITY)

***Return on Asset (ROA)***

Return on Assets expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income. ROA measures management's ability to earn a return on the firm's resources (assets). The income amount used in this computation is income before the deduction of interest expense, since interest is the return to creditors for the resources that they provide t the firm. The resulting adjusted income amount is thereby the income before any distribution to those who provided funds to the company. ROA is computed by dividing net income plus interest expense by the company's average investment in asset during the year.

ROA = NET INCOME AFTER TAX + INTEREST EXPENSES ⁄AVERAGE TOTAL ASSE DURING THE PERIOD

**RATIONALE OF THE STUDY**

The purpose of the study is to analyze the working capital management in terms of profitability and liquidity. In business cash is important thing, without cash company cannot survive and to take advantage of business opportunities, it's necessary to maintain liquidity position to overcome the difficulties. The working capital management plays an important role for successor failure of firm because of its effect on firm's profitability as well on liquidity. This study is going to find out the impact of Liquidity, Profitability and Working capital on the firm's financial aspects.

**OBJECTIVES OF THE STUDY**

1. To measure the closeness of association between liquidity and profitability.
2. To find out the relationship between liquidity and profitability ratio.
3. To find out the impact of liquidity on profitability.

**LITERATURE REVIEW**

Dong (2010) reported that the firms' profitability and liquidity are affected by working capital management in his analysis. Pooled data are selected for carrying out the research for the era of 2006-2008 for assessing the companies listed in stock market of Vietnam. He focused on the variables that include profitability, conversion cycle and its related elements and the relationship that exists between them. From his research it was found that the relationships among these variables are strongly negative. This denote that decrease in the profitability occur due to increase in cash conversion cycle. It is also found that if the number of days of account receivable and inventories are diminished then the profitability will increase numbers of days of accounts receivable and inventories.

Saswata Chatterjee (2010) focused on the importance of the fixed and current assets in the successful running of any organization. It poses direct impacts on the profitability liquidity. There have been a phenomenon observed in the business that most of the companies increase the margin for the profits and losses because this act shrinks the size of working capital relative to sales. But if the companies want to increase or improve its liquidity, then it has to increase its working capital. In the response of this policy the organization has to lower down its sales and hence the profitability will be affected due to this action. For this purpose 30 United Kingdom based companies were selected which were listed in the London Stock exchange. The data

were taken of three years 2006-2008. It analyzed the impact of the working capital on the profitability. The dimensions of working capital Management included in this research which is quick ratios, current ratios C.C.C, average days of payment, Inventory turnover, and A.C.P (average collection period. on the net operating profitability of the UK companies.

Deloof (2003) analyzed a sample of Belgian firms, and Wang (2002) analyzed a sample of Japanese and Taiwanese firms, emphasized that the way the working capital is managed has a significant impact on the profitability of firms and increase in profitability by reducing number of day's accounts receivable and reducing inventories. A shorter Cash Conversion Cycle and net trade cycle is related to better performance of the firms. Furthermore, efficient working capital management is very important to create value for the shareholders.

Shin Soenen (1998) analyzed a sample of US firms also reported similar findings but have used Net Trading Cycle (NTC) as comprehensive measure of working capital management and found significant negative relationship between NTC and profitability. However, this relationship was not found to be very significant when the analysis was for specific industry (Soenen, 1993).

Afza and Nazir (2007) investigated the relationship between aggressive and conservative working capital policies for a large sample of 205 firms in 17 sectors listed on Karachi Stock Exchange during 1998-2005. They found a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies.

Soenen (1993) investigated the relationship between the net trade cycle as a measure of working capital and return on investment in the USA firms. The results of chi-square test indicated a negative relationship between the length of net trade cycle and return on assets. Furthermore, this inverse relationship was found different, across industries depending on the type of industry. A significant relationship for about half of the industries studied indicated that results might vary from industry to industry.

Lamberson (1995) studied how small firms respond to changes in economic activities by changing their working capital requirements and level of current assets and liabilities. Current ratio, current assets to total assets ratio and inventory to total assets ratio were used as a measure of working capital requirement, while the index of annual average coincident economic indicator was used as a measure of economic activity. Contrary to the expectations, the study found that there is a very small relationship between changes in economic conditions and changes in working capital.

Garcia-Teruel and Martinez-Salano, (2004) investigated the effect of WCM on profitability using a sample of 8872 small and medium size Spanish firms and found that a shorter Cash Conversion Cycle can improve the firm's profitability.

Mahmood and Qayyum, (2010) pointed out that to increase profitability of a company and ensuring sufficient liquidity to meet short term obligations as they fall due are two main objectives of working capital management. Profitability is related to the goal of shareholders' wealth maximization, and investment in current assets is made only if an acceptable return is obtained. While liquidity is needed for a company to continue business, a company may choose to hold more cash than needed for operational or transactional needs i.e. for precautionary or speculative reasons.

Odi and Solomon, (2010) decisions relating to working capital and short term financing are referred to as working capital management. These involve managing the relationship between a firm's short term assets and its short term liabilities. The goal of working capital is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short term debt and forthcoming operational expenses. An important working capital decision is associated with the level of investment in current assets. Determining the most favorable level of investment in current assets involves an exchange between costs that increase with current assets and costs that go down with current assets.

Eljelly (2004) examined the relation between profitability and liquidity by using Correlation and regression analyses and found that the cash conversion cycle was of more Importance as a measure of liquidity than the current ratio that affects profitability.

Raheman (2007) studied the effect of different variables of working capital management Including the Average Collection Period, Inventory Turnover in Days, Average Payable Period, Cash Conversion Cycle and Current Ratio on the Net Operating Profitability of Pakistani Firms. By using Pearson's correlation and regression analysis he found that there was a strong negative relationship between variables of Working Capital Management and Profitability. He also finds that as the cash conversion cycle increases, it leads to decrease in profitability of the firm and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level.

Islam & Rahman (1994) conducted a study on working capital trends of enterprises in Bangladesh. They find that optimum working capital enables a business to have its credit Standing and permits the debts payments on maturity date and helps to keep itself fairly in liquid Position which enables the business to attract borrowing from the banks.

Garcia-Teruel& Martinez-Salano, (2004) investigated the effect of WCM on profitability using a sample of 8872 small and medium size Spanish firms and found that a shorter Cash Conversion Cycle can improve the firm's profitability.

Nunn (1981) uses the PIMS database to examine why some product lines have low working capital requirements, while other product lines have high working capital requirements. In

addition, Nunn is interested in “permanent” rather than temporary working capital investment as he uses data averaged over four years. Using factor analysis, he identifies factors associated with the production, sales, competitive position, and industry.

Czyzewski and Hicks (1992) also concluded that firms with the highest return on assets hold higher cash balances but they did not consider liquidity management beyond static cash and assets ratio.

Horne and Wachowicz, (2000) Working capital is an important tool for growth and profitability for corporations. If the levels of working capital are not enough, it could lead to shortages and problems with the day-to-day operations.

Lazaridis and Tryfonidis (2006) investigated the relationship of corporate profitability and working capital management for firms listed at Athens Stock Exchange. They reported that there is statistically significant relationship between profitability measured by gross operating profit and the Cash Conversion Cycle. Furthermore, Managers can create profit by correctly handling the individual components of working capital to an optimal level.

Shah and Sana (2006) used Avery small sample of 7 oil and gas sector firms to investigate this relationship for period 2001-2005.The results suggested that managers can generate positive return for the shareholders by effectively managing working capita.

Ganesan (2007) selected telecommunication equipment industry to study the effectiveness of working capital management. The sample included for his research paper included 443annual financial statements of 349telecommunication equipment companies covering the period 2001 to 2007. The statistical tests used included correlation, regression analyses and Analysis of variance (ANOVA). The results showed that days of the working capital negatively affects the profitability of these firms but in reality it does not affect the transportability of firms in telecommunication equipment industry.

Sen. M (2009) examined the ISE (Istanbul Stock Exchange) listed firms and checked out the relationship with the working capital. According to them there is negative relationship among variables. His research uncovered the importance of the finance directors who act as moderators or catalysts to increase the productivity of the firm in other words they positively affect the firm’s performance.

Mahavidyalaya (2010) attempted to provide an insight into the conceptual side of working capital and to assess the impact of working capital management on liquidity, profitability and non-insurable risk of ONGC, a leading public sector enterprise in India over a 9 year period (i.e. from 1998-99 to 2006-07).

Sharma and Kumar (2011) argued that the positive relation they found between accounts receivables and profitability is caused by the fact that Indian firms have to grant more trade

credit to sustain their competitiveness with their foreign competitors, which have superior product and services.

Bagchi and Bhasker (2012) explored the effects of components of working capital management like cash conversion cycle (CCC), age of inventory (AI), age of debtors (AD), age of creditors (AC), debt to total assets (DTA) and debt equity ratio (DER) on profitability of FMCG firms. The profitability of firms is measured in terms of return on total assets (ROTA) and return on investment (ROI). Working capital management is considered to be a vital issue in financial management decision and it affects both liquidity and profitability of the firm.

Smith (1980) conducted a study on Profitability and Liquidity and suggested that working capital management directly influence risk and profitability of a firm. Hence it can be inferred that effective working capital management can increase the financial strength of a business.

Danuletiu (2010) conducted an analysis on 20 companies of Alba country. He assessed the effect of working capital management efficiency on the financial performance of these companies for a period of five years i.e. 2004 to 2008. For his analysis he used net working capital (NWC) as a measure of long-term financial balance, working capital necessary (WCN) as a measure of short-term financial balance and net treasury (NT) a difference of both NWC and WCN. Return on Assets (ROA), Return on Sales (RS) and Return on equity (ROE) were used to measure the profitability. To find the results, Pearson correlation analysis was used. The study concluded that profitability has an inverse relationship with working capital management components.

Gill, Biger, and Mathur (2010) studied 88 companies of Network. The time span of the study was 3 years i.e. 2005 to 2007. To elaborate the relationship of profitability with working capital management, they took Accounts receivables, Accounts payables, Cash conversion cycle, Inventory, natural log of sales as a proxy of size of the firm, fixed assets ratio and debt ratio as independent variables while dependent variable was Gross Operating Profit. The regression analysis was used to find out the results. They stated that if the collection period of accounts receivable is greater, then there would be less profitability. So, they suggested that managers should try to reduce the credit period in order to improve the profitability. They also recommended that cash conversion cycle is positively related with financial performance.

Scherr (1989) analyzed that by implementing best practices in WC, companies can strengthen strong cash Flow levels, improve profitability, budgeting and forecasting process, predictability and manageability of Results, heighten risk visibility and reduce reaction time.

Fishazion (2002) found that both human and financial resources of the firms in developing economies are also very limited to manage WC investments and short-term debt. Proper WCM is particularly important for the firms in developing countries in order to solve these problems.

Filbeck and Krueger (2005) highlighted the importance of efficient working capital management by analyzing the working capital management policies of 32 non-financial industries in the United States of America (USA). According to their findings, significant differences exist among industries in working capital practices overtime. Moreover, these working capital practices, themselves, change significantly within industries.

Jain and Praveen Kumar (2006) viewed that working capital management practices assume vital importance in the smooth day-to-day functioning of business firms. While excess working capital can have an adverse impact on profitability, inadequate working capital can hold up production or sales operations of well managed business firms. Good working capital management is more crucial now than ever before in view of turbulence in the current business environment where competition is stiff and profit margins are low.

Banos-Caballero [2011] analyzes the relationship between working capital management and profitability for small and medium-sized enterprises (SMSE) by controlling for unobservable heterogeneity and possible endogeneity. Unlike previous studies, they have examined a non-linear relation between these two variables. Their results show that there is a non-monotonic (concave) relationship between working capital level and firm profitability, which indicates that SMSE have an optimal working capital level that maximizes their profitability. In addition, a robustness check of results confirms that firms' profitability decreases as they move away from their optimal level.

Sushma Vishnani and Bhupesh Kr. Shah made a pragmatic analysis of Indian Consumer Electronics Industry to determine the impact of working capital policies & practices on profitability for the period 1994–95 to 2004–05. They found a negative relationship between the determinants of WCM and profitability for most of the companies in their sample. The same results were also confirmed in their industry-wide analyses.

Christopher and Kamalavalli investigated the influence of the management of working capital on the profitability of Indian Corporate Hospitals by taking a sample of 14 out of the fifty one listed corporate hospitals in India using panel data analysis for the period 1996-97 to 2005-06. The results of their analysis depicted that Inventory Turnover ratio, Debtors Turnover ratio and Working Capital Turnover were positively related with the Return on Investment, a variable used for the measurement of a firm‘s profitability.

Gupta (1969) and Gupta and Huefner (1972) examined the differences in financial ratio averages among industries. The conclusion of both the studies was that differences do exist in mean profitability, activity, leverage and liquidity ratios among industry groups.

Binti Mohammad and Binti mohd saad (2010) reviewed the impact of working capital management on profitability and evaluation of companies listed on the Malaysia Stock Exchange during 2003 to 2009. In this study, 172 companies were selected as samples. The

results suggest that there is a negative and significant relationship between variables of working capital with market value and profitability of company, and stated that Malaysian companies for maximizing profits are correlated to current assets.

Mohammadi (2009) in their study investigated the impact of working capital management on profitability of listed companies in Tehran stock exchange between the years 1996-2005 in 92 companies as the sample. Research results suggest that there is a significant inverse relationship between the profitability of the companies and cash conversion cycle and its components (inventory turnover period, receivables collection period and creditors' settlement period). It also states that companies that are profitable, have shorter term creditors' settlement period.

Gill (2010) surveyed the relationship between working capital management and profitability for the 88 U.S. companies listed on the New York Stock Exchange during the years 2005 to 2007. The results suggest that statistically there is a significant relationship between the cash conversion cycle (evaluation criterion of working capital management) and gross operating profit (a measure of profitability in companies), and management can also make profits for companies by using from the cash conversion cycle and the maintenance of accounts receivable in appropriate level.

Rezazadeh and Heydarian(2010) in their study examined the impact of working capital management on profitability of Iranian companies. In this study, they investigated the 1365 year-company of observed number among the companies listed in Tehran Stock Exchange during the years 1998-2007.

Izadinia and Taki (2010) investigated the impact of working capital management on profitability potential companies listed in Tehran Stock Exchange during the period 2001-2008. In this study, the dependent variable, return on total assets considered as a criterion of measure for profitability potential. The results showed that there is a significant negative relationship between the cash conversion cycle with return on assets. Also, they expressed that high investment in inventory and accounts receivable will lead to lower profitability of companies.

## RESEARCH METHODOLOGY

The study is descriptive in nature and reveals an existing fact. The Population of the study is all the companies listed in the NSE. The data is used on the basis of profitability random sampling. Secondary data is used from the books, journals and internet. The data is analyzed through the regression analysis to find out the impact of liquidity on profitability, Correlation analysis is used to find out the relationship between liquidity with profitability. The following liquidity and profitability ratios are used for analysis:

Liquidity Ratios:

1. Current ratio
2. Liquid ratio
3. Cash turnover ratio
4. Inventory turnover ratio
5. Current asset total asset ratio
6. Current liabilities total asset ratio

Profitability ratio:

1. Debt equity ratio
2. Return on investment
3. Return on assets

## FINDINGS AND DISCUSSIONS

### Descriptive Analysis

The descriptive statistics (Table 6.1) depicts the mean, range, minimum, maximum and standard deviation of all the variables under consideration. The table indicates that the sample cement companies in India generate a mean return on investment (ROI) of about 19.4% with a minimum of 1.92% and maximum of 39.49%.

The analysis also reveals that the mean values of current ratio (0.95) and liquid ratio (0.70) are below the standard conventional rule of 2:1 and 1:1 respectively. This indicates that on an average the cement companies in India may find it difficult to meet their short term maturing obligations. However, with the maximum of 1.67 for the CR is close to 2 and 1.23 for the LR respectively show that some of the companies are doing very well liquidity wise, as they are not likely to encounter any difficulty in meeting their short term obligations.

Table 1 Descriptive Analysis

| | N Statistics | Mean Statistics | Min. Statistics | Max. Statistics | S.Dev. Statistics | Kurtosis Statistics |
|---|---|---|---|---|---|---|
| C.R. | 30 | 0.946 | 0.58 | 1.67 | 0.252472 | 0.722384 |
| L.R | 30 | 0.704667 | 0.32 | 1.23 | 0.243477 | 0.80972 |
| CASH.T.R | 30 | 181.9167 | 4.31 | 1459.5 | 360.7112 | 9.103359 |
| INV.T.R. | 30 | 19.735 | 6.22 | 36.95 | 8.514176 | 0.99888 |
| DEBT.E.R | 30 | 0.412667 | 0.01 | 1.21 | 0.342314 | 0.28616 |
| CATAR | 30 | 0.062667 | -0.19 | 0.39 | 0.150331 | -0.84474 |
| CLTAR | 30 | 0.554 | 0.14 | 1.82 | 0.443385 | 1.105889 |
| ROI | 30 | 19.40567 | 1.92 | 39.49 | 8.991383 | 0.058864 |
| ROA | 30 | 207.5423 | 37.22 | 469.22 | 120.2012 | 0.79325 |

### Correlation Analysis

Correlation analysis was used to determine the strength and direction of the linear relationship between the variables under consideration (Table 6.2). The results indicate that all the predictor variables namely: current ratio (CR), liquid ratio (LR), cash turnover ratio (CTR),debt equity ratio (DER), current liabilities to total assets ratio (CLTAR), current assets to total asset ratio

(CATAR) are negatively related with profitability measured by return on Investment (ROI) and Return on Asset (ROA). The correlation coefficients of CR and LR with ROA and ROI is -.458, -.656 and -.229, -.350 respectively of which the correlation of CR are found to be statistically significant at 5% level with ROA and ROI and the correlation coefficient of LR are found to be statistically significant at 1% with ROA. The CR and LR being negatively related with the profitability ratios proves our theoretical foundation (liquidity- profitability trade off theory) which posts that profitability and liquidity are inversely related or that there must always be a trade-off between profitability and liquidity. It is evident from these two ratios that the higher the company's margin of safety to the short-term creditors, the lower is the profitability of the company (Nandi, 2011). Specifically, the result shows that inventory turnover ratio (ITR) is positively related with return on investment (ROI) and return on assets (ROA). The correlation between ITR and profitability (ROA and ROI) is positive (0.137 and .276) which is found to be insignificant both at 1% and 5% levels. The computed value of correlation coefficient between ROA/ROI and ITR under study conforms to the accepted principle that the higher the ITR, the greater is the efficiency of inventory management and the larger is the scope of profitability.

The relationship of Cash turnover ratio (CTR) with Profitability ratios ROA and ROI is also negative and is insignificant as exemplified in the P-value of 0.324 and .076 respectively. The implication being that ROA and ROI are inversely related with CTR. The more acceptable principle is that higher the CTR, the more will be the efficiency of cash management and the larger will be the scope of improving profitability. The study of correlation coefficients between ROA and ROI with CTR reveals that the computed value of correlation coefficient does not conform to this acceptable principle. The correlation coefficient of DER with ROI and ROA is - .215, -0.45 which is found to be negative and insignificant relationship.

The correlation coefficient of current assets total asset ratio (CATAR) and current liabilities total asset ratio (CLTAR) with ROI and ROA is-.322,-.350 and -.786,-.304 negative and insignificant at 5% significance level.

Table 2 Correlation Matrix

| | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| CR pearson correlation | 1 | .642** | .027 | -.160 | .122 | .666** | .136 | -.229* | -.458* |
| Sig. (2 Tailed) | | .000 | .887 | .399 | .519 | .000 | .474 | .054 | .011 |
| LR Pearson correlation | .642** | 1 | .454* | .015 | .363* | .771 | .672** | -.350* | -.656** |
| Sig.(2 tailed) | .000 | | .012 | .938 | .048 | .000 | .000 | .058 | .000 |
| CTR Pearson correlation | .027 | .454* | .1 | .016 | .256 | .252 | .624** | -.329 | -.194 |
| Sig.(2 tailed) | .887 | .012 | | .934 | .172 | .179 | .000 | .076 | .324 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ITR Pearson correlation | .160 | .015 | -.016 | 1 | .466** | -.230 | .332 | .276 | .137 |
| Sig.(2 tailed) | .399 | .938 | .934 | | .009 | .221 | .073 | .140 | .469 |
| DER Pearson correlation | .122 | .363* | .256 | .456** | 1 | .212 | .708** | -.215 | -0.45 |
| Sig.(2 tailed) | .519 | .048 | .172 | .009 | | .261 | .000 | .253 | .813 |
| CATAR Pearson correlation | .666** | .771** | -.252 | -.230 | .212 | 1 | .334 | -.322 | -.786** |
| Sig.(2 tailed) | .000 | .000 | .119 | .221 | .216 | | .071 | .083 | .000 |
| CLTAR Pearson correlation | .136 | .672** | .624** | .332 | .708** | .334 | 1 | -.350 | -.304 |
| Sig.(2 tailed) | .474 | .000 | .000 | .073 | .000 | .071 | 30 | .058 | .102 |
| ROI Pearson correlation | -.229 | -.350 | -.329 | .276 | -.215 | -.322 | .0350 | 1 | .008 |
| Sig.(2 tailed) | .224 | .058 | -.076 | .140 | .253 | .83 | .058 | | .965 |
| ROA Pearson correlation | -458* | -.656* | -.194 | .137 | .045 | -.786** | -.304 | .008 | 1 |
| Sig.(2 tailed) | .011 | .000 | .304 | .469 | .813 | .000 | .102 | .965 | |

*N= 30, **Correlation is significant at the 0.05 level (2 tailed), *Correlation is significant at the 0.01 level*

**Analysis of Ratios**

*Refer Table # 3 to 8*

*Interpretation of Current ratio*: The current ratio of ACC cement, Ultratech cement is less than the other companies (Ambuja, India Cement, Jk, and Birla). A relatively low current ratio of represents that the liquidity position of these firms is not good and these firms shall not be able to pay current liabilities in time without facing difficulties. And a relatively increase the ratio (Ambuja, India Cement, Jk, Birla) represent the improvement in the liquidity position of a firm.

*Interpretation of Liquid Ratio*: The liquid ratio of (Acc, Ambuja, Ultratech, JK,and Birla cement) is less than the (India cement).A low quick ratio(Acc,Ambuja,Ultratech,JK,and Birla cement) does not necessarily mean a bad liquidity position as inventories are not absolutely non liquid. Hence a firm having high liquid ratio (India cement) may not have a satisfactory liquidity position if it has slow paying debtors.

*Interpretation of Inventory Turnover Ratio*: Inventory turnover ratio measures the velocity of conversion of stock into sales. The inventory turnover ratio of (Ambuja) is less than the (Acc, Ultretech, India, Birla, and Jk). A high inventory turnover ratio (Acc, Ultretech, India, Birla, and Jk) indicates efficient management of inventory because more frequently the stocks are sold; the lesser amount of money is required to finance the inventory. A low inventory turnover ratio (Ambuja) indicates an inefficient management of inventory.

*Interpretation of Cash Turnover Ratio*: Cash turnover ratio of (Acc, Ambuja, Ultratech, India, JK, and Birla cement) is increases. A cash ratio of 1.00 and above means that the companies will be able to pay all its current liabilities in immediate short term. Therefore, creditors usually prefer high cash ratio. But companies usually do not plan to keep their cash and cash equivalent at level with their current liabilities because they can use a portion of idle cash to generate profits. This means that a normal value of cash ratio is somewhere below 1.00.

*Interpretation of Debt Equity Ratio*: Debt equity ratio of (Acc, Ambuja, Ultratech, India, JK, and Birla cement) is increases. Higher debt-to-equity ratio is unfavorable because it means that the business relies more on external lenders thus it is at higher risk, especially at higher interest rates. Lower values of debt-to-equity ratio are favorable indicating less risk.

*Interpretation of Current Asset Total Asset Ratio*: A lower turnover ratio (Acc, Ultratech, cement) tells that the company is not using its assets optimally.

*Interpretation of Current Liabilities Total Asset Ratio*: Current Liabilities Total Asset Ratio ranges from 0.00 to 1.00. A lower Current Liabilities Total Assets (Acc, Ambuja, Ultratech, JK, and Birla cement) is favorable and a higher value(India, cement) indicates that higher portion of company's assets are claimed by it creditors which means higher risk in operation since the business would find it difficult to obtain loans for new project.

*Interpretation of Return on Investment Ratio*: Return on Investment Ratio (ROI) of (Acc, Ambuja, Ultratech, India, Jk, and Birla Cement) a high ROI can either mean that management is doing a good job, or that the firm is undercapitalized. It can indicate poor management performance or a highly conservative business approach.

*Interpretation of Return on Asset Ratio*: Return on Asset Ratio (ROA) of (Acc, Ultratech, India cement, Jk, And Birla Cement) higher values of return on assets show that business is more profitable. This ratio should be only used to compare companies in the same industry. Their ROA will naturally be lower than the ROA of (Ambuja) companies which are low asset-insensitive.

Table 3 Ratio relating to liquidity management and profitability ratio of ACC

| Year | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.89 | 0.61 | 82.56 | 27.51 | 0.1 | -0.06 | 0.41 | 22.79 | 256.98 |
| 2009 | 0.67 | 0.42 | 83.87 | 25.22 | 0.10 | -0.18 | 0.38 | 26.64 | 312.61 |
| 2010 | 0.68 | 0.43 | 80.53 | 19.04 | 0.08 | -0.19 | 0.37 | 17.15 | 334.50 |
| 2011 | 0.87 | 0.58 | 84.66 | 18.59 | 0.07 | -0.07 | 0.42 | 18.63 | 371.71 |
| 2012 | 0.72 | 0.46 | 16.74 | 11.15 | 0.01 | -0.16 | 0.41 | 14.36 | 392.68 |

Table 4 Ratio relating to liquidity management and profitability ratio of AMBUJA

| Year | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 1.26 | 0.74 | 49.96 | 7.54 | 0.05 | 0.21 | 0.23 | 24.52 | 37.22 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2009 | 0.89 | 0.57 | 60.72 | 11.36 | 0.03 | 0.14 | 0.23 | 18.82 | 42.43 |
| 2010 | 1.07 | 0.75 | 37.15 | 9.19 | 0.01 | 0.16 | 0.25 | 17.24 | 47.88 |
| 2011 | 1.14 | 0.87 | 48.29 | 10.38 | 0.01 | 0.16 | 0.28 | 15.28 | 52.35 |
| 2012 | 1.21 | 0.95 | 4.31 | 11.17 | 0.01 | 0.39 | 0.24 | 14.69 | 57.05 |

Table 5 Ratio relating to liquidity management and profitability ratio of ULTRATECH

| Year | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.58 | 0.38 | 54.14 | 31.69 | 0.64 | -0.11 | 0.38 | 37.37 | 216.59 |
| 2009 | 0.60 | 0.34 | 61.11 | 22.89 | 0.59 | -0.10 | 0.32 | 37.13 | 289.22 |
| 2010 | 0.68 | 0.32 | 79.37 | 22.65 | 0.35 | -0.10 | 0.32 | 23.73 | 370.05 |
| 2011 | 0.68 | 0.38 | 91.40 | 17.69 | 0.52 | -0.09 | 0.32 | 13.16 | 389.21 |
| 2012 | 0.83 | 0.60 | 103.52 | 15.73 | 0.43 | -0.11 | 0.33 | 19.02 | 469.22 |

Table 6 Ratio relating to liquidity management and profitability ratio of INDIA

| Year | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 1.23 | 1.23 | 388.29 | 27.26 | 0.72 | 0.18 | 1.21 | 24.77 | 113.79 |
| 2009 | 0.97 | 1.01 | 621.9 | 26.39 | 0.69 | 0.13 | 1.82 | 14.64 | 124.58 |
| 2010 | 1.11 | 0.98 | 1407.2 | 26.01 | 0.67 | 0.21 | 1.09 | 10.04 | 131.69 |
| 2011 | 0.84 | 0.93 | 105.57 | 7.27 | 0.69 | 0.23 | 0.88 | 1.92 | 129.94 |
| 2012 | 0.80 | 1.07 | 1459.5 | 9.24 | 0.65 | 0.18 | 1.48 | 7.21 | 128.19 |

Table 7 Ratio relating to liquidity management and profitability ratio of BIRLA

| Year | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.73 | 0.65 | 59.60 | 20.17 | 0.23 | -0.04 | 0.35 | 39.49 | 129.41 |
| 2009 | 1.05 | 0.99 | 46.54 | 25.97 | 0.18 | 0.10 | 0.31 | 25.28 | 166.16 |
| 2010 | 0.92 | 0.93 | 102.6 | 18.28 | 0.36 | 0.11 | 0.21 | 31.24 | 231.57 |
| 2011 | 0.76 | 0.96 | 78.36 | 15.80 | 0.46 | 0.12 | 0.22 | 15.60 | 266.23 |
| 2012 | 1.67 | 1.07 | 102.07 | 6.22 | 0.50 | 0.13 | 0.20 | 10.69 | 290.34 |

Table 8 Ratio relating to liquidity management and profitability ratio of JK

| Year | CR | LR | CTR | ITR | DER | CATAR | CLTAR | ROI | ROA |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 1.32 | 0.99 | 37.68 | 21.52 | 0.59 | 0.19 | 0.22 | 34.87 | 129.53 |
| 2009 | 0.97 | 0.81 | 26.21 | 31.63 | 1.14 | 0.26 | 0.24 | 15.71 | 155.28 |
| 2010 | 0.95 | 0.71 | 17.59 | 26.10 | 0.94 | 0.03 | 0.25 | 20.81 | 162.80 |
| 2011 | 1.27 | 1.00 | 20.35 | 31.44 | 1.21 | 0.09 | 0.25 | 5.62 | 184.32 |
| 2012 | 1.02 | 0.80 | 7.26 | 36.95 | 0.35 | 0.07 | 0.35 | 13.75 | 242.74 |

**Regression Analysis**

Further, to investigate the predictive ability of our predictor variables on the criterion variable we employed the multiple regression analysis. The analysis was guided by the simple definitional model specified in section three. we recall the model for emphases: ROIit= β0 + β1CRit +β2LRit+β3CTRit+β4ITRit +β6DERit+ β7CATARit+ β8CLTARit +ε.

The regression result is shown in table 6.4.1 of the model summary. The adjusted R Square values of 0.100 indicate that about 10.0 % of the variation in ROI is explained by the independent variables included in our model.

Table 9 Model Summary (ROI)

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .563[a] | .317 | .100 | 8.530 |

Predictors: (Constant), CLTA, CR, ITR, CTR, CATAR,DER,LR

The overall significance of the model was assessed by ANOVA (Table 10). The result indicate that our model is statistically insignificant as exemplified in the F value of 1.460 and a P-value > 0.05

Table 10 ANOVA (ROI)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 743.777 | 7 | 106.254 | 1.460 | .232[a] |
| | Residual | 1600.727 | 22 | 72.760 | | |
| | Total | 2344.504 | 29 | | | |

a. Predictors: (Constant), CLTA, CR, ITR, CTR, CATAR, DER, LR
b. Dependent Variable: ROI

The Standardized Beta Coefficients of the variables shown in table 11 indicates that all the predictor variables makes contribution to the variation in the criterion variable, albeit, at varying degrees of significance. For instance, ITR make the highest contribution to the prediction of the ROI with a B-coefficient of .439, while LR makes the least contribution with a coefficient of 0.86. But, the T statistic and the Sig-values of all the predictor variables indicate insignificant impact on ROI at 5% and 10% levels respectively.

Table 11 Regression Coefficient (ROI)

| | Unstandardized Coeff. | | Standardized Coeff. | | |
|---|---|---|---|---|---|
| Model | B | Std. Error | Beta | t | Sig. |
| 1(Constant) | 18.460 | 9.554 | | 1.932 | .066 |
| CR | -4.448 | 10.238 | -.125 | -.434 | .668 |
| LR | 3.192 | 17.836 | .086 | .179 | .860 |
| CTR | -.002 | .006 | -.079 | -.318 | .753 |
| ITR | .464 | .236 | .439 | 1.964 | .062 |
| DER | -3.771 | 7.936 | -.144 | -.475 | .639 |
| CATAR | -1.652 | 19.699 | -.028 | -.084 | .934 |
| CLTA | -7.643 | 9.394 | -.377 | -.814 | .425 |

To further investigate the predictive ability of ROA on other predictor variables on we employed the multiple regression analysis (Table 12).

$ROA_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 CTR_{it} + \beta_4 ITR_{it} + \beta_6 DER_{it} + \beta_7 CATAR_{it} + \beta_8 CLTAR_{it} + \varepsilon$.

The regression result is shown in table of the model summary. The adjusted R Square values of 0.596 indicate that about 59.6 % of the variation in ROA is explained by the independent variables included in our model.

Table 12 Model Summary (ROA)

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .833[a] | .693 | .596 | 76.442 |

a. Predictors: (Constant), CLTA, CR, ITR, CTR, CATAR, DER, LR

The overall significance of the model was assessed by the ANOVA (Table 13). The result indicates that our model is statistically significance as exemplified in the F value of 7.101 and a P-value < .000.

Table 13 ANOVA (ROA)

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 290448.144 | 7 | 41492.592 | 7.101 | .000[a] |
| | Residual | 128553.238 | 22 | 5843.329 | | |
| | Total | 419001.382 | 29 | | | |

a. Predictors: (Constant), CLTA, CR, ITR, CTR, CATAR, DER, LR
b. Dependent Variable: ROA

The Standardized Beta Coefficients of the variables shown in table 14 indicates that all the predictor variables makes contribution to the variation in the criterion variable, albeit, at varying degrees of significance. For instance, DER makes the highest contribution to the prediction of the ROA with a B-coefficient of .377, while CR makes the least contribution with a coefficient of .139. Also, the T statistic and the Sig-values indicate that only CATAR generate significant impact on ROA at 5% and 10% levels respectively. The impact of the other predictor variables namely; CR, LR, CTR, ITR, DER, and CLTA are not significant even at 10% levels.

Table 14 Regression Coefficients (ROA)

| | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 230.869 | 85.617 | | 2.697 | .013 |
| | CR | 66.282 | 91.751 | .139 | .722 | .478 |
| | LR | -45.220 | 159.834 | -.092 | -.283 | .780 |
| | CTR | .049 | .055 | .148 | .890 | .383 |

| | | | | | |
|---|---|---|---|---|---|
| ITR | -1.516 | 2.117 | -.107 | -.716 | .482 |
| DER | 132.226 | 71.119 | .377 | 1.859 | .076 |
| CATAR | -677.950 | 176.534 | -.848 | -3.840 | .001 |
| CLTA | -81.738 | 84.182 | -.302 | -.971 | .342 |

a. Dependent Variable: ROA

***Hypothesis Testing***

The assumption of this study from the outset was that there is relationship between profitability and liquidity planning of cement companies in India. The zero order correlation coefficients indicates that CR are found to be negatively statistically significant at 5% level with ROA and ROI and the correlation coefficient of LR are found to be negatively statistically significant at 1% with ROA. The inventory turnover ratio (ITR) is positively related with return on investment (ROI) and return on assets (ROA) insignificant at 1% and 5% levels respectively. The relationship of Cash turnover ratio (CTR) with Profitability ratios ROA and ROI is also negative and is insignificant. The regression result indicates that non of the three liquidity ratios tested namely, CR, LR and CTR has a significant impact on profitability measured by ROA and ROI at 99% or even 95% significance level. Only CATAR is having a significant impact of the profitability measured in terms of ROA.

**CONCLUSION**

The cardinality of liquidity management in any organization cannot be over emphasized. This is because either inadequate liquidity or excess liquidity may be injurious to the smooth operations of the organization. This paper was set out to explore the seemingly controversial profitability/liquidity trade off theory. From literature, the controversy as regard the relationship and impact of liquidity on profitability is yet to be resolve as divergent finding exist. Our empirical investigation using both the partial correlation and regression analysis reveal that liquidity ratios measure by current ratio (CR), Liquid ratio (LR) and Cash Turnover Ratio, CATAR, CLTAR have a diminutive relationship with profitability measured by return on capital employed (ROA and ROI). It also revealed that CR and LR are negatively associated with ROA and ROI, while Cash Turnover Ratio (CTR) is negatively associated with ROI and ROA.

The implication of the above is that liquidity has low degree of influence on the profitability of cement companies in India. This only goes to confirm inefficiency and ineptitude in the management of liquid assets. Hence, there is a lost in the contribution expected from efficient liquidity planning. It is worthy to mention here that the inverse direction reveals with respect to CR and LR with profitability ratios ROA and ROI is very informative of the fact as it

proves the theoretical foundation (liquidity- profitability trade off theory) which posts that profitability and liquidity are inversely related or that there must always be a trade-off between profitability and liquidity. It is evident from these two ratios that the higher the company's margin of safety to the short-term creditors, the lower is the profitability of the company.

## REFERENCES


Azam, D. M. & Haider, S. I. (2011). Impact of Working Capital Management on Firms' Performance: *Interdisciplinary Journal of Contemporary Research in Business*, 3(5), 481-492.

Afza, T. & M. S. Nazir, (2007). Working Capital Management Policies of Firms: Empirical Evidence from Pakistan. *Conference Proceedings of 9th South Asian Management Forum (SAMF)*, North South University, Dhaka, Bangladesh.

Ahmed, I. (2007). Impact of Working Capital Management on Performance of Listed Non Financial Companies of pakistan: Application of OLS and LOGIT Models. *International Conference on Business Management*, 1-22.

Ajao, O. S. & Small, O. S. (2012). Liquidity Management and Corporate Profitability: Case Study of Selected Manufacturing Companies Listed on the Nigerian Stock Exchange. *Business Management Dynamics*, 2, 10-25.

Mohamad, N.E.A., & Mohd Saad, N. (2010). Working Capital Management: The Effect of Market Valuation and Profitability in Malaysia. *International Journal of Business and Management*, 5(11), 140-147.

Banos-Caballero, S., Garcia-Teruel P.J. & Martinez-Solano P, (2011). "How does working capital management affect the profitability of Spanish SMEs? *Small Business Economics*, 3, 1–13.

Bagchi, B., Chakrabarti, J. & Roy, P. B. (2012). Influence of Working Capital Management on Profitability:A Study on Indian FMCG Companies. *International Journal of Business and Management*, 7, 1-10

Benjamin, C. S. & Kamalavalli, A. L., (2009). "Sensitivity of Profitability to Working Capital Managements in Indian Corporate Hospitals".

Danuletiu, A. E. (2010). Working Capital Management and Profitability: A Case Of Alba County Companies. *Annales Universitatis Apulensis Series Oeconomica*, 1(12).

Deloof, M. (2003). Does Working Capital Management Affects profitability of Belgian Firms? *Journal of Business Finance & Accounting*. 30(3).

Dong H. P. (2010), "The Relationship between Working Capital Management and Profitability". International Research Journal of Finance and Economic. Issue-49.

Egbide, B.-C., Uwuigbe, O., & Uwalomwa, U. (2013). Liquidity Management and Profitability of Manufacturing Companies in Nigeria. IOSR Journal of Business and Management , 9 (1), 13-21.

Eljelly, A. (2004). Liquidity-Profitability Tradeoff: An Empirical Investigation in an Emerging Market, *International Journal of Commerce and Management*, 14(2), 48-61

Eliennot, H., Preve, L.A. & Allende, S.A. (2012). Working Capital Management: An Exploratory Study. *Journal of Applied Finance*, 162-163.

Filbeck, G. & Krueger, T. (2005), Industry Related Differences in Working Capital Management, *Mid-American Journal of Business*, 20(2), 11-18

Garcia-Teruel, P.J. & Martinez-Solano, P.M., (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*.

Ganesan, V. (2007). An analysis of working capital managementefficiency in telecommunication equipment industry. *Rivier Academic Journal*, 3, 1-10.

Gupta, M. C. & Huefner, R. J. (1972), A Cluster Analysis Study of Financial Ratios and Industry Characteristics, Journal of Accounting Research, 10(1), 77-91.

Gill, A., Biger, N., & Mathur, N. (2010). The Relationship Between Working Capital Management And Profitability: Evidence From The United States. *Business and Economics Journal*, 1-9.

Izadinia, N. & Taki, A. (2010). Investigation of the impact of working capital management on the profitability potential of the companies listed in Tehran Stock Exchange. *Journal of Science Research Financial Accounting*, 120-139.

Jain, P.K. & Kumar, P. (2006), Working Capital Management Practices - A study of Nifty index companies, JIMS 8M, 4-19.

Jamali, A. H. & Asad, A. (2012). Management efficiency and profitability in Indian automobile industry: from theory to practice. *Indian Journal of Science and Technology*, 5.

Lazaridis, I. & Tryfonidis, D. (2006). Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis*. 19 (1), 26 – 35.

Lamberson, M. (1995), Changes in Working Capital of Small Firms in Relation to Changes in Economic Activity, *Mid-American Journal of Business*, 10(2), 45-50

Mojtahedzadeh, V., Tabari, S. H. & Mosayebi, R. (2011). The Relationship between Working Capital Management and Profitability of the Companies. *International Research Journal of Finance and Economics,* (76), 158-166.

Mahmood & Qayyum. A. (2010). Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan, *International Research Journal of Finance and Economics*, 47.

Mahavidyalaya, D. B. (2010). Impact of working capital management on liquidity profitability and non-insurable risk and uncertainty bearing: a case study of oil and natural gas commission (ongc). 4 (2), 21-42.

Modi. S. (2012). A Study on the Adequacy and Efficacy of Working Capital in Automobile Industry in India. *The IUP Journal of Accounting Research &Audit,* 10(2).

Mohammadi, M. (2009). The impact of working capital management on profitability of companies in the companies society listed in Tehran Stock Exchange. Journal of Management, 80-91.

Odi & Solomon, (2010). An Empirical Analysis of Corporate Survival and Growth: Evidence from Efficient Working Capital Management, 12(1).

Rezazadeh, J., & Heydarian, J. (2010). The impact of working capital management affects profitability of Iranian companies. *Accounting Research*.

Rahman, M. M. (2011). Working Capital Management and Profitability: A Study on Textiles Industry. *ASA University Review*, 5, 115-132.

Raheman, A. & Nasr, M. (2007). Working Capital Management and Profitability- Case of Pakistani Firms, *International Review of Business Research Papers*, 3(1). 279-300

Shin, H., & L. Soenen, (1998). Efficiency of Working Capital and Corporate Profitability. *Financial Practice and Education*. 8(2), 37–45.

Soenen, L.A (1993), "Cash Conversion Cycle and Corporate Profitability", Journal of Cash Management, Vol. 13, No. 4, pp. 53-58

Shah, A. & Sana, A. (2006). Impact of Working Capital Management on the Profitability of Oil and Gas Sector of Pakistan. *European Journal of Scientific Research*. 15(3), 301 - 307.

Sharma, A.K. & Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India. *Global Business Review*, 12(1), 159 – 173.

Smith, K. (1980). Profitability versus liquidity tradeoffs in working capital management. In: Reading on the management of working capital. Smith, K. V. (Ed.). St. Paul, MN, West Publishing firm, USA, 549-562.

Scherr, F. C. (2007). Modern Working Capital Management, Prentice-Hall International, Inc. 1-3

Tufail, S. (2007). Impact of Working Capital Management on Profitability of Textile Sector of Pakistan. *International Conference on Business Management*, 1-29.

Uremadu, S. O., Egbide, B. C., & Enyi, P. E. (2012). Working capital management, liquidity and corporate profitability among quoted firms in Nigeria evidence from the productive sector. *International Journal of Academic Research in Accounting, Finance and Management sciences*, 2(1), 80-97.

Vishnani, S. & Shah, B. K. (2007). Impact of Working Capital Management Policies on Corporate Performance -An Empirical Study. *Global Business Review*, 8, 267.

Van Horne, J. C. & Wachowicz, J. M. (2000). Fundamentals of Financial Management. Eleventh edition, Prentice Hall Inc

Vural, G., sökmen, A. G. & çetenak, E. H. (2012). Affects of Working Capital Management on Firm's Performance- Evidence from Turkey. *International Journal of Economics and Financial Issues*, 2, 488-495.