Chapter – 1

Introductory Background of the Study

1.0 INTRODUCTION
Cement is the most essential raw material which is used for all kind of construction activities. It plays a crucial role in the infrastructural development of any nation, especially in a vast country like India, which has a big geographical size and a massive population. Cement is also an essential component of infrastructure development and the most important input for construction industry particularly in the Government’s infrastructure and housing programs which are necessary for the country’s socio-economic growth and development. There are various construction activities undertaken by the Central Government, State Governments, Public Sector Undertakings and other organizations including private sector, which create a huge demand for cement. Provision for a housing facility is the first and foremost requirement of every household and therefore the market demand of cement, for private consumption has been increasing constantly. Cement is the second highest consumed material in the world. The Indian cement industry is the second largest producer of cement in the world just behind China and ahead of the United States and Japan. Also, the cement industry is an important contributor to the revenue collected by both the Central and the State Governments through excise and sales taxes(Kumar & Bansal, 2013).

The oldest use of cement dates back to thousands of years old Egyptian civilization. They used natural cement which was made up of limestone and gypsum for the construction of their massive and highly impressive pyramids. The very fact that the Egyptian pyramids have proudly stood the test of time and withstand centuries of forces of nature over such a long period of human history is a testimony to the phenomenal strength of cement. Although, it must be stated that the cement used in ancient Egypt was very different from the cement in use today. Later, The Romans discovered that a mixture of Lime and volcanic ash not only made a hard and reliable mortar but it also hardened under water. The Roman hydraulic cement called Pozzolana was used for centuries and even after 2000 years, it still holds together famous structures such as the Coliseum and the Pantheon. To manufactures cement, Romans used a combination of slaked lime with Pozzolana, a volcanic ash from
Mount Vesuvius. By using this cement, the Romans made many impressive structures. The Basilica of Constantine is an example of Roman construction in which they used such cement mortar. They also used volcanic ash (pozzolane) as the cementing material in a primitive hot effective type of concrete (Low & Tan, 1993). The Romans knowledge was all but lost until 1756. It was when John Smeaton, a British engineer, rediscovered hydraulic cement. Smeaton had been commissioned to rebuild a lighthouse on the English Channel and was faced with the herculean task of building a brick tower in partially submerged rocks. Through research, he found that clayey limestone burned at a certain temperature and slaked (mixed with water) produced cement that not only would set under water but was strong enough to withstand the forces of winds and tides. Smeaton also discovered that a supply of volcanic ash, imported from Italy, when mixed with limestone and burned together, changed into cement that was not only hydraulic and strong but also had the quality of quick setting (Front et al, 2005).

In 1824 Joseph Aspdin, a mason and bricklayer in Leeds, made a mixer of limestone and clay, ground it very fine, mixed it with a rarer and then allowed it to dry. He ground it up again, burned it in a lime kiln to drive off all the carbonic acid on the stone and ground it at final time. Aspdin called the resulting powder as Portland cement (Front et al, 2005). Portland cement, the most widely used cement today, believed to have been invented by Joseph Aspdin of Leeds, a bricklayer by trade, who took out patent in 1824 for a synthetic mixture of limestone and clay (Low and Tan, 1993). There are a number of private and public sector companies of India that are engaged in the manufacturing and trading of cement. ACC Cement, Birla Cement, Ambuja Cement, Cement Corporation of India Limited and J.K. Laxmi are few examples of the leading cement manufacturing companies in India.

The Central Public Sector Enterprises (CPSEs) have been established and are managed and controlled by the Government of India as government companies, under the companies act or statutory corporations under the specific statues of parliament. In such enterprises, the central government holding in paid up share capital, is more than 50 per cent. The government uses these public enterprises as an instrument for enabling the country to attain self-reliant economic growth and over the years these enterprises have also played an eminent role in the sustainable growth of Indian economy. The Government has made sustained efforts to break the vicious circle of
poverty and underdevelopment by setting up PSE or by nationalizing certain industries (Jain, et al 2014).

In view of the increasing demand and the scarcity of cement, the price and distribution control was completely removed by the Government in the year 1989 and therefore, Indian cement industry was de-licensed in 1991. According to the Ministry, the liberalization process provided the much desired boost to the cement industry and the growth was quite visible. This decision of the government leads to appreciable growth in terms of 100 million tonnes capacity addition during the decade from 1999 to 2009. This capacity addition of cement manufacturing during the decade, could match the capacity addition built over a period of eight decades prior to that. The first cement enterprise in India was set up at Porbundar, Gujarat in 1914, having a production capacity of 1000 tonnes per annum, thus making the cement industry about a century old industry in India. Currently, the Indian Cement Industry is the second largest cement producer in the world, second only to China. India’s share in the world’s cement production is around 6 per cent and the cement industry comprises 154 large cement plants, with an installed capacity of 230.82 million tonnes, employing 1.35 lakh persons directly. The cement industry underwent rapid technological up gradation and vibrant growth during the last two decades. Some of the cement plants in the country can be compared in every respect with the best operating plants in the world (POI, 2011).

The Indian cement industry occupies a position of predominance not only as one of the basic infrastructure industries for development but also because it is the 2nd largest cement industry in the World, which directly employs almost one lakh persons. It constitutes a very important segment of the modern industrial economy of India. Initially, industrial policies were based primarily on revenue, without any regard to country's industrial development. A 'free import policy' made the survival of existing industrial concerns very hazardous. Besides, the discouraging attitude of the government towards industrialization, the lack of pioneering spirit and availability of capital among Indians, coupled with the fear of foreign competition, were responsible for initial industrial backwardness in the country. Due to all these factors, prior to the year 1914 when India entered into its cement era, the economic and political circumstances in India were detrimental to a considerable extent. In India cement as a building material has been known in one form or another since the time of ancient
Sind civilization at Mohenjodaro. Although, cement has a long history of its use in India, its manufacturing is relatively of recent origin. In India, the cement era commenced with the establishment of a small cement factory at Madras in 1904, by South India Industrial Ltd, a company that dates back to 1879. The capacity of this plant was only 10,000 metric tonnes per annum. Almost the entire invested capital of Rs. 9 lakhs, was owned by Indians. This was the first attempt of its kind to manufacture Portland cement with the calcareous sea-shells as principal raw materials. There was sufficient demand for the product but due to technological defects and inadequate and irregular supply of raw materials, the plant could not operate economically and ultimately it collapsed. The real foundation of the present cement industry was laid in the year 1912, when a small factory was established at Porbandar in Kathiawar, by the India Cement Company Ltd. This factory commenced its production in 1914, with a production rate of about 100 metric tonnes per day. This company adopted ‘dry processes’ in stationary intermittent operation, on vertical kilns, which were changed to continuous rotary kilns subsequently. This plant had an easy access to limestone quarries of Porbandar. Also, it was situated only 300 and 1,500 miles away from Bombay port and Bengal coal fields, respectively. The authorized capital of the enterprise was Rs.60 lacs and the paid up capital during the first year of its operation stood around Rs.7 lacs which increased to Rs. 20 lacs by 1920. Karachi, Gujarat, Bombay and Madras were its principal cities (Das, 1987).

The cement industry in India was continuously growing year by year, both in terms of production and in terms of installed capacity. The Indian cement industry has gone through various phases in the course of development. The industry which once was fully controlled by the government, experienced partial control during the eighties and today, it has been completely decontrolled (Mathur, 2001). Price and distribution controls were lifted on 1st March, 1989 and licensing has been abolished since 25th July 1991. This gave fresh impetus to the key infrastructure industry. However, the performance of the industry improved all the more after late 1990s guiding it to newer heights. The process of improvement in key performance indicators of the industry can be analyzed during changing policy regimes of the government. All the indicators are grouped into primary and other indicators, which clearly reflect the status of the industry during control and decontrol periods (Burange & Yamini, 2009).
The Indian cement industry comprises of 183 large cement plants and more than 360 mini cement plants. Large producers contribute about 97 per cent to the installed capacity while mini plants account for the rest. Among these, 98 per cent of the capacity is in the private sector and the rest in public sector (Ministry of Commerce and Industry, 2013). The Working Group on Cement Industry constituted by the Planning Commission for the 12th Five-Year Plan period, has projected a demand growth at the rate of 10.75% per annum during the plan period at an expected 9% GDP growth rate. The Working Group expects that the additional installed capacity requirement would be 139.7 million tonnes by 2017 and 1035.3 million tonnes by 2027 (Indian Minerals Yearbook, 2011).

1.0.1 Public Sector Enterprise of India: An overview

The Central Public Sector Enterprises (CPSEs) have been a strategic lever for Indian economic development in both pre-independence and post-independence era. In pre-independence era there were very few CPSEs in India which were centric to Railways, Posts and Telegraphs, Port Trust, Ordinance Factories, All India Radio, Aircraft factories, etc. Over the years, CPSEs not only have grown in numbers but also in the range of activities such as manufacturing, engineering, cement, heavy machinery, textiles, pharmaceuticals, petro-chemicals, etc (Assocham, 2011). Central public sector enterprises have been established, managed and controlled by the Government of India as government companies (under the Companies Act or Statutory Corporations under the specific statues of Parliament). In these enterprises, the Central Government holding in paid up share capital is more than 50%. The government has used these public enterprises as an instrument for attaining self-reliant economic growth and over the years they have played an eminent role in the sustainable growth of Indian economy. The importance of public sector in the Indian economy has been recognized since 1948. The public sector in India, since then, has experienced a phenomenal growth both in terms of number and volume of investment. The government has made sustained efforts to break the vicious circle of poverty and underdevelopment by setting up public sector enterprises or by nationalizing certain key industries (Jain et al., 2014). Public Sector Enterprises have been playing a dominant and unique role in industrial growth and development of Indian economy. In order to dismantle the accumulated problems of unemployment, disparities of rural and urban, inter-regional and inter-class disparities and technological backwardness
and to set up a socialistic pattern of society in the country, establishment of public enterprises have been conceived. In view of this type of socio-economic set up, Indian visionary leaders drew up a roadmap for the development of Public Sector as an instrument for self-reliant economic growth. This guiding factor led to the passage of Industrial Policy Resolution of 1948 and followed by Industrial Policy Resolution of 1956 (Ghouse, n.d).

Since inception, PSEs have been the mainstay of the Indian economy and were set up with the mandate to (Jain et al., 2014):
- Serve the broad macroeconomic objectives of higher economic growth.
- Achieve self-sufficiency in the production of goods/services.
- Facilitate long-term equilibrium in the balance of payments.
- Ensure stability in prices and create benchmarks for prices of essential items.
- Promote redistribution of income/wealth and balanced regional development.
- Create employment opportunities.

Presently, there are 277 Central Public Sector Enterprises (CPSEs) under the administrative control of various Ministries / Departments as on 31.3.2013. Out these 277 CPSEs, 229 were in operation and 48 CPSEs have yet to commence business. Out of 229 operating CPSEs as many as 149 CPSEs showed profit during 2012-13, 79 CPSEs incurred losses during the year and one CPSE has shown No Profit / No Loss (DPE, 2014).

The dominant consideration for the continued large investments in public sector enterprises was to accelerate the growth of core sectors of economy, to serve the equipment needs of strategically important sectors like Railways, Telecommunications, Nuclear Power, Defense etc. and to provide a springboard for the economy to achieve a significant degree of self-sufficiency in the critical sectors. The rationale for setting up public enterprises was to ensure easier availability of vital articles of mass consumption, to introduce checks on prices of important products, to help in promotion of emerging areas like tourism, etc. A large number of enterprises were created out of "Sick Units" taken over from the private sector inter alia, to protect the interests of the workers. A number of public enterprises were created to operate in national and international trade, consultancy, contract and construction services, inland and overseas communications, etc. The overall constitution of public sector enterprises in India is, thus, a heterogeneous conglomeration of basic and
infrastructure industries, industries producing consumer goods, industries engaged in trade and services and cement industry etc. ("Public sector", n.d.). In cement industry CCI is only central public enterprise in India.

### 1.0.2 Cement Corporation of India: A Brief Profile

Cement industry in any country plays a major role in the growth of the nation. Cement industry in India was under full control and supervision of the government. However, it got relief at a large extent after the economic reform. But government interference, especially in the pricing, is still evident in India. In spite of being the second largest cement producer in the world, India falls in the list of lowest per capita consumption of cement with a consumption of 125 kg. The reason behind this is the poor rural people who mostly live in mud huts and cannot afford to have the commodity. Despite this fact, the demand and supply of cement in India has grown up. In a fast developing economy like India, there is always large possibility of expansion of cement industry. In the Indian cement industry, there is only one central public sector undertaking, i.e. Cement Corporation of India Limited (CCI) which has ten production units, spread over eight States/Union Territories. Apart from for Bokajan, Rajban and Tandur units, remaining of the cement plants are lying closed for almost a decade or more. (IMY, 2011). The Cement Corporation of India suffered huge losses right since the inception of the operation of its plants. The Corporation continued to incur loss which subsequently assumed proportion of a crisis. Cement Corporation of India Ltd (CCI Ltd.) was incorporated as a wholly owned Government of India enterprise, on 18th January 1965 with the principal objective of achieving self-sufficiency in cement production. The authorized and paid-up capital of the Cement Corporation of India, as on 31st March, 2012 was Rs. 900 crore and Rs. 811.41 crore (including Rs. 41.75 crore for share application money pending allotment), respectively. In 1990, the Government of India came out with a slew of measures in favor of the cement industry in the form of transport subsidy and capital subsidy and waiver of excise duty and sales tax. The new plants commissioned in remote and backward regions or the old ones already functioning there and expanding their capacity for producing more cement, were eligible for those benefits while the private players could avail those incentives. However, Cement Corporation of India lagged behind as it hardly could take any step for capacity addition. Over the years the mounting losses sharply eroded its net worth. By the middle of 1990s, CCI Ltd.
suffered accumulated losses to the tune of Rs. 527.16 crore. That staggering amount was more than its paid up capital of Rs. 406.74 crore and reserves worth Rs. 0.99 crore. The collapse of the net worth sounded alarm bell to safeguard the very survival and commercial viability of the Corporation. It graduated from a loss making Corporation to a sick industrial undertaking. It, therefore, resulted in its reference to the BIFR under section 15(1) of CISA and was declared sick in August 1996.

The employees working in those units were kept under the category of Voluntary Separation Scheme to get rid of unproductive fixed expenses. The liabilities of the company were further reduced due to the waiver of interests, penalties and surcharge on the Government dues. Due to sickness of the company and the adoption of successive Voluntary Retirement Scheme (VRS) the strength of executives of the CCI operated plants got reduced from 531 to 206 during 2000-04. The ban on recruitment and the absence of induction of new employees since 1998 has further added to the problem. The shortage of manpower has thus badly affected the operational function of the units. The rehabilitation scheme sanctioned by BIFR on 3 May 2006, suggested the closure of seven unviable plants located in Mandhar, Kurkunta, Akaltara, Charkhi Dadri, Delhi Grinding Unit, Bhatinda Grinding unit, Nayagaon and Adilabad and sale of assets of those plants through Asset Sale Committee.

All Factories, Zonal Offices and the Corporate Office at Delhi, are interconnected via Internet. In line with the advancement in cement technology, CCI has been adopting the latest one million tonnes plants at Tandur and Nayagaon. CCI manufactures various types of cements like Portland Pozzolana Cement (PPC), Portland Slag Cement (PSC) & Ordinary Portland Cement (OPC) of varying grades viz 33, 43,53 and 53S(special grade cement used for the manufacture of sleepers for Indian Railways) grades under strict quality control with the brand name of CCI Cement.

CCI Ltd. has, as on 31th March 2012. A strong work-force of 907 employees and it has always encouraged a balanced regional growth which is evident from the fact that most of its factories are located in underdeveloped/backward areas. Also, CCI Ltd. has been contributing to the development of areas around its factories by adopting nearby villages and providing basic facilities like schools, health centers, drinking water etc. For maintaining the ecological balance CCI Ltd. is launching
massive tree plantation drives from time to time at all units and in surrounding areas. The units are spread throughout the country from East (Bokajan in Assam) to West (Akaltara, Mandhar in Chhattisgarh and Nayagaon in Madhya Pradesh) and from North (Rajban in Himachal Pradesh and Charkhi Dadri in Haryana) to South (Kurkunta in Karnataka and Adilabad, Tandur in Andhra Pradesh), with one cement grinding unit in Delhi (CCI, Ltd. n.d). In the present study an attempt has been made to analyze financial performance of CCI Ltd. for a period of ten years ranging from 2005 to 2014.

The sound performance of any industry reflects as to how effectively and efficiently resources are being utilized. Performance is an indicator for the management accomplishing the goals that are being set for the enterprise. It is the measure of a degree to which an organization fulfills its purpose and tries to achieve its objectives and goals. There are various aspects to measure the performance viz. marketing, human resource, operations and finance being major areas for measurement of overall performance of any organization. Therefore, Financial Performance is the key tool to measure the overall activities of a company. There are many techniques available to evaluate the performance of financial activities in an industrial set up. Generally, financial performance of a company is evaluated through its financial statements that are published annually. Financial performance indicates as to what extent does a company utilizes its assets. Financial Performance Evaluation gives a thorough account of marketing practices, human resource management, operations and trading practices of a company, which can be seen by going through its financial statements for a given period of time. Financial Statements give a clear picture about the working and progress of a company. Balance Sheet, Profit & Loss Account and Cash Flow Statement are the chief financial statements of the company. These financial statements are considered in acquiring information for evaluation of financial performance.

1.0.3 Appraisal of Financial Performance
Financial Appraisal is a scientific evaluation of the financial strength and the profitability of any business concern. It is a process of scientifically making power, critical and comparative evaluation of the profitability and financial health of a business concern, through the application of the techniques of financial statement analysis. It is a study of relationship among the various inter dependent financial
variables, as disclosed by a set of statements and scrutiny of these factors as shown in a series of statements. The Balance Sheet and the Profit & Loss Account are the two main financial statements of any business enterprise and they reveal the financial position, profitability and utilization of retained earnings. Nevertheless, financial analysis is not an end in itself, it is only a medium of communication and is related to the analysis and interpretation of various financial statements of a business. The process of financial analysis is characteristically devoted to evaluate the past, present and projected performance of a business firm for decision making strategies. The ability of an organization to examine its financial position is important for improving its competitive position in the marketplace (Bhunia, 2010).

The financial statement analysis examines the current and future financial, capital and income situation of a company. Amongst other sources, the analysis is based on information from the annual balance sheet of a company which considers historical data, present data and other available information. The financial statement analysis enables the depiction and interpretation of financial situations and developments (Hofmann & Lampe, 2013).

The analysis and interpretation of financial statements is an attempt to determine the significance and meaning of data given in statements so that the forecast may be made about future prospects of earnings, ability to pay interest and debt maturities and profitability. It is a process to evaluate the relationship between component parts of financial statements to obtain a better understanding about the position and performance of a firm (Metcalf & Titard, 1976). Financial analysis is the examination and evaluation of a firm’s financial positions and operations which involves comparison and interpretation of accounting data (Kulkarni, 1994). It is a scientific tool which has assumed an increasingly important role in terms of appraising the real worth of an enterprise, its performance during the period of time and its pitfalls. It also helps in drawing out the complications of what is contained in financial statements. Financial analysis is defined as the process of discovering economic facts about an enterprise or a project on the basis of an analysis of the available financial data (Desai, 1999). Financial statements are prepared for the purpose of presenting a periodical review or report by the management and deal with the status of investment in the business and the result achieved during the period under review. They reflect a combination of recorded facts, accounting conventions
and personal judgment and conventions applied which affect them materially. The soundness of the judgment necessarily depends on the competence and integrity of those who makes the financial statements and on their adherence to generally accepted accounting principles and conventions. The basic purpose of financial statements is to transmit reliable and useful information to interested groups, both external and internal (Reynolds & Madhavan, 1968). There are numbers of tools and techniques available for the analysis and interpretation of financial statements of any business concern. Comparative statement analysis, Common size statement analysis, Ratio analysis, DuPont model, Altman Z score etc are the main techniques used for the appraisal of a business enterprise. Accounting ratios are used for the measurement of liquidity, solvency, and management efficiency of the company under study. Altman Z score is used to check the financial health and for the prediction of financial distress for upcoming years of the CCI.

1.2 SCOPE OF THE STUDY
The present study is based on the analysis of the published annual reports of CCI Ltd for a period of ten years from 2005-06 to 2014-15. All the results and findings of the study are confined to this period only. The main aim of the present study is to evaluate the financial performance of CCI Ltd. The Financial performance of the corporation has been analyzed in detail to provide comprehensive information about the efficiency of the business operations and financial performance of the company.

The financial performance of CCI Ltd. has been evaluated with the help of different accounting tools and techniques. Present study employed accounting ratios analysis, DuPont analysis and Z score technique to analyze Liquidity, solvency and profitability position of the company under study. In order to assess the overall financial performance of the company comparative and common size financial statements analysis has also been taken into consideration. The present research is aimed to provide detailed information relating to the financial performance of the company to its various stakeholders. As the only public sector corporation of Cement Industry, the CCI plays a significant role in Indian economy and the financial performance of this corporation will highlight the efficiency of the business operations and the overall performance of the company, which might prove helpful for the stakeholders looking forward to enter into a relationship with the company.
1.3 OBJECTIVES OF THE STUDY

The main objective of the present study is to evaluate the financial performance of CCI Ltd. during the period of study. The main objective of the study has been supported by the following specific objectives.

1. To analyze the financial performance of CCI Ltd. in terms of Liquidity, Solvency, Efficiency and Profitability over the period of study.
2. To evaluate financial performance of CCI Ltd. with the help of comparative and common size statements during the period of study.
3. To examine the financial health of CCI Ltd. with the help of Altman Z score model.
4. To investigate the financial performance of CCI Ltd. using Du-Pont analysis during study period.
5. To assess financial strength of the CCI with the help of comparison of Company’s ratios with industry ratios.
6. To summarise the main findings of the study and to offer suggestions, if any, for improving the performance of selected company.

1.4 HYPOTHESES OF THE STUDY

The hypotheses of the present research are as follows:

*Hypotheses of the study (Regression Analyses)*

**H01:** There is no significant impact of Liquidity Ratios on Profitability of CCI Ltd.

  - **H01a:** There is no significant impact of Current Ratio on Return on Capital Employed of CCI Ltd.
  - **H01b:** There is no significant impact of Liquid Ratio on Return on Capital Employed of CCI Ltd.
  - **H01c:** There is no significant impact of Cash Position Ratio on Return on Capital Employed of CCI Ltd.

**H02:** There is no significant impact of Solvency Ratios on Return of Capital Employed of CCI Ltd.

  - **H02a:** There is no significant impact of Debt Equity Ratio on Return on Capital Employed of CCI Ltd.
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H0_{2b}: There is no significant impact of Interest Coverage Ratio on Return on Capital Employed of CCI Ltd.

H0_{2c}: There is no significant impact of Propriety Ratio on Return on Capital Employed of CCI Ltd.

H0_{3}: There is no significant impact of Turnover Ratios on Return of Capital Employed of CCI Ltd.

H0_{3a}: There is no significant impact of Stock Turnover Ratio on Return on Capital Employed of CCI Ltd.

H0_{3b}: There is no significant impact of Total Asset Turnover Ratio on Return on Capital Employed of CCI Ltd.

H0_{3c}: There is no significant impact of WCTR Return on Capital Employed of CCI Ltd.

H0_{4}: There is no significant impact of Sales on Net Profit of CCI Ltd.

Hypotheses of the study (Paired t-test)

H0_{5}: There is no significant impact of Financial Restructuring on Financial Performance of the CCI Ltd.

H0_{5a}: There is no significant impact of Financial Restructuring on Current ratio of the CCI Ltd.

H0_{5b}: There is no significant impact of Financial Restructuring on Gross Profit Ratio of the CCI Ltd.

H0_{5c}: There is no significant impact of Financial Restructuring on Return on Capital Employed of CCI Ltd.

H0_{5d}: There is no significant impact of Financial Restructuring on Debt Equity ratio of CCI Ltd.

H0_{5e}: There is no significant impact of Financial Restructuring on Total assets turnover ratio of CCI Ltd.
Hypotheses of the study (One sample t-test)

H06: There is no significant difference between financial performance of Indian Cement Industry and Cement Corporation of India Ltd.

H0a6: There is no significant difference between average Current Ratio of Indian Cement Industry and Cement Corporation of India Limited.

H0b6: There is no significant difference between average Return on Capital Employed of Indian Cement Industry and Cement Corporation of India Limited.

H0c6: There is no significant difference between Return on Net worth of Indian Cement Industry and Cement Corporation of India Limited.

H0d6: There is no significant difference between Debt Equity Ratio of Indian Cement Industry and Cement Corporation of India Limited.

H0e6: There is no significant difference between Sales Growth of Indian Cement Industry and Cement Corporation of India Limited.

H0f6: There is no significant difference between Total Asset Turnover Ratio of Indian Cement Industry and Cement Corporation of India Limited.

H0g6: There is no significant difference between Working Capital Turnover Ratio of Indian Cement Industry and Cement Corporation of India Limited.

1.5 RESEARCH METHODOLOGY OF THE STUDY
The present research is primarily based on secondary data extracted from the financial statements i.e. Profit & Loss Accounts and Balance Sheets associated with schedules and annexures available in the published annual reports of CCI Ltd. For the purpose of the study, journals, conference proceedings, Government publications, websites and other relevant documents related to CCI Ltd have also been perused to supplement the data. The collected information and data has been systematically arranged, synthesized, tabulated and analyzed. In order to arrive at conclusions, different financial and statistical tools have been applied. Graphical presentation of calculated data is also being given to provide the reader a better understanding about the study.

1.5.1 Sample of the Study
The present study is devoted to one of the biggest Central Public Sector Enterprise of Cement Industry in India with special reference to Cement Corporation of India Ltd.
1.5.2 Nature and Sources of Data

The data used for the analysis and interpretation is purely secondary in nature. The secondary data used for the study has been taken from the published annual reports of Cement Corporation of India Ltd. from 2005-06 to 2014-15. Annual reports are taken from the head office of Cement Corporation of India Ltd in New Delhi. The Official website of the company has also been used for collecting useful information. Financial data of cement industry has been extracted from PROWESS database provided by the Centre for Monitoring Indian Economy (CMIE) and from ACE EQYITY database. These databases are the most comprehensive source containing financial information of listed and unlisted public and private companies of India. A number of Journals, Research Paper and News Papers and other relevant Government publications as well as internet have also been consulted for the data collection.

1.5.3 Period of the Research

The time period of ten years from 2005-06 to 2014-15 is considered to draw meaningful inferences. Data of ten years is sufficient to have an idea about the financial performance of CCI Ltd. To find the impact of financial restructuring ten years data before financial restructuring from 1997-98 to 2005-06 and ten years data after financial restructuring from 2006-07 to 2014-15, have been taken for analysis.

1.5.4 Variables used in the study

The variables incorporated in the present study are financial ratios of CCI Ltd under various categories i.e. Liquidity, Solvency, Efficiency and Profitability. Financial ratios have been used in the present study to analyze the financial performance of CCI Ltd. Financial ratio analysis is an important and powerful technique of financial performance evaluation. The concept of financial performance analysis along with its various techniques has been discussed in detail in the fifth chapter of the thesis. In the present study, the selection of variables was based on their popularity in literature, performance of such ratios in earlier studies and their relevance for the present study.

1.5.5 Tools/Techniques Used in the Study

Accounting & Financial Tools

- Common Size Statements Analysis
- Comparative Statements Analysis
- Trend Analysis
- Ratio Analysis
• DuPont Analysis
• Altman Z Score

**Statistical Tools**

• Descriptive Statistics
• Regression Analysis
• One sample t test
• Paired t test

Various accounting and statistical techniques have been used in the present study to analyze financial performance of CCI Ltd. Accounting techniques used to analyze financial performance of the company under study are comparative statements analysis, common size statements analysis, Ratio analysis, Du-pont analysis and Altman’s Z score model. Liquidity, solvency, profitability and efficiency position of CCI have been analyzed through the aforementioned techniques. Descriptive statistics of the variables was used to summarize the data in a meaningful way. Regression analysis was employed to evaluate the impact of liquidity, solvency and management efficiency on profitability of CCI Ltd during the study period. In order to compare financial health of CCI Ltd, one sample t test was used to compare financial ratios of CCI Ltd with their industry average ratios while Paired t test was used to evaluate the impact of financial restructuring on financial performance of CCI Ltd. Financial ratios of CCI Ltd. were calculated and their graphical presentation was done with the help of MS-Excel. The statistical tests were applied by using SPSS 19.0. Various statistical tools used in the present study have been discussed as follows.

**Statistical Tools**

The role of statistical tools is important in analyzing and interpreting the data and drawing inferences there from. Every analysis does involve the use of various statistical techniques. The tools of statistics were implemented in present research by the means of software’s viz. MS-Excel and Statistical Package for the Social Sciences (SPSS 21) along with their respective graphical presentation. Some of the important statistical techniques that have been applied in the research for financial analysis are as follows:
Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data. Descriptive statistics is the term given to the analysis of data that helps to describe, to show or to summarize data in a meaningful way such that, for example, patterns might emerge from the data. Descriptive statistics are very important because if the data is simply presented, it would be hard to visualize what the data was showing, especially if there was a lot of it. Descriptive statistics, therefore, enables to present the data in a more meaningful way, which allows simpler interpretation of the data. Diagrams and graphs are visual aids which give a bird’s eye view of a given set of numerical data. They present the data in simple readily comprehensible and intelligible form. Graphical presentation of statistical data gives a pictorial effect instead of just a mass of figures. They depict more information than the data shown in the table which throws light on the existing trend and changes in the trend of the data (Chandarana, 2008). The descriptive statistics include numbers (N), mean, Standard Deviation (σ) and variance.

- **Mean**
  It is most common measure of central tendency and obtained by dividing the total of the values of various given items in a series by the total number of items (n). Its chief use consists in summarizing the essential features of a serious and in enabling data to be compared. It is amenable to algebraic treatment and is used in further statistical calculations. It is a relatively stable measure of central tendency. But it suffers from some limitations viz., it is unduly affected by extreme items, it may not coincide with the actual value of an item in a series. However, mean is better than other averages, especially in economic and social studies, where direct quantitative measurements are possible (Kothari, 2004).

\[
Mean(X) = \frac{X_1 + X_2 + \ldots + X_n}{n}
\]

- **Standard deviation**
  Standard deviation is mostly used measure of dispersion of a series and is commonly denoted by the symbol of sigma. It is defined as the square root of the average of
squares of deviations, when such deviations for the values of individual items in a series are obtained from the arithmetic average (Kothari, 2004).

- **Regression Analysis**

  It is a method to discover the relationship between one or more response variables (also called dependent variables, explained variables, predicted variables or regressands, usually denoted by y) and the predictors also called independent variables, explanatory variables, control variables, or regressors, usually denoted by x1, x2, ……… xp (Yan, 2009). In other words, regression is the determination of the statistical relationship between two or more variables. In simple regression, we have only two variables, one variable defines as independent variable is the cause of the behaviour of another one which defined as dependent variable (Kothari, 2004). There are three types of regression.

  - Simple linear regression
  - Multiple linear regression
  - Non linear regression

  In present study the simple linear regression have been used for the data analysis. Simple linear regression has been discussed below:

  - **Simple Linear Regression**

    The simple linear regression is the first type of regression analysis to be studied rigorously and to be used extensively in practical applications. The simple linear regression is used for modeling the linear relationship between two variables. One of them is dependent variable (y) and another is the independent variable (x) (Yan & Su, 2009). In statistics, **simple linear regression** is the least squares estimator of a linear regression model with a single explanatory variable. In other words, simple linear regression fits a straight line through the set of n points in such a way that makes the sum of squared residuals of the model (that is, vertical distances between the points of the data set and the fitted line) as small as possible (“Simple Linear Regression”, nd).

- **Correlation**

  Correlation is a statistical technique that can show whether and how strongly, pairs of variables are related. Correlation analysis attempts to determine the degree of relationship between variables. It is used in deriving precisely the degree and direction of relationship between variables like price and demand, rainfalls and crops yield etc. It is used in developing the concept of regression and ratio of variables
which help in estimating the values of one variable for a given value of another variable (Patri & Patri, 2011).

- **T test**

  The $t$ test is one type of inferential statistics which is used to determine whether there is a significant difference between the means of two groups exist or not. $T$ test is based on $t$ distribution and is considered an appropriate test for judging the significance of a sample mean or for judging the significance between the means of two samples in case of small sample(s) when population variance is unknown (in which case we use variance of the sample as an estimate of the population variance).

  In case of two samples, we use paired $t$ test for judging the significance of the mean of difference between the two related samples. It can also be used for judging the significance of the coefficients of simple and partial correlations. $T$ test statistic, $t$, is calculated from the sample data and then compared with its probable value based on $t$–distribution to be read from the table that gives probable values of $t$ for different levels of significance for different degrees of freedom at a specified level of significance for concerning degrees of freedom for accepting or rejection the null hypothesis (Kothari, 2004).

  In the present study, one sample $t$ test and paired $t$ test has been used.

  ➢ **One Sample T Test**

  One sample $t$-test is a statistical procedure used to examine the mean difference between the sample and the known value of the population mean. In one sample $t$-test, population mean is known. A random sample from the population is drawn and then sample mean is compared with the population mean and make a statistical decision as to whether or not the sample mean is different from the population mean (“Statistics solutions”, n.d).

  $$ t = \frac{\bar{X} - \mu}{S/\sqrt{n}} $$

  ➢ **Paired T-Test**

  A paired $t$-test is used to compare two population means of two samples, in which observations in one sample can be paired with observations in the other sample. For examples, before-and-after observations on the same subjects like students’ diagnostic test results before and after a particular module or course and a comparison of two different methods of measurement or two different treatments where the
measurements/treatments are applied to the same subjects like blood pressure measurements using a stethoscope and a dynamap (Shier. 2004).

\[ t = \frac{\bar{d}}{\sqrt{S^2/n}} \]

1.6 SIGNIFICANCE OF THE STUDY

Today, business firms exist in a rapidly changing business environment and therefore, it is necessary to analyzing financial performance of a business firm from time to time in order to assess its operating and earning capacity. From its inception in the year 1965, financial performance of CCI Ltd has not been satisfactory. Therefore, the present study has its significance to analyze financial performance of CCI Ltd to find various obstacles in the way of its sound performance. Financial performance analysis of a business firm is important for its various stakeholders like Shareholders, employees, suppliers, government etc. The present study may prove important to various stakeholders of CCI Ltd. The following points will clarify significance of the study more elaborately:

- The financial performance evaluation of CCI Ltd will provide an outcome about the workings and performance of the company which will be helpful for the management of the company in order to enhance its performance and business activities.
- Findings of the present study may be helpful for the Government in making policies regarding CPSEs of the country.
- It is also necessary to find out some important factors which may affect internal decision making of the company. Hence, present study is deemed to be useful for this purpose.
- An analysis has been made on various functional aspects like liquidity, solvency, profitability and assets utilization. Thus, the relevant information can be used by stakeholders in decision making.
- The important aspect and contribution of the study is to identify the reasons of poor financial performance of the company by the application of financial statement analysis.
1.7 LIMITATIONS OF THE STUDY

Limitations are always there in any study. The present research also has some limitations which have been mentioned as follows:

- The study is purely based on secondary data extracted from the published annual reports of the company, its website and other related published sources. Thus, findings of the study are subject to the accuracy of such data that has been collected from these sources.
- The present study includes only a period of ten years i.e., from 2005-06 to 2014-15. Hence, findings are limited to this period only.
- The present study is based on ratio analysis and it has its own limitation that applies to this study also.
- Financial statements are normally made on the theory of historical costs and therefore they do not reflect values in terms of current costs. Therefore, analysis of such financial statements or accounting variables would not depict the effects of price level changes over a period of time.
- Financial analysis does not reflect those facts which cannot be expressed in terms of money. For example, efficiency and reputation of workers, and prestige of the management.
- The researcher is an external evaluator of CCI Ltd and thus the inside view of CCI is beyond the purview of researcher.

1.8 CHAPTERISATION SCHEME OF THE STUDY

The present thesis has been organized into seven chapters. A short overview of each chapter is presented as follows:

The first Chapter deals with the Introduction of the study which provides the general information about the subject under research, it also includes statement of the problem, research Design, objectives of the study, scope of the study, significance of the study, need for the study and Research methodology, covering nature & sources of information and tools used for analyzes & interpretation. It also includes hypotheses of the study, limitations of the study and chapterization scheme.

The second chapter gives an extensive review of literature. It deals with reviews of past studies on financial performance analysis of firms in Cement industry as well as
in other industries working in foreign countries as well as in India. The review gives an insight into the significance of financial analysis of business firms.

The third chapter gives an Overview of cement Industry throwing light on growth, development, production, consumption, import and export scenario, policies of the government, demand and supply scenario and various issues and challenges related to Indian cement industry.

The fourth Chapter Deals with profile of Cement Corporation of India Ltd.

The fifth chapter entitled ‘Financial Performance analysis- A Conceptual framework’ deals with the conceptual framework used in the present study. It also discusses the concept of financial analysis, types of financial analysis, procedure of financial statement analysis, importance of financial analysis, limitations of financial analysis, purpose of financial statement. Various techniques of financial analysis like comparative statement, trend analysis, common size statement, fund flow statement, cash flow statement ratios analysis are discussed at length.

The sixth chapter deals with Data analysis and Interpretation. In this chapter detailed analysis has been made regarding the financial performance of CCI Ltd. Various accounting ratios were calculated and analyzed to judge the performance of CCI Ltd. during study period. Also, impact of financial restructuring by BIFR on CCI Ltd. financial performance were calculated and analyzed. Various hypotheses framed were also tested in this chapter.

The seventh Chapter entitled ‘Summary of Findings, Suggestions and Conclusion’, contains the summary of the findings. In this chapter suggestions have been offered in the light of the findings for improving the performance of CCI Ltd. In addition the researcher has given his own ideas by way of a brief conclusion.

The chapter covers statement of problem, research gap, scope of the study, objectives and hypotheses. It also elucidates research methodology used in the study that provides an adequate and resonant foundation to research in terms of sample scheme, sources of data and various statistical tools and techniques. Finally, the chapter culminates with explaining the limitations, expected contribution and chapter scheme of the study.
REFERENCES


Chapter 1

Introductory Background of the Study


