INTRODUCTION

The economic and social well-being of any country mainly depends upon the available natural resources and efficient utilization of the same. The industrial development and manufacture of various products under the broad classification such as necessities, comforts and luxuries, is an important aspect of the economic development of any country. The country’s economic and financial status becomes dominant and comparable if proper planning is carried out so as to produce such of those items and commodities which have international market as well as greater export potentiality. It may be observed that there are many countries in the world which have much of natural resources but not properly utilized. But at the same time, there are many countries which enjoy greater financial and industrial achievement even though they have very poor availability of natural resources.

The prosperity of a country, the Gross Domestic Product, the standard of living and the per capita income of the people depend on performance of economy to a larger extent. Major portion of any country’s GDP is being contributed by the corporate sector.
All over the world, the manufacture and marketing of the products may be classified as

1. consumables
2. non-consumables

Consumable, are mainly targeted to support the living style and system of the individuals in any country. But there are many non-consumable items which contribute to the standard of living of the people of any country and cement is one such product. It may be observed that the industrial growth of any country has different branches and they are all diverted towards the manufacture of the products which help

a. in developing the infrastructure of the country such as developing building, roads and so on.

b. the industrial growth which aims at the manufacture of those items which help the process of manufacturing

The diversification of the production industry in any country also aims at the strengthening of its economy. It is in this respect the concept of exports is given due attention in many countries so as to strengthen its economic and financial background in the world market. The manufacture of various items such as chemicals, fertilisers, cement and so on. is given due importance so as to
achieve greater export potential. There are many items which contribute to the export potential of any country. It includes food items such as sugar, pulses, wheat and so on electrical and electronic products, garments, light and commercial vehicles for transportation, drugs for human and animal use and so on. It is very interesting to observe that apart from the various countries in the world, India plays a dominant role in the export scenario. There are many products which are exported from India to other countries and cement is one of the very vital products that is exported to other countries. There has been a sustained growth of Indian cement industry over the past five decades. It is really a matter of interest to observe that during the pre-independence as well as pre-world war II periods, cement has been imported from other countries and it was found to be a product of use by only those who are rich and privileged. With the passage of time, the growth of cement industry in India has been very much noted with the result that in India at present there are 132 number of large cement manufacturing plants and 365 number of mini cement plants as on 31st March 2007. It is also interesting to note that the manufacture of different types of chemically sophisticated cement products is on the increase in India.

The viability of achieving a greater market share has been made possible by introducing different types of cement products which have special use and applications.
India is a country of above 1000 million people with 3.28 square million kilometers of land which is endowed with enormous amount of natural resources.

The success of India depends on the exploitation of all these resources for its development. Corporate sectors provide the medium through which these resources could be very effectively exploited. The success of any country largely depends on the performance of its corporate. Endowing the resources to the able performers, India could prosper well. The Indian cement industry plays a dominant role in the national economy generating substantial revenue for state and central government through customs, excise and sales tax collections. To every development activity, from the construction of a small factory to the structuring of multi-purpose projects, cement is an important ingredient. In 1980s India emerged as a major cement producing country in the world.

The Indian cement industry accounts for approximately 1.3 per cent of GDP and employs over 0.15 million people.

**STATEMENT OF PROBLEM**

India’s manufacturing sector used to account for only about 10 per cent of its GDP in the early 1950’s, but currently it accounts for about 19 per cent. This sector had been highly protected from both internal and external competitions over a long period of time and until the early 1990’s when the country embraced the new economic policy since 1991. The manufacturing sector in the country has
under gone a wave of liberalisation, the major objective of it, is to reduce both external and internal barriers to entry. Such a reduction, it was argued to enhance the competitiveness of the sector and thereby making it more efficient. Since 1992-93, the manufacturing sector has grown at the rate of 5 to 6.9 per cent per annum. Against this background, it is critical to examine the performance of manufacturing sectors with specific focus on cement industry.

In terms of distribution of industries in manufacturing sector, the cement industry is one of the important and major contributing sector industry. It contributes close of Rs.4000 crores in the form of Central Excise duties and Rs.3500 crores towards Value Added Tax to various state governments. Octroi, Royalty and cess will account for an additional Rs.1800 crores. The industry accounts for a direct employment of over 2 lakhs and indirect of 12 lakhs people employed. The cement industry is selected for research due to several important factors. Cement is a basic core product, essential for building our nation and its growth intrinsically linked with the overall growth of the economy and more importantly with the growth of the infrastructure sector. The lack of adequate roads, ports, power and other infrastructural facilities could prove to be a major bottle neck to the rapid growth of the country. Financial performance is the operating efficiency of a company in terms of the financial parameter. The
financial efficiency of a company can be measured in terms of solvency, stability, liquidity, capitalization, turnover ability, coverable ability, profitability, leverages and its operating cycle.

The profitability of the business depends on the cost incurred for the production of goods. If the cost increases, the profit of the business is reduced and ultimate the business may slip in to liquidation stage. Moreover, future development programme of the company can be designed according to the fixed and variable expenses and investment level. Future budget and plan depends on the major cost management of the company. Therefore, the Financial Performance of the select cement companies in Tamil Nadu gets importance in the present day context.

**OBJECTIVES OF THE STUDY**

The following are the objectives of the present study.

1. To trace the origin and history of cement industry in India

2. To study the profile of all the major cement companies like Madras cements, Tamil Nadu Cements (TANCEM), India Cements, Chettinad Cements and Dalmia Cement in Tamil Nadu.

3. To study operational and cost efficiency of the cement industry in Tamil Nadu
4. To analyse working capital management of cement industry in Tamil Nadu
5. To analyse the funds flow of cement industry in Tamil Nadu
6. To have a comparative analysis of the private and public sector cement companies with regard to their financial performance in Tamil Nadu
7. To offer suggestions based on the findings

SIGNIFICANCE OF THE STUDY

Cement plays a vital role in the building modern India that is, challenging the other nations in the world arena. Infrastructure development in India is in its rapid phase and is to be curved properly so as to have India ahead of other countries.

In this situation the problems connected with the effective financial management will help the financial institutions, governmental agencies, other statutory regulators to take proper step in planning for the various infrastructure development projects in the Indian Economy.

Even though many studies in this direction have been conducted, the present one would be of greater significance to many. It would help to understand the pattern and structure of the financial variables of the selected companies. It would also enable the shareholders, investors and investment analysts to identify the determinants of the financial performance. Further it would provide insight to
banks, financial institutions and long term lenders to understand the financial capability and effectiveness of the cement companies. The study will help industry associations that can initiate some collective steps to strengthen the industry. The management will be benefitted by understanding the changes in economic policies and their competitor’s financial strengths.

**SOURCES OF DATA**

The data used for the present study is secondary data. The present data were collected from the published annual reports of the respective companies for the period 1995-96 to 2004-05. The annual returns provide various aspects including their corporate governance, financial statements, funds flow, products profile, returns and risks on the stock market. The RBI Bulletin, Union Bank’s Bulletin, CMIE (Centre for Monitoring Indian Economy) monthly and yearly reports on corporate sector and Economic Intelligence are used. The quarterly journal published by the Cement Manufacturers Association (CMA) are also used as a data source.

**METHODOLOGY**

In the present study, it is proposed to consider the study area as Tamil Nadu and there are many cement companies in Tamil Nadu. Among the cement companies in Tamil Nadu, only five companies are selected for the purpose of data collection and study. It is also decided to take four cement companies from the
private sector and the only one available public sector government owned company namely TANCEM. From the private sector companies four companies that have management control in Tamil Nadu have been selected by virtue of the fact that they possess the highest market share.

**SAMPLING DESIGN**

The sample companies have been chosen based on the size of the company. There are different parameters to measure the firm’s size. Some of them are net profit, total assets, gross profit, total share capital and net sales. Each variable cannot represent the exact firm’s size in isolation to other variables that is each variable has their own limitations.

In our study we have chosen the total asset as the base for selecting the company. The great advantage of the total assets as a measure of the firm’s size is that this variable can represent the overall size of the firm compared to other variables. In addition, the availability of the figures for total assets based on the published data to choose this variable. Based on this, the size has been determined on the basis of the investment in total assets of a company during the end of the study period. Those companies, who have their controlling interest present in Tamil Nadu – either in form of having their major, long established plants in Tamil Nadu or having their registered office in Tamil Nadu – are chosen as
samples. To have the best comparison, we have chosen private sector and government owned cement companies.

Out of this, the companies which have invested more than Rs.15,000 crores in total assets during the last year of the study period, have been selected. In Tamil Nadu, there are only six cement companies that have invested more than Rs.15,000 crores in total assets in their facilities that are in Tamil Nadu. Of this, five companies have been selected and the rest is omitted due to non-availability of data consistently for the required study period.

PERIOD OF STUDY

The present study covers a period of 10 years starting from 1995-96 to 2004-05 in order to evaluate the financial performance of selected cement companies in Tamil Nadu.

SCOPE OF THE STUDY

The study aims to make an analysis of financial performance of cement companies in Tamil Nadu. The study is pertaining to large cement companies in Tamil Nadu. In the study, we have used the financial facts of the selected companies from 1995-96 to 2004-05. The financial performance of the sample companies is evaluated in terms of profitability, liquidity, financial health and
value creation for their shareholders. The scope of financial performance is very wide and the study is based on accounting information.

**HYPOTHESES OF THE STUDY**

The aim and purpose of the present study is to have an idea of the financial stability as well as their performance during the period of study namely 1995-96 to 2004-05. In order to examine the nature of performance, comparative idea of performance, the data have been collected after the formation of the following hypotheses, which would provide information on the nature and extent of financial achievement of the cement industry in Tamil Nadu. The hypotheses formulated are:

1. There exists no significant difference between the average level of working capital over the years

2. There is no significant difference between the average working capital between companies

3. There is no significant difference between the average working capital of private sector cement companies and public sector cement company over the years
4. The average level of performance with respect to operational efficiency, profitability, return to equity shareholders do not differ significantly between successive years for all the companies

5. The average level of efficiency do not differ between companies

6. The pattern of growth in working capital as well as the other variables indicating performance efficiency do not report a creditable pattern

**FRAME WORK OF ANALYSIS**

To analyse the financial performance of selected cement companies in Tamil Nadu, the following tools and models have been applied.

**Statistical Tools Used**

To bring out the relevant facts effectively, the data analysis requires, the use of statistical tools. In the present study, both descriptive statistics as well as inferential statistics have been adopted.

**a. Descriptive Statistics**

The descriptive statistics such as Mean, Standard Deviation have been computed to have a comparative idea of different cement companies with regard to their performance indices like working capital, profitability and so on.
b. Inferential Statistics

The fitting of polynomial trend equations for studying the nature of growth over the years for the different industries, if, a particular equation can be obtained as a good fit for the data, predictions for the future could be made using such an equation.

Descriptive Statistics

The Descriptive statistics includes the following:

i. Arithmetic Mean (\( \bar{X} \))

Mean is a central tendency measure representing the arithmetic average of a set of observations. It gives a single value to describe the whole data. It has been obtained by adding the values of all observations and dividing it by the number of observations.

ii. Standard Deviation (\( \sigma \))

Standard deviation is the square root of variance; it is a measure of dispersion in the same units as a original data. Higher the S D, greater is the dispersion.

iii. Co-efficient of Variation (C.V.)

It is a relative measure of dispersion, comparable across distribution, which expresses the standard deviation as percentage of the mean. It is used in problems,
which requires to compare the variability of two or more than two series. The series, for which the co-efficient of variation is greater, is said to be more variable or conversely less consistent, less stable or less homogenous. It is calculated by the following formula: In ratio analysis of financial data less co-efficient of variation indicates relatively better control of the management on that ratio.

**Inferential Statistics**

Statistical inference is that branch of statistics which is concerned with using probability concept to deal with uncertainty in decision making. It refers to the process of selecting and using a sample statistic to draw inference about a population parameter based on a subset of it – the sample drawn from the population.

**Use of analysis of variance:** To examine whether significant differences exist on the average value of different indicators of performance, between years and between companies.

**ii. Hotellings $T^2$ test:** The multivariate test of significance namely Hotellings $T^2$ test to examine the equality of mean vectors indicating the different characteristics of performance are equal.

**iii. Students t-test:** To examine whether the mean values of the selected characteristics differ between private and public sector cement companies.
II. Ratio Analysis

Ratio Analysis is one of the techniques of financial analysis where ratios are used as a yard stick for evaluating the financial condition and performance of a firm. Analysis and interpretation of various accounting ratios gives a skilled and experienced analyst a better understanding of the financial condition and performance of the firm that what we could have obtained only through a perusal of financial statements. Ratio analysis is regarded as one of the best tools of analysis and comparing the time series accounting data of different firms. That is why it has been extensively used in present study. Various ratios are computed in order to analyse the profitability, liquidity, short-term and long-term financial strength and its various components have been explained at the relevant places in different chapters. However, in this study the use of ratios has not been made in the course of analysis directly. To make the analysis and interpretations more precise and accurate, the values of mean, CV have been computed from the ratios.

III. Model used

To analyse the financial performance of selected cement companies, the following models are used.

i. Economic Value Added (EVA)

EVA is the difference between the firms’ Net Operating Profit After Tax (NOPAT) and the shareholder’s expectations, which is the capital charge for both debt and equity, that is Over all cost of capital, operation defined
EVA = Net Operating Profit After Tax (NOPAT) – Capital charges

Capital charges = Weighted Average Cost of Capital x capital employed

Weighted Average cost of capital = Weighted cost of equity (Ke) + Weighted cost of debt(Kd).

**ii. Market Value Added (MVA)**

The market Value Added is the excess of market value over the investors’ capital. It is calculated as follows:

\[ \text{MVA} = \text{Economic Market Value Added} - \text{Economic Book Value Added} \]

Annual average market value of equity share has been calculated by taking the monthly closing prices of share.

\[ \text{Economic book Value Added} = (\text{Face Value of Equity} + \text{Long-term Loans} + \text{Reserves and Surplus}) \]

**iii. Altman’s Multiple Discriminant Analysis Model (Z Score Analysis)**

Altman’s Multiple Discriminant Analysis Model has been attempted to identify the cause of deteriorating performance of the firms.

The formula used to evaluate the ‘Z’ score analysis as established by Altman is:

\[ Z = 1.2X_1 + 1.4 X_2 + 3.33 X_3 + 0.64 X_4 + 1.0 X_5 \]
Where

\[ Z = \text{Discriminant Score} \]

\[ X_1 = \frac{\text{Net working capital}}{\text{Total assets}} \]

\[ X_2 = \frac{\text{Net operating profit}}{\text{net sales}} \]

\[ X_3 = \frac{\text{EBIT}}{\text{Total Assets}} \]

\[ X_4 = \frac{\text{Market value of equity}}{\text{Book value of Debt}} \]

\[ X_5 = \frac{\text{Sales}}{\text{Total Assets}} \]

It is also interesting to note that Operations Technique can be used for the various problems in Finance like working capital management, inventory management, cash management.

**iv. Miller-Orr Cash Management Model**

When the current ratio is good and cash ratio is alarming, Miller-Orr model on cash management is adopted and suggestions offered to the management on diverting excess cash in to short term investments and converting back in case the cash balance touching the lower limits.

**LIMITATIONS OF THE STUDY**

The study is subject to the following limitations:

1. The study period is restricted to the period of 10 year from 1995-96 to 2004-05.
2. This study is based on secondary data taken from the annual reports of the respective companies as such its findings depend entirely on the accuracy of such data.

3. The present study is largely based on funds flow & ratio analysis which has its own limitations

4. There are different methods to measure the financial performance of an industry. In this connection views of experts differ from one another.

5. TANTEM is not a listed company and to arrive at the market price, ‘Enterprise Valuation’ method is adopted.

6. This study has focused on only select large scale cement companies in Tamil Nadu. So, it implies that the conclusion drawn from present study could not be generalized to other plants either mini cement plants or major plants or in Tamil Nadu or in India.

**ORGANISATION OF THE THESIS**

The present study is organised into nine chapters:

The first chapter namely, “Introduction and Design of the Study” is intended to provide a preliminary idea of the contents of the thesis. It includes introduction, statement of problem, objectives and significance of the study,
sources of data, methodology, sampling design, period of study, scope of study, hypothesis of the study, frame work of analysis, limitations of the study and chapterisation.

The second chapter describes in detail “Review of Literature” focusing on cost analysis, liquidity and profitability studies done and reviews on work done on working capital analysis. Based on the detailed review, Research Gap could be established.

The third chapter concentrates on “Growth and Progress of Indian Cement Industry”. The chapter traces back as to what is cement, cement industry at the national level, sharpening the focus in to Tamil Nadu and on the select cement companies. Special features of cement industry, the problems faced by the industry and the future outlook is also traced.

The fourth chapter focuses on the technical aspect of “Cost Structure Analysis”. It deals with various vital aspects of costing relating it to the revenue. The various costing parameters include raw materials, power and fuel, salaries and wages, manufacturing cost, selling and distribution expenses and depreciation.

The fifth chapter deals with “Liquidity and Profitability Analysis” explaining the essence of liquidity and profitability analysis, dealing on risk-reward parameters, associating liquidity and profitability.
The sixth chapter on “Analysis of Working Capital” dwells on various working capital ratios, changes in working capital and funds flow operations.

The seventh chapter explains on “Analysis of Financials of Private Sector Companies with Government owned Company”. It deals with comparison of various vital ratios as private sector companies bundled together with the government company and analyzing every parameter of each private company individually with government company.

The eighth chapter is devoted to “Z-Score Analysis, Economic Value Addition and Market Value Addition”. This chapter analyses whether the select cement companies are in the healthy zone or not and whether every company’s shareholders’ wealth have got enriched or eroded.

The ninth chapter, “Summary of Findings, Suggestions and Conclusions”, is devoted to consolidate the information and observations found in the earlier chapters. A few suggestions are also made for the better performance of the cement companies in future.
A STUDY ON FINANCIAL MANAGEMENT
OF CEMENT INDUSTRY IN TAMIL NADU

Synopsis Submitted to the Madurai Kamaraj University for the
Award of the Degree of Doctor of Philosophy in
COMMERCE

Researcher
A.R. SOMASUNDARAM

Supervisor
Dr. K. ALAGAR

DEPARTMENT OF COMMERCE
Centre for Higher Research
YADAVA COLLEGE (Autonomous)
(Accredited with ‘A’ Grade by NAAC)
MADURAI-625 014
TAMIL NADU
INDIA

OCTOBER 2010