INTRODUCTION AND DESIGN OF THE STUDY

1.1 Introduction

Cement is one of the most important materials which play an integral role in the growth & development of an economy. It is an indispensable compound consisting mainly of silicates and aluminates of calcium formed out of calcium oxide which is then used to create an amorphous form. The demand for cement being derived from the industrial, housing, infrastructure, and government projects, cement is considered to be one of the key building materials and is used worldwide for all construction works such as housing and industrial construction, as well as for creation of infrastructures like ports, roads, power plants, etc. The cement industry is one of the vital industries for economic development in a country. The total utilization of cement in a year is used as an indicator of economic growth. Here, it can be said that cement is a significant contributor to the Government exchequer and a pillar of overall planned development of an economy.

1.2 Nature of Indian Cement Industry

Cement production commenced in 1922 but the first plant commenced its production in the year 1914 in Porbander, Gujarat. The industry has since been growing at a steady pace. It is in the initial stage.
Chapter - I
Introduction and Design of the Study

1.1 Introduction

Cement is one of the core industries which plays a vital role in the growth and development of a nation. It is basically a mixture of compounds, consisting mainly of silicates and aluminates of calcium, formed out of calcium oxide, silica, aluminium oxide and iron oxide\(^1\). The demand for cement, being a derived one, depends primarily on the pace of activities in the business, financial, real estate and infrastructure sectors of the economy\(^2\). Cement is considered to be one of the basic building materials and is used worldwide for all construction works, such as housing and industrial construction, as well as for creation of infrastructures like ports, roads, power plants, etc. The cement industry is one of the vital industries for economic development in a country. The total utilization of cement in a year is used as an indicator of economic growth\(^3\). Thus, it can be said that cement is a significant contributor to the Government exchequer and a pillar of overall planned development of an economy.

1.2 Nature of Indian Cement Industry

Cement industry was originated in India when the first plant commenced its production in the year 1914 in Porbander, Gujarat. The industry has since been growing at a steady pace, but in the initial stage,

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particularly during the pre-independence, the growth had been very slow. Since indigenous production was not sufficient to meet the entire domestic demand, the Government had to control its price and distribution statutorily. Large quantities of the cement had been imported for meeting domestic requirements\(^4\). The industry was partially decontrolled in the year 1982 and this gave impetus to its pace of growth. The production capacity has increased to 219 Million Tonnes (MT) in the year 2008-09\(^5\) from 27 MT in the year 1980-81 resulting in rapid increase during these periods\(^6\).

Encouraged by the positive response of the industry to the policy liberalization in the cement industry, Government had decontrolled the industry fully on 1\(^{st}\) March 1989. With the industrial policy statement made by the Government on 24\(^{th}\) July 1991, the cement industry stands delicensed. It has also been listed as a priority industry in schedule III of the industrial policy statement, making it eligible for automatic approval for foreign investment up to 51 percent and also for technical collaboration on normal terms of payment for royalty and lump sum know-how fee\(^7\).

Indian cement industry has thus been one of the pioneering industries in introducing policy reforms. After the liberalization measures and globalization of Indian economy, the cement industry has been growing rapidly at an average rate of 8 percent, except for a short period in the year 1991-92\(^8\) when the industry faced demand recession. India is now the second largest producer

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\(^4\) Raddar Datt & Sundaram K.P.M. (2007), Indian Economy, S.Chand & Company Ltd., New Delhi, p.634.


\(^6\) Cement and the Indian Economy (2003), Business Digest, August 1-15, p.4.

\(^7\) Ibid.,

of cement in the world. India has also started exporting large quantities of cement and clinker. The sector has evolved significantly in the last two decades after passing through all the phases of a typical cycle. After having gone through a period of excess supply and phase of massive capacity additions in the latter half of the previous decade, the industry is currently attained a consolidation phase with capacity additions coming up to cater to increase demand. Demand has been driven by a booming housing sector and increased activity in infrastructure, such as state and national highways. While the demand is growing at a robust pace of 8 percent to 10 percent annually, the paucity of major capacity addition is putting upwards pressure on the cement prices.

The cement industry which is growing annually at 10 percent, enhancing production, as new homes and offices are being built and keeping with the economy’s annual growth rate. In the year 2008, there was a steady growth witnessed in Indian cement industry with leading domestic players logging in impressive growth figures for the cement sector:

- Cement production of ACC has increased by 15 percent to 1.69 MT in February as against 1.47 MT in the same period last year. Dispatches have risen by 7 percent to 1.69 MT (1.44 MT).

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9 A Brochure on Cement from India (2007), CMA, Mumbai, pp.1-5.
- Ambuja Cements, another Holcim group company, has reported 7 percent rise in production to 1.47.MT (1.37 MT) in February, while dispatches went up by 9 percent to 1.48 MT (1.36 MT).

- The Adithya Birla group’s production, including Ultratech, went up by 4.14 percent at 28.28 MT (27.15 MT), while dispatches have increased to 4.02 percent 28.24 MT (27.14 MT).

- India cements have recorded a 46 percent growth in sales and posted a 99 percent growth in profit in the nine months ending December 2008.

In March 2008, India has emerged as a second largest market for cement industry after China, surpassing developed nations like USA and Japan\(^{13}\). Per capita consumption has increased from 28 kgs in the year 1980-81 to 170 kgs in the year 2007-08. In relative terms, India’s average consumption is still low and the process of catching up with international averages will drive future growth\(^{14}\).

1.3 Structure of Indian Cement Industry

In India, the large cement plants have accounted for 94.7 percent of the total installed capacity of 198.30 MT at the end of March 2008. The installed capacity has been widely distributed across 140 large cement plants during the year 2007-08. The structure of cement industry in India has been fragmented. The fragmented structure has been the result of low entry barriers in the post

\(^{13}\) http://www.ibef.org

decontrol period and the readily available technology\textsuperscript{15}. However, cement plant, being capital intensive in nature, require a capital investment of Rs.3,500 per tonne of cement which translates into an investment of Rs.3,500 millions for a plant with one million tonne capacity per annum\textsuperscript{16}.

The cement industry has witnessed substantial reorganization of capacities during the last couple of years. Some instances of the consolidation witnessed during the recent past include Gujarat Ambuja taking a stake of 14 percent in ACC, Gujarat Ambuja taking over DLF cements and Modi Cements, India Cement taking over Raasi Cements and Sri Vishnu Cements, Grasim’s acquisition of the cement business of L&T, Indian Rayon’s Cement division merging with Grasim, Grasim taking over Sri Digvijay Cements, L&T taking over Narmatha Cements, ACC taking over IDCOL etc.,

Cement industry, being highly cyclical in nature, largely depends on the economic development of the country. There has been a high degree of correlation exists between the GDP growth and the growth in cement consumption. This could be gauged from the fact that after experiencing robust growth from the years 1994 to 1996, the sector was one of the worst affected sectors due to economic slowdown from the years 1997 to 1999. The industry has registered an impressive growth during the period 1999 to 2008 which was mainly due to demand from housing sector. This accounted for 60 percent of cement consumption and the rest accounted equally between infrastructure and industry/others. As a result, huge capacity expansion led to excess capacity. However, cement prices, of late, have firmed up due to improvement in the

\textsuperscript{16} Economic Survey (2007-08), Government of India, New Delhi, p.289.
demand-supply position, increasing consolidation in the industry and the government’s thrust on infrastructure development. Cement industry, being a cyclical one, has been going through phases of ups and downs and accordingly companies’ realizations were being affected. Even in a downturn, companies sustain profitability if they are being cost effective.

Multinational cement companies have also initiated the acquisition process in the Indian cement market. Swiss cement major Holcim has picked up 14.8 percent of the promoters stake in Gujarat Ambuja Cements in January 2006. During the year 2007, Holderind Investments (Holcim Marutitus), an indirect wholly-owned subsidiary of Holcim, acquired 200 million equity shares of Gujarat Ambuja Cements Ltd at a price of Rs.105 per share from the promoters. Post-sale, the share of promoters in the company has been raised at 9 percent. Holcim has also made an open offer to acquire an additional 20 percent stake in Gujarat Ambuja Cement Ltd at Rs.90.64 per share in the year 2007. In 2008, Holcim had entered into a strategic alliance with Gujarat Ambuja Cement Ltd and acquired 67 percent controlling stake in Ambuja Cement India. Through this holding company, Holcim acquired majority shares in Ambuja Cement Eastern and a substantial stake in Associated Cement Company. Ambuja Cement India holds 34 percent share in Associated Cement Company and 97 percent share in Ambuja Cement Eastern. Halcim’s acquisition has led to the emergence of two major groups in the Indian Cement industry, that is, the Holcim-ACC- Gujarat Ambuja Cement combine and the Aditya Birla Group of Grasim industries and Ultratech Cement combine. Lafarge, the French cement major, had acquired the cement plants of Raymond and Tisco in the recent past and had installed capacity of 7 MT per
annum. In 2008, Italy based Italcementi has acquired a stake in K.K Birla promoted Zuari industries cement plant in Andhra Pradesh with a capacity of 3.4 MT per annum. Heidblberg Cement has entered into an equal joint venture with S.P Lohia group controlled Indo-Rama Cement. Heidblberg Cement has 50 percent controlling stake in Indo-Rama grinding plant which has a capacity of 0.75 million tonne per annum at Raigad in Maharashtra.

As on 31st March 2008, ACC was the largest player with a capacity increase of 1.69 MT as compared to last year. Ambuja Cement, another Holcim group company has increased production by 7 percent as compared to last year. The Adithya Birla Group’s production, including UltraTech, went up by 4.14 percent as compared to last year.

1.4 Location of the Cement Industry in India

The location of the cement industry is controlled by number of factors, namely, raw materials, coal, water, skilled labour, transport and agglomeration of economics. The most important raw material used in the cement industry is limestone which is profusely available in Madhya Pradesh, Andhra Pradesh, Rajasthan, Karnataka and Gujarat.

It was observed that the location of the cement industry has changed with the passage of time. The shift in the location of the industry was brought about by a variety of factors, such as growing demand, opening of new markets, availability of raw materials, technological developments and availability of bulk handling facilities, such as ports, development of transportation facilities, etc.
After independence, the demand for cement grew rapidly and there was a wide dispersal of the industry to many states. In the year 1951, there were 21 cement producing units, out of which 5 were in Bihar, 3 each in Gujarat and Tamil Nadu, 2 each in Andhra Pradesh, Karnataka, Madhya Pradesh and Haryana, 1 each in Rajasthan and Kerala. At present, the industry concentrates in two clusters. The first cluster consists of west and north covering the region of Kathiawar-Baroda, Madhya Pradesh-Jharkhand and the second cluster consists of Chennai-Hyderabad.

1.5 State-wise Distribution of Cement Industry

The cement plants in India have been widely distributed across the states on the basis of availability of and easy access to raw materials. The state-wise distribution of cement plants and their relative significance have been discussed hereunder:

1.5.1 Tamil Nadu

The first cement plant in India was set up in the year 1904. This company did not prove very productive. After independence, Tamil Nadu became an important cement producing state. Today, the largest cluster of cement companies has been found in Tamil Nadu in places, such as Tulukapatti, Sankaridurg, Dalmiapuram, Talaiyuthu, Madukkarai, Alangulam, Poliyur, Karur and Ariyalur. The limestone used in this region has been obtained in small quantities locally and these stones have had very large production capacities. The limestone has also obtained from the limestone deposits of Karnataka and Andhra Pradesh. Sea-shells in Tamil Nadu have also been used to manufacture cement occasionally.
1.5.2 Gujarat

In Gujarat, massive limestone deposits have been found in Broach and Kaira district. The first cement plant was established at Porbandar in the year 1912. Later on, many more plants were set up. In Gujarat, the industry enjoys the benefit of large deposits of limestone. Besides, sea-shell has also been used as raw material. The use of sea-shell as a raw material has led to the establishment of cement plant at Dwarka. Other most important plants were: Ahmedabad, Sika, Sevalia, Ramavaram, Porbandar, Veraval and Bhavnagar. Cement plants in the coastal areas of Gujarat obtains coal by sea-routes which proves much cheaper rather than the use of furnace oil as a substitute for coal.

1.5.3 Madhya Pradesh and Chhattisgarh

These states contribute about 16 percent of the total cement production in India. Large deposits of limestone are being found in Katni, Jukhehi, Maichar and Satna. Coal is being available in sufficient quantities in the region. Cement plant in Chhattisgarh was established with the supply of slag from the Bilai Steel Plant.

1.5.4 Bihar

In Bihar, limestone deposits have been found in Rohtas district. Some archaean deposits of limestone have also been found in the district of Simghlhum and Palama. Thus, the cement plants were established at Sindri, Dalmianagar, Japla, Kalyangpur, Khalari, Chaibasa and Banjari. An instance of economics of integration might be witnessed in this region. The TISCO steel plant supplies slag to the Chaibasa factory. Further, pressnud discharged from the sugar factory in Rohtas is being consumed along with limestone in an
integrated cement unit. The region has been famous for rich and abundant supply of coal with good quality. Therefore, the cement industry gets easy access to supply of coal as raw material and also as fuel.

1.5.5 Rajasthan

Extensive archaic deposits in the form of marble and dolomite limestone have been found mostly in this state. These are being found around Alwar, Nagaur, Udaipur and Kishengarh. Some tertiary limestone deposits have also been found in and around Jaisalmer. Due to the availability of raw-material, one of the first cement plants was set up at Lakheri in the year 1912-13. At present, the important cement producing centres consist of Lakheri, Sawai Madhopur, Chittogarh, Churk and Nimbersa. The plant at Sawai Madhopur is considered to be one of the largest plants in Asia.

1.5.6 Andhra Pradesh

Large limestone reserves exist in and around Cuddapah district. The deposits of Narji limestones have been found in Kurnool, Guntur and Krishna districts. Based on the raw material availability of this region, the important cement plants have been located at Guntur, Kurnool, Nalconda, Masuli Patnam, Hyderabad and Vijaywada.

1.5.7 Karnataka

Karnataka is an important cement-producing state. The limestone deposits were of the archaic age. Limestone deposits have been found in the Shimoga, Chitaldrug, Tumkur and Mysore districts. Therefore, the main cement plants established near the sources of raw material were found in places such as Bijapur, Gulbarga, North Kannada, Tumkur and Bangalore. The
cement plants at Bhadravathi uses slag as raw material. This slag has been obtained from the Visveswaraiya Iron and Steel plant.

1.6 Need for the Study

The recessionary trend in the cement industry has had its impact on the financial performance of the cement companies. Till the year 1996-97, there had been a remarkable growth in the sales turnover of companies in cement industry in India. The pre-tax profit also had shot up. However, due to low demand, recession and mounting competition, the profit margins of cement industry in India, of late, are under pressure. But, in the year 2007-08, the industry has registered a healthy and robust growth of 10 percent, in spite of a slow-down in economic growth, outperforming the manufacturing sector which grew only by 6 percent. Cement consumption in south India grew by 14 percent last year as against 9 percent in the previous year. The cement demand was further bolstered through the construction of 1700 kilometres of concrete roads under the Prime Minister’s Golden Quadrilateral Scheme. Right now, the scope for international investment in cement industry in India appears to be bright. But the operational and financial efficiencies of the companies in cement industry can be enriched through proper operational and financial performance appraisal. A restructuring plan will be essential to concentrate on three important aspects, namely, (a) business restructuring (b) corporate restructuring and (c) man-power restructuring which are the bases for all operational and financial performances in cement industry. Hence, the consistent financial performance appraisal of the companies in cement industry paves the way for its development and performance. The present study has focussed on analysing the various aspects related to the financial
performance of the cement industry in Tamil Nadu. This study will be of immense help to the society by enabling the prospective investors and other stakeholders of the cement industry in Tamil Nadu to take economic decisions. The companies in cement industry in Tamil Nadu will also be able to know their existing financial strength by this study so as to take the policy decisions relating to finance in future.

1.7 Statement of the Problem

The financial performance is an important factor which indicates the growth of any industry. True is the case of cement industry also. The financial performance of cement industry is influenced by several factors like cost, revenue and the resultant profits margin. Financial performance of cement industry can be studied with the help of many aspects, namely, financial facts, financial ratios, financial health, financial strength, utilisation of assets, etc. The financial performance can be influenced by the operational and financial efficiency of the cement industry which are related to many cost aspects and the revenue. The best indicators of the financial performance are return on assets, sales, equity and others. Thus, the problem related to the financial performance of the cement industry is interlinked to many aspects, namely, cost, revenue, capital, assets and other related variables. If the analysis made on all the aspects related to the cement industry gives a clear cut picture about the financial performance, it can be used for some policy decisions for its future development. In this connection, the researcher has analysed the performance of cement industry in Tamil Nadu on parameters such as profitability, utilisation of assets, growth of performance, financial strength, financial health and opinion of staff members of the finance department. The
researcher has also identified the nature of relationship between various aspects of financial performance in this study.

1.8 Objectives of the Study

The study has the following objectives:

i) To study the growth of cement industry in India and Tamil Nadu;

ii) To examine the short-term and long-term financial solvency, profitability and growth performance of cement industry in Tamil Nadu;

iii) To measure the impact of financial profile on the profitability of cement industry in Tamil Nadu;

iv) To measure the impact of utilisation of assets on the profitability of cement industry in Tamil Nadu;

v) To examine the short term and long term financial strengths and the overall financial health of cement industry in Tamil Nadu;

vi) To seek and analyze the opinion of staff of the finance department towards financial performance of cement industry in Tamil Nadu; and

vii) To offer suggestions for enhancement of financial performance of cement industry in Tamil Nadu.

1.9 Hypotheses

The following hypotheses were formulated to analyse the financial performance of cement industry in Tamil Nadu keeping in view the objectives of the study.
i) There is no significant variation in liquidity ratios of cement industry;

ii) There is no significant variation in activity ratios of cement industry;

iii) There is no significant variation in Debt-equity ratios of cement industry;

iv) There is no difference in variances in profit performance of cement industry;

v) Profitability does not depend on the efficient utilization of assets in cement industry; and

vi) There is no significant variation in financial strength in cement industry.

1.10 Methodology of the Study

The study has dealt with both primary data and secondary data. The secondary data were collected from the published and unpublished financial records of companies in cement industry in Tamil Nadu. The further information needed for this study was also gathered through the reports of Cement Manufactures’ Association, magazines, books, journals and web portals.

The primary data was collected through a well-structured questionnaire. The questionnaire was served to 80 staff members of the finance department involved in the function of finance planning and finance execution of cement industry in Tamil Nadu using census method. Further, extensive discussions were also held with the key finance personnel of cement industry in Tamil Nadu to collect the information about financial performance.
As Tamil Nadu has been one of the important cement producing states in India, which contributed 10.65 percent to the national share of cement production, the researcher has chosen the state for undertaking the research. The researcher has chosen the private sector cement companies on the basis of their domicile of registered office situated in Tamil Nadu. Accordingly, the following four private sector companies in cement industry in Tamil Nadu were chosen for the study using census method.

1. Chettinad Cement Corporation Limited (CCCL)
2. Dalmia Cement (Bharat) Limited (DCL)
3. India Cement Limited (ICL)
4. Madras Cement Limited (MCL)

1.11 Frame Work of Analysis

The secondary data have been organised and presented in the form of tables which consist of various financial data and ratios. Various statistical techniques, such as averages, standard deviation, variance, correlation coefficient, multiple regression, F-max test, analysis of variance, utilisation index and Altman’s ‘Z’ score analysis have been used for analysing and interpreting the secondary data.

Hartley’s F-max test model for homogeneity of variance was used to determine whether the results from the four areas of profit performance, such as Net profit margin, return on capital employed, return on assets and return on net worth make any difference or not. This model has been given hereunder:

\[ F-\text{max } [C, (n-1)] = \frac{s^2_{\text{max}}}{s^2_{\text{min}}} \]
Whereas,

\[ S^2_{\text{max}} \] – Largest sample variance

\[ S^2_{\text{min}} \] – Smallest sample variance

\( n-1 \) – Number of period in the test less one

C – Number of groups (performance variables) in the test

To study the impact of financial ratios on the financial performance of the cement industry in Tamil Nadu, the log linear multiple regression model was used. The fitted model was shown hereunder:

\[ y = a \cdot x_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} x_7^{b_7} x_8^{b_8} \cdot U \]

This was converted into log linear as,

\[ \log y = \log a + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5 \log X_5 + b_6 \log X_6 + b_7 \log X_7 + b_8 \log X_8 + U \]

Whereas,

Y – Net profit margin / Return on equity

X₁ – Current Ratio

X₂ – Quick Ratio

X₃ – Current Assets to Totals Asset Ratio

X₄ – Inventory Turnover Ratio

X₅ – Debtors Turnover Ratio

X₆ – Working Capital Turnover Ratio

X₇ – Total Assets Turnover Ratio

X₈ – Fixed Assets Turnover Ratio

b₁, b₂, ..., b₈ – Regression coefficients of predictor variables.

a – Intercept and

u – Error Term
The utilisation of current assets and fixed assets were measured to analyse the financial performance of the cement industry in Tamil Nadu. The formula applied to measure the utilisation index of current assets was given hereunder:

\[ UI_{CA} = \frac{S_t}{S_{t-1}} \times \frac{CA_{t-1}}{CA_t} \]

Whereas,

- \( UI_{CA} \) – Utilisation Index of Current Assets
- \( S_t \) – Sales Revenue at Period ‘t’
- \( S_{t-1} \) – Sales Revenue at Period ‘t-1’
- \( CA_t \) – Current Assets at ‘t’ Period
- \( CA_{t-1} \) – Current Assets at ‘t-1’ Period

Similarly, the utilisation index of fixed assets was also calculated by applying the following formula.

\[ UI_{FA} = \frac{S_t}{S_{t-1}} \times \frac{FA_{t-1}}{FA_t} \]

Whereas,

- \( UI_{FA} \) – Utilisation Index of Fixed Assets
- \( FA_t \) – Fixed Assets at ‘t’ Period
- \( FA_{t-1} \) – Sales Revenue at ‘t-1’ Period

The operating profit index and return on capital employed index were also calculated by applying the following formula:

\[ OPI = \frac{S_{t-1}}{S_t} \times \frac{OP_t}{OP_{t-1}} \]
ROCEI = \frac{C_{t-1}}{C_t} \times \frac{OP_t}{OP_{t-1}}

Whereas,

OPI – Operating Profit Index
ROCEI – Return on Capital Employed Index
OP – Operating Profit
C – Capital Employed

The multiple-regression model was applied to analyse the impact of Utilisation Index of current assets and fixed assets on the Operating Profit Index. The fitted model was shown hereunder:

\[ y = a + b_1 x_1 + b_2 x_2 \]

Whereas,

\[ X_1 \] – Utilisation Index of Current Assets
\[ X_2 \] – Utilisation Index of Fixed Assets
\[ y \] – Operating Profit Index
\[ b_1, b_2 \] – Regression Co-efficient and
\[ a \] – Intercept

The financial health of the cement companies were measured with the help of Altman’s Z scoring which was given hereunder:

\[ Z = 1.2 x_1 + 1.4 x_2 + 3.3 x_3 + 0.6 x_4 + 0.99 x_5 \]

Whereas,

\[ X_1 \] – Working Capital / Total Assets
\[ X_2 \] – Reserves and Surplus / Total Assets
\[ X_3 \] – Earnings Before Interest and Tax / Total Assets
\[ X_4 \] – Equity Capital / Debt
\[ X_5 \] – Sales / Total Assets; and
\[ Z \] – Index
Altman has classified the companies into three different zones through his Z Scores model. These were summarised hereunder:

- Below Z score of 1.86, the company is considered to be in bankruptcy. Its failure is certain and is likely to fall which would occur probably within a period of two years.

- If a company has ‘Z’ score ranges between 1.86 and 2.66, its financial viability is considered to be healthy. The failure in this situation is uncertain to predict.

- If a company has ‘Z’ score of above 2.66, the company is in too healthy zone. Its financial health is very viable and is not likely to fall.

1.12 Period of the Study

The present study covered a period of fifteen years from 1993-94 to 2007-08. The financial data for these years were compiled from the annual reports of respective companies in cement industry in Tamil Nadu. The primary data for the present study was collected during three months from October, 2008 to December, 2008.
1.13 Scope of the Study

The present study was confined to and highlights the financial performance of the cement industry in Tamil Nadu through facts and figures of published financial statements. The financial performance of cement industry was evaluated on parameters, such as profitability, utilisation of assets, growth of performance, financial strength, financial health and opinion of staff members of the finance department of cement industry. The present study has also identified the nature of relationship between the various aspects of financial performance of cement industry.

1.14 Limitations of the study

i) The present study was largely based on ratio analysis which has its inherent limitations.

ii) As researcher being an external analyst, the scope of access to internal data related to the financial performance of cement industry was limited. Hence, the results of this research may not hold good water.

iii) Tamil Nadu Cement Corporation Limited (TANCEM) has been one of the cement companies registered and operating in Tamil Nadu. As this company has been subjected to government bureaucracy rather than the other chosen companies in cement industry in Tamil Nadu, the researcher has not included this company for the present study.

iv) The staff members of the finance department of cement industry in Tamil Nadu have provided information which was purely based on their own perception. So, the accuracy and reliability of such information may sometimes prove to be counterproductive.
1.15 Chapter Scheme

Chapter I deals with the nature of Indian cement industry, location of the cement industry, need for the study, statement of the problem, objectives of the study, selection of the companies in cement industry, sources of data, methodology and framework of analysis, period of study, scope of the study and limitations of the study.

Chapter II deals with the review of earlier studies.

Chapter III deals with an overview of cement industry in India and Tamil Nadu.

Chapter IV deals with the short-term, long-term financial solvency and growth of cement industry in Tamil Nadu.

Chapter V deals with the profitability and utilization of assets in cement industry in Tamil Nadu.

Chapter VI deals with the financial strength and financial health of cement industry in Tamil Nadu, including opinion of the staff members of the finance department towards financial performance.

Chapter VII deals with the findings, suggestions, conclusion and scope for further research.