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A THESIS SUBMITTED TO THE SAURASHTRA UNIVERSITY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN ACCOUNTANCY UNDER THE FACULTY OF COMMERCE,

"A Comparative Analysis of Profitability Vis-A-Vis Liquidity Performance in Cement Industry of India."

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CERTIFICATE

This is to certify that the thesis titled *A COMPARATIVE ANALYSIS OF PROFITABILITY VIS-A-VIS LIQUIDITY PERFORMANCE IN CEMENT INDUSTRY OF INDIA* Submitted by RASIK N.BAVARIA for the award of the Degree of *DOCTOR OF PHILOSOPHY* in Accountancy under the Faculty of Commerce is based on the research work carried out by him under my guidance and supervision. To the best of my knowledge and belief it has not been submitted for any other degree or diploma any where.

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DECLARATION

I hereby declare that the thesis I am submitting on the topic, *A COMPARATIVE ANALYSIS OF PROFITABILITY VIS-A-VIS LIQUIDITY PERFORMANCE IN CEMENT INDUSTRY OF INDIA*, for award of the Degree of Doctor of Philosophy in Accountancy under the Faculty of Commerce is based on the research work carried out by me. No degree or diploma has been conferred upon me before, either by this or by any other University.

(RASIK N. BAVARIA)

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Preface

Telecommunication, petroleum, coal, fertilizers, iron, steel and cement etc. are the key infrastructure sectors of India. Cement industry is also plays a significant role, in the rapid growth and development of a country, because cement is a pre-requisite of all construction activities. Cement is used in housing, dams, bridges, industrial construction, roads, etc. so cement is basic material, which is used in all types of constructions.

Before independence and till past three decades, the progress of cement industry was insignificant. But today India is one of the top among the cement producing countries, it can be possible due to "Fully Decontrol" declared by the Government in March 1989.

The first ever cement factory was established in the Gujarat state at "PORBANDAR" Gujarat can be proud of being the pioneer in the cement industry in the country.

The title of the subject of this study is "A *Comparative Analysis of profitability vis-a vis liquidity performance in cement industry of India.*"

There are about 125 such companies which have been working in India, researcher has selected 17 Companies as the sample for this study. The Present study is made for eight years from 1995-1996 to 2002-2003.For the purpose of analyses, all the selected companies have been classified into five regions, The Eastern region, The Western region, The Northern region, The Southern region, and Rest of the regions. Allocation of the state in regions has been made according to **CMA** criteria. Companies have been classified in to various regions according to the location of plant in the state. Those companies plant have been located in the more than one region they have put in   rest of region.

The main source of data used for the study is secondary, drawn from the Annual Profit & Loss Accounts and Balance Sheet figures as found in Annual Reports of the selected units. The other Data Source is P*roweSS database & Capitalline* software from Mumbai and opinions expressed in Commercial Journals, Magazines, News Papers, Accounting Literature, various Journals on

Cement viz. Cement Industry Annual Review, World Cement, Cement abstracts etc. have been also used in this study.

First of all I convey my prostration to **GOD GANPATI**, who helped me a lot to complete my research work successfully. Without his blessing I could not have completed my research work.

I express my sincere thanks and gratitude to **Dr. PRATAPSINH L. CHAUHAN** Professor & Head, Department of Business Management, Saurashtra University Rajkot, who has provided me remarkable and meticulous guidance in my research work from the beginning to the end. I am grateful to the honourable and dignified principal **shri R. M. FULETRA,** who is a source to inspiration of my research work.

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Last but not least, my wife **KRUTI (Prof. K.M.Dalsania) And my kids- SETU & DEEP** have provided me an opportunity of complete co-operation and freedom. So how can I forget to express my feeling of thanking them?

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CHAPTER 1

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(1.1) INTRODUCTION :-

Telecommunication, petroleum, coal, fertilizer, iron, steel and cement etc. are the key infrastructure sectors of India. Cement industry is also plays a significant role, in the rapid growth and development of a country because cement is a fundamental requirement of all constructions activities. Cement is used in housing, dams, bridges, industrial construction, roads etc, so cement is basic material which is used in all types of constructions.

In the growth of Indian manufacturing industries, egalitarian considerations of a nation, building objectives have had limited attraction as objectives for industrialization. It was mainly the profit-centre that have determine their proliferation and continues to do so even after intendance, expect for what the public sector has been doing but not with much consideration for productivity or profitability.

These observations apply not only in jute and textiles or iron and steel, but also in cement, automobiles, sugar and even perhaps the paper industries, particularly in the respect of the private sector leviathan.

The impact of economic factors like the supply of raw materials, cost of labour, cost of infrastructure and economic of location have all determine the growth and development of Indian industries but one major factor has always been the profit incentive.

In olden days, various types of building materials were used for construction of public historical and religious buildings sand, stone and in the special case; marbles were used for this purpose. The house of ordinary citizens were usually made of mud and thin bricks. In few cases lime and pazzolona were used for getting beautiful finishing for the interior surface. There were very good builders and mesons who have created beautiful & excellent temples, buildings and bathing ghats thousand of years ago, still they are famous for their work and shape.

However, gradually cement and new types of material had developed in Europe. In 1824 an English man Joseph Aspadin, patented on artificial made by calcinations of an argillaceous limestone known as Portland cement. Because concrete made from it resembled a famous building stone obtained from the ISLE of Portland near England. This was the beginning of Portland cement industry as it is known today.

Cement is a powdered material with water forms a paste that hardens slowly. It is made by sintering a mixture of various raw materials. The main raw material composed in the mixture is calcium carbonates as limestone and other alumina, silicates as clay or shale. During the sintering process chemical reaction takes place, produces nodules, called a clinkers which consists of calcium silicates and aluminates when the clinker is pulverized with a small amount of gypsum as a reader the resulting powder is called Portland cement.

Cement is basic material for all types of construction works and it is widely used in construction from smallest building to largest structures like dams, irrigation works, bridge, industrial complex etc. In short, it can be said that cement as well as steel are sinequa-non for that development of construction activities in the country.

[1.2] DEFINITION OF CEMENT:

Cement is a hydraulic made of finely ground nonmetallic, inorganic material when mixed with water it forms a paste that sets and hardens by hydration which retains its strength and stability even under water.

Cement is produced by grinding and mixing of argilaceous and calcareous materials like clay and limestone and then burning the mix at very high temperature (approx 1450 c) for calcination.

- The calcineal product is known as clinker.
- The clinker is cooled and small quantity of gypsum addled which is finally grounded.

[1.3] TYPES OF CEMENT:

- Ordinary Portland cement (O.P.C.)
- Portland pazzolona cement (P.P.C.)
- Special cement

(I) ORDINARY PORTLAND CEMENT

This type of cement gives enough comprehensive strength after soaking in water for 3 days, 7days and 28 days. This is suitable for all types of modern civil engineering constructions.

TABLE : 1.1

CHEMICAL COMPOSITION OF ORDINARY PORTLAND CEMENT

Sr. No	Particulars.	Chemical Formula	Avg. %	Range
1	Lime	-Cao	63	62 to 67
2	silaca	SiO_2	22	17 to 25
3	alumina	Al_2O_3	05	03 to 08
4	Calcium Sulphate	$CaSO_4$	03	03 to 04
5	Iron Oxide	Fe_2O_3	03	03 to 04
6	Magnesia	Mgo	02	0.1 to 03
7	Salphur	SO_3	01	01 to 03
8	Alkalies		01	0.2 to 01
			100	---

(II) PORTLAND POZZOLANA CEMENT:

It is grayish in colour and made by grinding of limestone and clay. Burning of limestone and clay at very high temperature and cooling the resultant product is called clinker, grinding the clinker with of gypsum in ball mill to a finally ground powder. This is known as Portland cement. This cement is produced by adding 10 to 25 % pozzolanic materials to the opc clinker then grinding together.

(III) SPECIAL CEMENT:

There are six Types of special cement the types are:

(1) HYDROPHOBIC CEMENT :

It is obtained by adding water repllant firm forming substance such as stearic acid and oleic acid by grinding Portland cement clinker. This type of cement is reduces wetting ability of cement grains. Hence it imparts more time for mixing, transporting, compacting & finishing etc.

(2) LOW HEAT CEMENT :

This type of cement is used for larger mass concrete works in dams, Piers etc. It is necessary to have a much lower heat of hydration, so that chances of developing construction cracks are minimised. This can be done either by adding some pozzolamic material and granulated blast furnace slage to the cement while grinding by changing the chemical composition of the cement.

(3) RAPID HARDWEARING CEMENT:

This type of Portland cement gives the desired strength in 3.7 and 28 days if soaked in water. But sometimes cement is required high strength in 24 hours as is given by ordinary Portland cement at 3 days.   This type of cement is called rapid hardening cement or high early strengthening cement. This sets and hardens much quickly than ordinary Portland cement.

(4) QUICK SETTING CEMENT.

The % of gypsum added reduced, which accelerate the setting action. The setting action of this cement is very fast. This type of cement is used for the underwater constructions.

(5) SULPHATE RESISTANCE CEMENT:

This cement is prone is liable for deterioration under sulphate environments. Thus a Portland cement, which less than 5% of C_3A is highly resistant to sulphatic action. This cement is known as *sulphate resistant cement.* This cement used for sea shore structure canal lining, culverts etc.

(6) WHITE CEMENT:

Portland cement is grayish in colour. The colour is due to complex formed with iron oxide present in the cement. The proportion of Iron oxide in the cement is reduced to less than 0.4% the colour of the cement becomes white. Iron oxide present in cement raw mix helps in improving the burning conditions of cement clinker. White cement is generally used for decorative works only in view of its high cost.

[1.4.] <u>SALIENT CHARACTERISTICS OF CEMENT:</u>

1.   PHYSICAL CHARACTERISTICS :

(A) SETTING TIME:

The time interval for which the cement products remains plastic condition is known as the setting time. The setting of cement can be understand through initial setting and final setting time.

(B) INITIAL SETTING:

The time elapsed between the moment that the water is added to the cement to that paste starts loosing its plasticity.

(C) FINAL SETTING:

The time elapsed between the movement the water is added to the cement and time when the paste has completely lost it's plasticity and has attained sufficient firmness to resist certain definite pressure.

2 to 4 % Gypsum is added during grinding of clinker to provide sufficient time for workability. If Gypsum is not added cement sets quickly.

1.*   As per IS : 269, 8112, 12269, 1489
        Initial setting: Min. 30 minute
        Final setting: Max. 600 minute. *

2.   STRENGTH:

Strength of cement is not measured on neat cement paste because of cement is carried out with standard sand cement mortar. It is very important characteristic of cement.

Strength is measured after 3 days, 7 days and 28 days for OPC is Kg/Cm or Mpa.

As per Is : 269 :1989 Is: 8112: 1989 Is: 12269 :1987 IS: 1489: 1991.

Strength	33 G OPC	43 G OPC	53 G OPC	PPC
3 days	16 Mpa	23 Mpa	27 Mpa	16Mpa
7 days	22 Mpa	33 Mpa	37 Mpa	22Mpa
28 days	33 Mpa	43 Mpa	53 Mpa	33Mpa

I Mpa = 10 Kg/Cm2.

(Source: Saurashtra cement Ltd. Technical service department publication)

3. SOUNDLESS:

It is an appreciable change of the volume and there by loosening or even destroying of the hardened cement structure. It takes a long time to complete the reaction process.

Unsoundness in cement is due to the presence of excess lime which can be tasted by Le Chatelier soundless test. If the magnesia content is more than 3% the cement is to be cheaked for soundness by autoclave test.

Excess Gypsum (more than 2 to 3%) can also cause the expansion and distraction of set cement structure.

It can be due to excess of lime, magnesia, excess sulphate.

As per Is : 269, 8112, 12269, 1489.

Auto clave Expansion: Max. 0.8% for free magnesia content. Le Chatelier Expansion: Max 10 mm for free lime content.

4.   FINENESS:

It is measure by how fine the cement is grounded. It shows the surface area. It is important for setting and strength. Higher the fineness, strength and early setting achieved.

As per Is: 269 (OPC 33G), 8112 (OPC 43G), 12269 (OPC 53G) Specified: finesse > 225 M_2/Kg

As per Is: 1489 (PPC)
Specified: fineness > 300 M_2/Kg.

5. *STANDARD CONSISTENCY:*

It is measure by water required for 33 mm to 35 mm penitration of needle or plunger in vicat apparatus.

It is require for all further test of cement i.e. setting test, soundness test, and strength test.

(1.5). GRADE OF CEMENT :

Grade of cement indicates the minimum compressive strength at the age of 28 days in (Mpa) as per the specifications of Bureau of Indian standards *i.e*. for 43 G. OPC cement must give min. 43 Mpa compressive strength. There are mainly three grade cement available in market i.e. 33 G, 43 G, 53 G.

It is observed and well recommended that the 43 G, OPC is very much suitable and sufficient for general construction work like brick work, plastering, and RCC structures.

53 grades is mainly recommended to use for pre cast and prestressed civil works like grills, pipes, poles, railway slippers, hollow or solid bricks, concrete road. High early strength is achieved due to higher c_3s content. It imparts

high heat of hydration so careful & extensive curing after, construction is required.

It is fact that higher grade cement more c_3s than c_2s.
C_3s produces more heat and ca $(OH)_2$ (Calcium Hydroxide) which is not desirable product in mass concrete because it is soluble in water and get leached out of concrete making concrete porous and thus reduces the durability.

*   Reaction of C$_3$S with water is as under :
$2 (3\ CaO, SiO_2) + 6\ H_2O \rightarrow 3Cao.2SiO_2.3H_2O + 3Ca(OH)_2$
$2C_3S + 6H \rightarrow C_3S_2H_3 + 3Ca(OH)$
$(100) + (24) \rightarrow (75) + (49)$
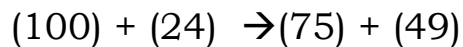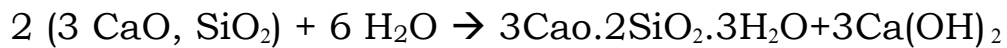
*   Reaction of C$_2$S with water is as under:
As per molecular formula it is evident the more $C_3S_2H_3$ and less Ca $(OH)_2$ is formed when C_2S reacts with water. This is more desirable product which increases durability. The product of C_3S will give more comprehensive strength but less quantity of final product as compared to C_2S.

(1.*6*). *PROFILE OF THE CEMENT INDUSTRY IN THE WORLD.*

The record of changes in man and nations is called **History.** The past few decades were just one of these momentous time which has changed the world. In this fast development of the world, the revolutions in the geographical, political and economic area were achieved and new innovations, and alignments were brings made and remade day-by-day and year-by-year.

Many years ago, various types of building materials were used for construction of public and religious building are send, mortar, brick, lime, gypsum, and in a special case marbles. The house of ordinary citizens were usually made of mud and that same times of special type of thin bricks backed by means of woodfire. In few cases lime and pazzolona were used for getting beautiful finishing for the interior surface. There were very skilled builders and mason who have created temples, building and bathing ghats, thousand of years ago still, testifying to the high standards of architectural design and construction in ancient India.

The story of the invention of Portland cement is not easy to disent angle. However slowly and gradually, cement and new types of material developed in Europe. James

frost patented cement in 1811 and established works at swanscomde, the first in the London district. However the usual contribution to aspedin's first patent is dated 21st Oct. 1924. He patented artificial cement made by calcination of an argillaceous limestone which is known as Portland cement because concrete made from it resembled a famous building stone obtained from the island at Portland near England. This was the beginning of Portland cement industry.

Cement is a powered material with water forms a paste that hardens slowly. Sintering a mixture of various raw materials makes it. The main raw material composed in the mixture is calcium carbonate as limestone and other eliminates as clay or shale. During the sintering process reaction takes place, produce, noodles, called clinkers which consists of calcium silicates and alminates, when the clinker is pulverized with a small amount of gypsum as reader the resulting powder is called Portland cement.

Cement is a basic material, which is used in all types of construction activities, industrial construction, housing, dams, bridges etc. The cement industry, therefore, plays a significant role in the economic development and it is considered as one of the core sectors of the economy.

(1.7) PROFILE OF THE CEMENT INDUSTRY IN INDIA:-

Cement industry is one of the key industries in India. It plays a dominant role in the national economy. Form the point of view of economic development of the country, Cement industry ranks second very next to the Iron and steel industry. Cement is indispensable in building and construction works. The production and consumption of cement to a large extent, indicates a country's progress. In a developing country like India the need for a well established cement industry is of paramount importance.

(1) CEMENT PRODUCTION IN INDIA:

Following China, Japan and the US, India is the fourth largest cement producing country in the world. In 1996 around 115 large cement plant including 57 cement companies and about 300 small plants produced 76.2 million tones cement per annum. Ownership is mostly private (85% installed capacity) and centralized for the large plants with four production houses controlling most of the units. This has lead to financial and administrative integration of different factories installed capacity increased considerably between 1970 to 1996, particularly in the last few years following complete deregulation of the cement sector which in the two decade

period from 1970 to 1990 total installed capacity rose by around 47 million tones from 17 million tones to 64 million tones, within only 6 years between 1990 and 1996 it increased by another 41 million tones to 105 million tones of installed capacity.

Production and installed capacity of small & large cement plants:

Production, however, did not increase accordingly due to high frequency of power failures, shortage of coal inadequate availability of wagons for rail transportation, limited availability of furnace oil etc. capacity utilization decreased steadily from as high as 90% in 1978 to a low paint of 67% in 1980-81. Following policy changes toward deregulation in the early and late 1980s capacity utilization reemployed to 82% in 1991-92, yet, since then it has again shown a decreasing trend to 72% in 1996-97. Figure 1.1 shows installed capacity and production of large as well as small plants. Appendix a gives production, capacity utilization from 1970-96 for India as a whole and table 1.2 region for 1995-96.

TABLE : 1.2

Region wise cement production capacity, and capacity utilization (million tones). Year 1995-96

Region	Capacity	Production	Capacity Utilization (%)
North	18.3	12.1	66
East	7.3	4.6	63
West	38.6	25.9	67
South	23.9	21.7	91
All India	88.2	64.4	73

Source Karwa (1998)

GRAPH No.1.1

Region wise production 1995-1996
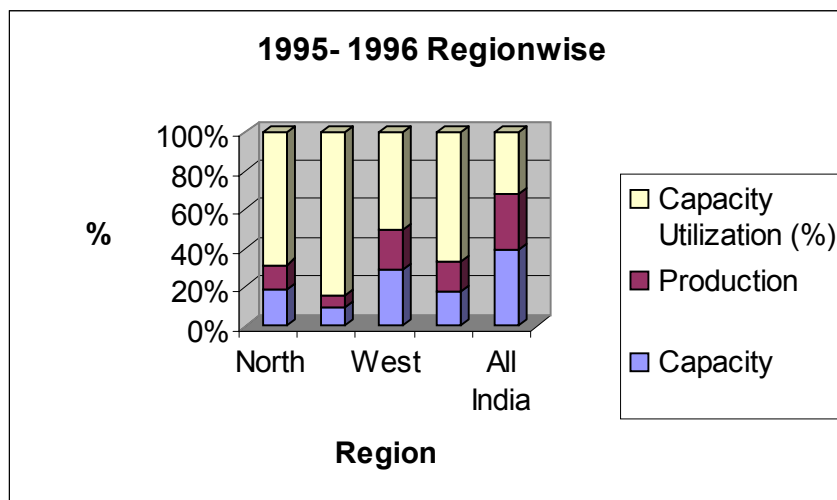
The viability of the location plays the major role in the economics of cement manufacturing. It is determined by the factors such as proxity to raw materials, limestone,

coal, distance of market areas as well as availability of continuous power supply. Proxity to limestone deposit contributes considerably to pushing down cots in transportation of heavy limestone. If units are located close enough to limestone resources, trucks can be used to move limestone over the short distance instead of relying on scarce railway capacity.

The proximity of coal deposits continues another important factor in cement manufacturing. Generally, coal is transported by railway throughout the country. Coal distribution and coal prices are strictly controlled by the Government. Although coal deposits are located all over the country constraints in availability of wagons for railway transportation have led to major shortfalls in the amount of coal received against the quota assigned to the cement industry for the year 1973, Chakravarty (1989) computed bases in cement production due to coal shortages of up 37% however, they were considerably lower at 10% in 1981 and have since steadily decreased in 1987, coal shortage accounted for only 0.4% of production losses.

In order to reduce transportation as well as capital costs, to increase regional development and to make use of smaller limestone deposits many small and mini cement

plants with a capacity of up to 650 tones per day were setup in dispersed location in India. As seen in figure 1.2, construction of such plants began in the early 1980s and amounted to 180 mini cement plants in 1992 together producing 3 mt. (about 6% of total cement production) and 311 plants producing 5 mt (7.3/% of total cement) in 1996.

Despite of the advantages, there were several drawbacks associated with the setting up of units in dispersed areas, mainly due to increased distance to market areas other than the local markets limit in transportation capacity, particularly in rail transport, constrained the storage capacity (silos) at the production site producers were often forced to cut back cement production. Only inrecent year Government finally allowed the cement industry to purchase and own rail wagons to overcome these problems.

Demand for cement has been growing at rates of up 10% p.a. in the past. While in 1987 demand was about 37 million tonnes (mt), it reached 53 mt. in 1993 and further increased to more than 65 mt. in 1995. Providing a main input for construction cement consumption is highly dependent on actives in the construction sector which are in turn dependent on Governmental and private

investment in infrastructure and buildings. Appendix 13 provides gross value added in the construction production. Therefore, imports lode to fill the balance. Since 1987 lower cement production has increased and India reached self Sufficiency. More recently exports, particularly to neighboring countries, have been increasing.

At present the Indian cement industry produces 13 different varieties of cement employing three different process types. Amongst varieties, Ordinary Portland cement (OPC), Portland pazoolona cement (PPC) and Portland slag cement (PSC) constitute the major shares accounting for almost 99% in total production. Ordinary Portland cement is most commonly used in India. It holds a share of about 70% in total production PPC of only 11%. Generally, the two varieties, PSC and OPC, used for same purpose, white PPC cannot used for prestressed and high strength concrete as used in bridge and airports.

Cement is produced using the wet, the semi-dry, and the dry processes. The share of the wet process in total installed capacity has declined from over 90% in 1960 to only 12% in 1996 (Table 1.3). The wet process has been substituted by the significantly less energy using dry process over time. Following the oil price shocks the shift

technology mix has become substantial. The dry process nowadays accounts for the majority (86%) of India's cement production. Due to new, even more efficient technologies, the wet process is expected to be completely pushed out in the near future.

The semi-dry process never played an important role in the cement production of India. Its share in total installed cement capacity has been small over time. It currently accounts for 2% of total production mini cement plant usually use vertical shaft kilns for cement production.

TABLE : 1.3

Technology mix (1%) for cement production in India.

Technology	1960	1970	1980	1993	1997
Dry process	1.1%	21.5	32.7	82.0	86.0
Semi dry process	4.5	9.0	5.7	2.0	2.0
wet process	94.4	69.5	61.6	16.0	12.0

Source: Teri, 1994; Karwa (1998)

(2) GOVERNMENT POLICY:

The Indian cement sector has been under strict Government control for almost the whole period since independence in 1947. Government intervention took place both directly and indirectly. Direct intervention happened in the form of Government control over production capacity and distribution of cement, while indirect intervention was in the form of price control.

Table 1.4 provides a summary overview of major policy changes between 1951 and today. Three significant periods can be distinguished; first, the period of total control where both prices and distribution of output were strictly regulated by the Government, second the period of partical decontrol staring in February 1982 and finally the period since 1989 when all price and distribution controls were withdrawn.

The price and distribution control system on cement, implemented after liberalization in 1956, aimed at ensuring fair prices to producers and consumers all over the country. Thus reducing regional imbalance, and at reaching self – sufficiency with in as short time horizon. Because of slow growth in capacity expansion and continued cost increases, the government had to increase

the fix price several times. However, these price increases as well as financial incentives (tax returns on capital) to on hence investment showed little to no effect on the industry. IN 1977, higher prices were allowed for cement produced by new plants of major expansions of existing plants. Due to sustained slow development the uniform price imposed by the government was substituted by a three tier price system in 1979, different prices were assigned to cement produced in low, medium and high cost plants.

However, further increases of input costs (including these that likewise regulated by the government such as fuel and power cases as well as wages.) cound not be neutralized adequately and in time. Thus, the controlled price did not reflect the true economic cost and profit margins dwindled increasingly deterring essential investments in capacity and production expansion. The permit system introduced by 14 states and union territories in the 1970, comprised direct control over public distribution of cement to ensure fair supplies to priority sectors, discourage consumption of cement for non priority and essential purpose. Furthermore, it was thought to facilitate cement availability to small users and to eliminate block marketing. However, the system resulted in artificial shortages, extensive black marketing

and corruption in the civil supply department of the government.

The system of price control was accompanied by a policy of freight pooling. The price control fixed a uniform price according to estimated production costs of which cement was required to be sold all over the country. This prices contained a freight component that was averaged over the country as a whole. If the actual freight component experienced by to pass on the pool a sum representing the difference between the uniform price freight component and the fright cotter incurred by them. On the other hand, if the actual freight incidence was lighter than the freight elements accounted for the uniform price, producers were reimbursed the difference.

The freight pooling system promoted equal industrial development all over the country. It supported regional dissemination and ensured that cement was available at equal price in any part of the country yet, it also implied that producers had no incentive in locating production such that transportation costs of cement would be minimized. Market distance becomes a less important issue. As a result of non optimal location of industries, average costs of production as well as demand for scare railway capacity increased.

TABLE :1.4

Overview of polices Regarding the cement Ind. (1973-1993)

Period	Policy	Specifics	Notes
1951-	Price and Distribution Control	--	--
April 1975	--	14% tax return on capital employed	Did not show any noticeable impact on industry.
19777	--	12% post tax return on net worth	Showed effect on output
Until 1978	--	Uniform retention price	--
May 1979	--	Three tier price system (different retention prices for low, medium and high-cost plants)	--
February 1982	Partial decontrol	Levy obligation, uniform retention price	Retention price slightly 10 per for PPC than OPC, specific mini units exempted for price and distribution control.

1982-1988	--	Progressive decrease in levy and increase in retention price	See table below
Since 1986	--	Rebate on excise duty for new plants.	--
March 1989	Withdrawal of all price and distribution control.	--	--
Until 1984	Freight pooling	--	No freight pooling for non leavy cement, 1982
Until 1991	Industrial licensing	--	--

Source : Report of the Task Force on Cement

Industry, Gov. of India, 1991.

On account of these difficulties in the cement industry the government of India introduced a system of particle decontrol in 1982. A levy quota of 66.6% for sales to government and small house builders was imposed on existing until while for new sick units a lower quota at 50% was established. Levy cement was fined uniformly for PPC and slightly lower for PPC. The balance of 33.4%

could be sold in the free open market to general consumers. A celling price was set for sales in the open market in order to protect consumers from unreasonable light-pricing. Under the system of partial decontrol non levy cement was no longer covered by freight pooling. Further more, specific mini cement units were completely tread from price and distributor controls. Although, over all profitability increased substantially immediately after the introduction of partial decontrol, profits obtained through non levy sales decreased with greater availability of cement in the market and continuously rising input costs.

To sustain an accelerating course of government subsequently introduced changes in levy obligations and retention prices. At four paints in time the government simultaneously reduced levy quotas and increased retention prices. As a result late 1988 the levy quota was as low as 30% four units established before 1982 and the retention price had increased substantially. In addition during 1982 and 1987 the ceiling on non-levy price was increased occasionally. In 1987, the cement manufacture association and the government decided that there was no further need for a maximum price celling finally, in 1989 the industry was considered to prepared for free market competition and all price and distribution controls were

withdrawn. The system of freight pooling was abandoned a subsidy scheme to ensure availability of cement at reasonable price. By removing all controls in the cement sector, the government looped to accelerate growth and induces further modernization and expansion investments.

(3) TOTAL FACTOR PRODUCTIVITY :

Total factor productivity relates the input factors capital and labour to gross value added. It measures the growth in gross value added (GVA) that can not be explained by the growth of a weighted combination of the two inputs capital and labour.

Figure 1.2 shows the development of total factor productivity as measured by the Kendrick, Solow and translong Indices over time. In addition, the table gives total factor productivity growth for different time periods. The growth rates for the Kendrick and the Solo indices are estimated as compound rates. The Tran slog index, however, is based on the assumption of exponent in growth due to its begarithmic, non-linear nature Graph: 1.2 index of total factor productivity is as under:

GRAPH : 1.2

Total Productivity Growth
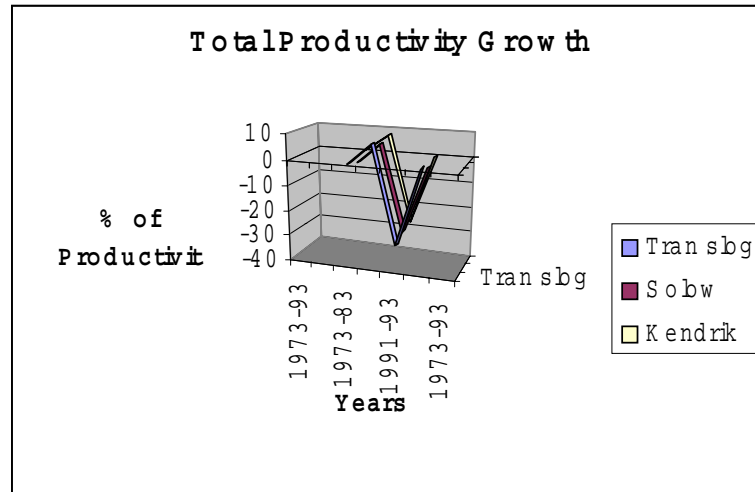
The three indices are related in their patterns. The Tran log index fluctuates in between the Kendrick and the Solow index. The division into three sub periods reveals similar behavior of total factor productivity to partial productivity. The period 1973-1983 on solow : 1.49% and minimal positive growth at 0.16% for the Kendrick index. In contrast, the second period 1981-93, gives very positive factor productivity growth at 7.75% (Traslog) 6.04 % and 8.04 (Kendrick) with a strong peak for all indices in 1991 following this peak total factor of productivity decrease rapidly at high rates of 26.42% to 30.23%

TABLE : 1.5

Total factor productivity growth. (selected time periods, percent p.a.)

Growth	Translog	Solow	Kendrik
1973-93	-0.03	-1.66	0.16
1973-83	-0.22	-1.49	0.26
1983-91	7.75	6.04	8.04
1991-93	-30.23	-27.90	-26.42
Time Trend 1973-93	0.09	-1.82	0.38

Source : CMA Data on Cement Industry 1973 & 1993

Note : Translog : Exponential growth : solow, kendrik : compound growth trend rate calculated as semi log matrix time trend on 5% level.

(4) TOTAL PRODUCTIVITY :

Total productivity measure the growth in gross value of output in excess of the growth of weighted combination on the input capital, labour, energy and material. As with total factor productivity we consider three different indices for measuring total productivity.

Table 1.4 and figure 1.3 present the growth of the three indices their evolution over time. The patterns differ slightly from total factor productivity estimates due to the more modest development of value of output over compared to the development of gross value added, figure 1.3 best supports the division into the three.

Sub periods 1973-83, 1983-91 and 1991-93 all three indices show fluctuating behavior for the first time period, according for a decrease in total productivity of 1.66% (Tran slog). -2.50 (Solow) and -1.47 (Kendrik). Reaching a low paint in 1983, total productivity increase steadily thereafter. Total productivity growth of around 4.8% for all indices.

Supports the notion of overall progress in the cement industry between 1983 and 1991 following a peak in 1991, total productivity drags in 1992 and than again recovers slightly.

For the whole time period under consideration two indices, Tran slog and kendrik, indicate a slight increase in total productivity of 0.26% and 0.47%. The slow index shows a decrease fo -0.28% p.a. As explained above this growth is driven by a very positive in the mid 1980s to the beginning of the 1990s which sets the losses in the

remaining years. To see why these three distinctive time periods can be extracted and which factor underline the specific development section will in more detail discuss the results in the context of over all economic and policy changes at specific paint of the time.

TABLE : 1.6

Total Productivity Growth

(Selected time periods, percent year.)

Growth	Tran log	Solow	Kendrik
1973-93	0.77	0.28	0.90
1973-83	-1.66	-2.50	-1.47
1983-91	4.71	4.80	5.04
1991-93	-2.84	-3.32	-3.28
Time trend 1973-93	0.28	-0.28	0.47

Source : Computed from Statistics in Indian Cement Industry, 1992-1993, CMA (June 1993).

Note : Tran slog : Exponential growth, Kendrick : compound growth. Trend Rate calculated as semi – logarithmic time trend, significant 5% level.

(5) DECOMPOSITION OF GROWTH IN VALUE OF OUTPUT :

Avery insightful way of looking at growth in output is to decompose growth into the contribution of factor input changes and total productivity growth. Generally, growth in production is two olded consisting of increased use of outputs and some additional changes (gain or loss) in productivity. As mentioned, growth in productivity there by includes technological change, learning, education, organization and management improvements etc. The two folded base of growth in out-put can naturally imply that growth in output is accompanied by increase in factor output and decrease in productivity, by decrease in factor input and increase in productivity or increase in both factor input and productivity.

(6)FUTURE DEVELOPMENT OF THE CEMENT INDUSTRY :-

1. ONGOING CHANGES IN CEMENT INDUSTRY:-

Ambitions modernization and expansion programs are currently under way in the Indian cement industry. Through adoption of modern technology and equipments, input substitution, output modification, organizational changes as well as other progress specific measures India is trying to

increase output at the same time as to improve efficiency, conserve energy and control pollution.

Process conversion presents a noteworthy example of energy conservation in the history of Indian cement industry. Over the last 30 years, the energy – intensive wet process of cement production has been virtually phased out.

Other process specific measures that have increasingly found application in the Indian cement industry include multi-stage suspension preheaters, precalciners, cyclone, and improved burners. Most of these measures are related to energy – intensive pyro processing step in cement production, while fewer measures are effective for the grinding and driving steps. In cement production, which fewer measures are effective for the grinding and drying steps. However, the use of more advanced grinding mills, such as roller or light pressure roller mills instead of cod and ball mills also show substantial power saving potentials

TABLE : 1.7

Expansion of Cement Manufacturing Capacities.

No. of units	Capacity (mt)	Units		Status
		Now	Expansion	
19	20.6	14	05	Undrimple
35	45.5	30	05	montation
				proposed

Source: karwa(1998)

Table 1.7:– presents major cement projects in terms of both additions to existing unit as well as new unit that are proposed or already under implementation as of 1997. The 19 units that are under implementation will add another 20.6 million tonnes of capacity.

As mentioned construction activities are the main driver of cement demand which enhances cement production with little foreign trade. Cement demand is taken approximately equal to cement production assumed to grow at 6.2% p.a. (1990-95 trend trade) GDP construction has been growing at 4.4% p.a. between 1992 and 1995. For the analysis it is assumed to grow at an average 5.6% between 1992 and 1997, and 6% there after (Das and kandpal, 1997) projections based on these assumptions.

As well as the average of the production estimate are given in table 1.8. Detailed regression results are presented in appendix D.

TABLE : 1.8

Project Cement Demand.

Year	Cement Demand (mt/annum) based on			
	GDP Total	GDP Industry	GDP Construction	Average
2001	103.0	107.6	106.2	105.6
2006	139.5	148.7	150.8	146.3
2011	186.9	204.2	210.4	200.5

Source : CMA, 2001.

Talking the average of the estimates, cement demand (and thus production) is expected to increase by about 39% to slightly over 100 mt p.a. by the year 200%. It will increase in future at an average rate of 6.5% p.a. to 146.3 mt p.a. in 2006 and to almost twice the amount of 2001, 200.5 mt p.a., by the year 2011, growing at a slightly lower rate of 6.3% p.a. considering the expansion plans, these estimate are to be taken as upper boundaries.

(2) FEATURES OF THE SCHEMES:

A specified percentage of the capacity of cement units is treated as levy- cement and continues under a system of price and distribution control. Accordingly, out put equal to two thirds of the installed capacity was to be sold to the government for public distribution and for priority sectors the remaining production treated as non-levy cement could be sold by the factories in the open market. The heavy quota for new unites which started production after January 1, 1982 and for sick units were fixed at 50 percent of installed capacity, and effective from February 28,1982, an uniform retention price of levy cement was fixed at Rs. 320 per tonne for ordinary Portland cement (opc). The earlier three tire pricing system was discontinued.

The committee leaded by Dr. A. K. Gosh, the chairman of the BICP, recommended the revision of retention price for every. six months. However, between February 27, 1982 and July 18, 1984, there was no link in the retention price. In the meantime there were several and successive increases in outputs costs. But the industry had to absorb the cost increases already taken place with affect from varying envisaged in the retention prices as fixed by

the government have already been eroded leaving the cement units in poor financial state. It was only effective from July 18, 1984 after a lapse of two years; the retention prices for levy cement were revised upward at Rs. 360 per tonne for PPC and Rs. 375 per tonne for OPC. But the revised prices according to the industry did not fully neutralise the rich in input costs effected during the intervening on the same date. The levy quota for old units was reduced to 65 percent and new units and sink units to 45 percent as the installed capacity. IN June 1985, these quotas were reduced to 60 percent and 40 percent respectively but were linked to actual production instead of installed capacity.

For the second time since introduction of partical decontrol policy, the union Government increased the retention price of levy cement by Rs. 24.50 per tonne to Rs. 384.50 per tonne for PPC and to Rs. 399.50 per tonne for OPC with effect from December 15, 1986. The percent increase of Rs. 24.50 a tonne in the retention price would not be passed on to the consumer in the form of increased retail price. The increased retention price would be paid from the fund accumulated in the cement regulation account. Another change was the decision to discontinue the scheme under which the industry contributed Rs. 9/- per tonne on production of non levy cement to the

Cement Regulation on Account (CRA). This dicision was ported by the Government assessment that fund position with CRA had improved.

Similarly the levy quota on the cement industry has been reduced by some percent. The units which came into production before 1982 would have levy obligation reduced from 60 percent to 50 percent of actual production.

Unit which came into production after 1982 as well as those declared sick units have their levy quota reduced from 40 percent to 30 percent. This was the third time the government has reduced the levy quota since February 28, 1982. This decision has been taken by the Government with a view to providing further movement for the growth of the cement industry. However, the relief granted to the cement industry are inadequate and don't completely compensate the like in input costs according to the industry circles. They say that as against the increase of Rs.36.37 per tones in retention price sought by them, the Government has given only a relief of Rs. 24.50 per tonne by way of increased relention price, which would meet the cost escalation up to January 1986 only since which cost have gone up by another Rs. 25 per tonne.

The future of the industry received a boost with significant shifts in Government policy in the from of partial decontrol in 1982 and complete decontrol in 1989. Consequently, the industry's fared well in 1990-91 and 1991-92. The industry's encouraging performance led to the setting up to many new plants and also induced several established companies to diversify into the production of cement.

TABLE : 1.9

Trend in Cement Production & Capacity Utillisation (Million).

Year	Average installed capacity	Production	Capacity utillisation(%)
1950-51	3.3	3.0	90.90
1955-56	4.8	4.6	95.80
1960-61	8.9	8.0	89.90
1965-66	11.6	10.80	93.10
1968-69	14.4	12.20	84.70
1973-74	19.70	14.70	74.60
1974-75	19.90	18.80	74.40
1975-76	20.60	17.30	84.00
1976-77	21.40	18.80	87.90
1977-78	21.80	19.40	89.00
1978-79	22-30	19-40	87.00
1979-80	24.30	17.60	72.40
1980-81	26.80	18.70	69.80
1981-82	29.20	21.10	72.30
1982-83	33.50	23.30	69.60
1983-84	36.90	27.10	73.40

1984-85	42.80	30.20	70.60
1985-86	42.35	32.50	76.70
1986-87	52.31	34.82	66.60
1987-88	54.51	37.41	68.60
1988-89	55.04	41.75	75.60
1989-90	56.96	42.91	75.30
1990-91	59.12	45.76	77.40
1991-92	61.31	50.61	82.50
1992-93	64.94	50.72	78.10
1993-94	71.26	54.09	75.90
1994-95	78.09	58.35	74.70
1995-96	86.76	64.53	74.40
1996-97	96.25	69.98	72.70
1997-98	101.51	76.57	75.40
1998-99	109.97	81.83	74.40
1999-2000	110.10	94.21	85.60
2000-2001	121.90	93.52	76.70
2001-2002	134.00	102.35	76.40

Source: (1) cement industry – 1987.

(2) Indian express - 02-10-1993

(3) CMA Data on Cement Industry, 2001.

(4) Indian Cement Review, January, 2003.

However, the introduction of multi-tier retention price formula assuring a post-tax return of 12% on net worth and the scheme of partial decontrol introduced in Feb. 1982 have attracted new investment. Consequently, unprecedented progress took place in the cement industry in terms of capacity and production the capacity, which was 33.50 million tonnes in 1982-83 reached 54.51 million tonnes in 1987-88, it reached 134.00 million tonnes in

2001-02 and cement production also increased from 23.30 million tonnes to 37.40 million tonnes and 102.35 million tonnes during the sames period. The installed capacity rose attain annual compound growth rate of 12.00 % during the 6th plane as against percent during the 5th plane. Other side installed capacity growth rate of 13.08 find out during the 8th place as against the 7th plane.

A similar trend was seen in respect of production also,(Table 1.9) what is intresting is that within a short period of four years(1982-83 to 1985-86), the cement industry added more than half the capacity it attained during the preceding three decades. Also the country has come out of the acute shortage and black marketing in cement. A compared to 1982-83 to 1991-92, in one decaded the cement industry added twice capacity from 29.2 million tonnes to 61.31 million tonnes. In 2001-02 it reached at 134.00 million tonnes capacity.

TABLE : 1.10

Cement Import / Export Status :

Year	Import	Export
1979-80	2.23	-
1980-81	1.45	-
1981-82	1.50	-
1982-83	2.96	-
1983-84	0.45	-
1984-85	-	-

1985-86	-	-
1986-87	-	-
1987-88	-	-
1988-89	-	-
1989-90	-	0.16
1990-91	-	0.26
1991-92	-	0.36
1992-93	-	1.18
1993-94	-	2.85
1994.95	-	3.17
1995-96	-	2.38
1996-97	-	2.72
1997-98	-	4.40
1998-99	-	3.51
1999-2000	-	3.14
2000-2001	-	5.15

Source : CMA data on cement Industry - 2001

Feb. 28, 1982, is a golden day in the history of Indian cement industry. The dual price policy was bid adieu and partial decontrol took the seat .The expectations by the Gov. on this account from the industry were high as a Gov. press note released on the day revealed.

India ranks second in the world in terms of population and cement production, the first in both the case being china. The constant efforts put in by the industry, of course, with the support of Gov. liberalisation policies, not only led the nation towards self sufficiency, but also opened the gates of the port for export. Thus the country which was importing cement as

late as 1985, made its debut in global market by 1989. The Indian cement import, export status are furnished in Table 1.10. Thus in the history of Indian cement industry – years pre 1985 were era of Import, years 1985 to 1989 were era of self sufficiency and years 1990 onwards era of Exports.

* *PRESENT STATUS OF INDIAN CEMENT INDUSTRY.*

1. World's second largest.

2. Modern up-to-date technology.

3. Quality comparable to world's best.

4. Eco – friendly.

5. Capacity over 130 mn.t. (31-03-2002)

6. Production over 100 mn.t. (31-03-2002)

7. Export – 5.15 mn.t. (2000-2001)

8. Per capita consumption – 100 kg.

9. India's second highest –

   - Exise duty over Rs.3,500/- crores per annum.

   - Sales taxes more than 3,500/- crores Rs.

   - Royalties, octroi & other cesses–1450 crores Rs.

10. Industry employs a large work – force :

    - 1.5 lakh people work directly.

    - 1.2 million people engaged indirectly.

11. Cement Demand :

    - Key driver for growth.

    - Demand is up, Prices down.

12. Cement Industry : Committed to nation growth.

13. The Indian cement industry in transition.

SOURCE : India Cement Review, Annual 2001.   .

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CHAPTER 2

RESEARCH

METHODOLOGY

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2.1 INTRODUCTION: -

The title of the problem of the subject of this study is "A *Comparative Analysis of profitability vis-a-vis liquidity performance in cement industry of India."*

The cement industry plays a vital role in the growth and development of a country as it provides required infra-structure for economic development of the country. In our country, a large population lives in villages. Roads, buildings and other infrastructure provide means for the enlistment of the economic level of a vast rural population. Unfortunately, the past setup of leading cement units was unable to meet the rising demand of cement in comparison with their counter parts in the other countries. Therefore, it is assumed that in the factor which are obstruction the profitability vis- a-vis liquidity position of cement units could manage properly then units would come out with a better working result.

This study based on the secondary data derived from annual published reports of selected cement companies or computer data. Various researchers have been conducted under Accountancy, Commerce, Management, Economics etc. faculty of Saurashtra University. However, no research has been conducted. "A *Comparative Analysis of profitability vis-a-vis liquidity performance in cement industry* of *India."* Thus

this study would be an original contribution to the problem of the study in unique every respect.

2.2 PROBLEM IDENTIFICATION:-

Cement is one of the most important industries in Indian economy. It has played a vital role in the development of country. First cement factory was established in 1904 at porbandar.   (The birthplace of Mahatma Gandhi, in Gujarat) However, during the last four decades the industry has achieved substantial progress. India is the forth largest country in the world at present. Financial soundness of business enterprise largely depending upon the profitability can be achieved after control over the cost of production like cost of raw material consumed, excise duty, power and fuel cost, interes burdon, administrative expense, selling and distribution expense etc. that have been increased heavily on the other hand selling price of the cement is decreased in this circumstance to keep the progress of business enterprises. It is very essential for management. In present environment to achieve the profit trends to introduce various cost control techniques over expenditures and maximum output.

Another problem of industry is shortage of electricity supply and heavy electric charges. It is also making effect on cost of production and financial position. The objectives of final

analyst are as (1) external and (2) internal. An external analyst has to depend upon the published information of financial. Statements, which are not on lightening themselves. While internal analysts know every thing regarding, the information provided in financial statements.

Study of financial statement analysis is always made objectively. Generally, external analysts use information as per their requirements. Financier would like to know profitability. Management would be interested in the operational efficiency and profitability. Position of the management profitability vis-à-vis liquidility also balances in the portfolio. But if the management likes profitability, Liquidity is less and the Liquidity is like the profitability is less. The various stock holders of business enterprises like management, investors, bankers, financial institutions, creditors, employees, government, economist, prospective investors etc, look at sound financial position of the business enterprise.

2.3 SURVEY OF THE LITERATURE:-

There is a sizable literature on cement industry in conforming with its long history and economic importance. A good deal of analytical literature exists at broad levels like problems associated with productivity, size and technology, capacity,

utilision, financial performance, manpower, and plant location. Relevant existing studies and literature have been briefly discussed below....

(1) The most important pioneering books were written by **PODDAR** in 1962 and 1966 respectively, in which an attempt has been made to enumerate all the historical facts regarding various aspects of the industry. Some institutions like C.M.A. association of Trade and Industry, Tariff Commission, Commerce Research Bureau, Economics Times, National Productivity Council etc. have made attempts to study the general problems in historical perspectives.

(2**) INDIAN ASSOCIATION OF TRADE AND INDUSTRY** published a book analyzing the financial   trend and productivity in the private sector of the industry between 1937 and 1964, in 1964. This study was based on the annual reports of 19 companies which accounts for 90% of the total production. The consolidated balance sheet and profit & loss account of these companies were taken for financial analysis as the base. This study compared various factors of productivity and profitability with those of other important cement producing countries like U.S.A., U.K., Japan and Belgium.

(3) **V.K. GOEL AND N.K. NAIR** have studied on productivity trends of the industry for the period from 1954 to 1976. This study includes various aspects like origin and growth of the industry, extent of under utilisation of capacity and its causes, efficiency of major inputs like labours, capital, and raw materials. It also considers financial Performance, pricing and future directions in which the industry may grow.

(4) **CHAKRAVARTY AND REDDY** had written an article on the financial performance of the industry for period from 1967 to 1971 by making comparison in 1973. They used ratio analysis as major tool for financial performance and had studied 22 ratios of profitability, proprietary, liquidity and turnover groups.

(5) **DR. D.K. GHOSH** Studied the financial position of 18 private sector companies. Heaving a paid-Up. Capital of Rs. 50 lakhs or more. This study relates to the period from 1971-72 to 1975-76. His study is confined to the analysis of the balance sheet, assets and liabilities and condence common-size income and expenditure statements etc.

(6) **KAURA AND SUBRAMANIAM** published an article on the financial performance of 10 units relating to the period from 1972 to 1979 which mainly observed liquidity, profitability, financial structure and over all performance. For this study

they used conventional ratio analysis and merit rating approach. They found that the financial strength of the units have declined over the years.

(7) **RAO AND CHANDAR**.... Have made attempt to assess the financial efficiency of cement companies for the period from 1970-71 to 1977-78 which covers 70% of entire industry. They found out that the profitability of selected companies had decreased continuously from 1970-71 to 1974-75 owing to causes such as inflationery pressure in the country, continuous fall in capacity utilization due to drastic power-cuts and shortage of coal, oil and wagon. The profitability increased in 1975-76 because of appreciable increase in the sales.

(8) **DR. KUMAR BARDAS** published a comprehensive book in 1987, touching on the various aspects of the Cement Industry like factor productivity, location, degree of competition, capacity   utilization, size efficiency, financial performance, distribution pattern and governmental policies with respect to distributions.   The study pertains to the period from 1970 to 1980. The study   revealed that all profitability ratios decreased gradually and   become   negative   for   1973-74 and1974-75. However, it improved   gradually there after.

(9) NPC RESEARCH DIVISION (April June 1991) published an article in "Productivity Quarterly Magazine" in which an attempt was made to analyze the productivity and performance ratio of the industry with a view to identifying the measure problem- areas and the prospects of solving them. The study covers 26 companies, comprising of large size plants, medium size plants and mini plants. On profitability front, of the 26 companies examined, at least 11 have shown losses.

(10) **DR. D.K. MITTAL** published a book in 1994, touching on the various aspects of the cement industry like growth of the industry, regional upgradation and modernisation, energy efficiency, price and technological controls and financial performance. The study covers more than 45 cement companies. The study pertains to the period from 1984-85 to 1991-92. on the profit performance front, the study revealed that the industry's profit had fallen despite sales growth, though at a slowerpace.

(11) **RAMA SHAKAR SINGH** published a book in 1992. This edited book covers various issues pattern, development, regional imbalances, sickness, environmental impact, policy and regulation, and case study article of "cement *industry.*" This article coveres topic, development of the industry before independence after independence, state-

wise distribution of production, pattern of consumption, pricing of cement, distribution, Government participation in production, India's role in global cement exports, and policy matter.

(12) **DR. B. L. MAHESHWARI** published a book in 2001, *Marketing strategies in cement industries in India.* Like factor cement industry in India & world, marketing organizations & structure, product standardization & grading, packing & brand, price, distribution & transportation, promotion. The study pertain to the period to overall cement industry marketing area up to 2001.

(13) **DR. S. J. PARMAR** Published a book in 2001. The book is a systematic study of the modern financial measurement techniques useful for management in planning and controlling corporate activities. With increasing participation by the general public and financial institutions as present and corporate bodies have to be on their guard and manage their efficient financial efficiency in the area of globalisation. This book covers topics of concept and measurement of profitability, cost & sales trend, profit margin, assets turnover, analysis of return on investment common size of value added statements.

(14) DR. SANJAY J. BHAYANI have done his Ph.D. Thesis on *"Analysis of financial statements of cement industry in India."* In this study profile of the cement industries in India, conceptual framework of financial statements, analysis of activity, profitability, working capital, financial structure and summary, findings and suggestions.

(15) **BUTALAL C. AJMERA** has done his dissertation "Interpretation and analysis of financial statement of two selected units of Birla group", in the year 2001 by using conceptual framework of financial statement, Research plan, profile of the cement industry. Birla group of companies a birds eye view, liquidity position, financial structure and suggestion, the period of 1994-95 to 1998-99. The study reveals the course of profitability.

[16] *THE DETERMINANTS OF PRIVATIZATION PRICES: EVIDENCE FROM TURKEY*

This paper analyses the determinants of privatization prices in a multi-industry study using a sample of 68 recently privatized firms from Turkey. Results show that revenue and market characteristics are significant determinants of privatization while current cost and profit indicators are not. It is argued that potential buyers regarding these state firms as inefficient, therefore do not take into consideration their current costs and profits in determining their value. When the

dependent variable is altered by dividing the firms privatization price by the firms sales (revenues), it is found that sales-adjusted privatization prices are responsive to firm's profit margins. However, this result does not hold when the sample is restricted to a single industry. Profit margins along with other profitability and firm efficiency measures are no longer significant determinants of sales-adjusted privatization prices in the cement industry analysis. Unexploited production opportunities measured by capacity utilization ratios, and complete private ownership resume a more important role.

[17] ***CEMENT MANUFACTURE AND THE ENVIRONMENT, PART II: ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES***

Construction materials account for a significant proportion of no fuel materials flows throughout the industrialized world. Hydraulic (mainly Portland) cement, the binding agent in concrete and most mortars, is an important construction material. Portland cement is made primarily from finely ground clinker, a manufactured intermediate product that is composed predominantly of hydraulically active calcium silicate minerals formed through high-temperature burning of limestone and other materials in a kiln. This process typically requires approximately 3 to 6 million Btu (3.2 to 6.3 GJ) of energy and 1.7 tons of raw materials (mainly limestone) per

ton (t) of clinker produced and is accompanied by significant emissions of, in particular, carbon dioxide (CO_2), but also nitrogen oxides, sulfur oxides, and particulates. The overall level of CO_2 output, about 1 ton clinker, is almost equally contributed by the calcination of limestone and the combination of fuels and makes the cement industry one of the top two manufacturing industry sources of this greenhouse gas. The enormous demand for cement and the large energy and raw material requirements of its manufacture allow the cement industry to consume a wide variety of waste raw materials and fuels and provide the industry with significant opportunities to symbiotically utilize large quantities of by-products of other industries. This article, the second in a two-part series, summarizes some of the environmental challenges and opportunities facing the cement manufacturing industry. In the companion article, the chemistry, technology, raw materials, and energy requirements of cement manufacture were summarized. Because of the size and scope of the U.S. cement industry, the article relies primarily on data and practices from the United States.

[18] ***THE USE OF BY-PRODUCTS FROM METALLURGICAL AND MINERAL INDUSTRIES AS FILLER IN CEMENT-BASED MATERIALS***

AB: This investigation has been made in order to make it possible to increase the use of by-products in cement-base materials. Use of by-products requires a screening procedure that will reliably determine their impact on concrete. A test procedure was developed. The most important properties were considered to be strength development, shrinkage, expansion and workability. The methods used were calorimetry, flow table tests, F-shape measurements, and measurements of compressive and flexural strength and shrinkage expansion measurements. Scanning electron microscopy was used to verify some results. Twelve by-products were collected from Swedish metallurgical and mineral industries and classified according to the test procedure. The investigation showed that the test procedure clearly screened out the materials that can be used in the production of concrete from the unsuitable ones.

[19] ***EMISSION TRENDS IN THE CEMENT INDUSTRY: AN INTERNATIONAL COMPARISON***

We present an in-depth decomposition analysis using physical indicators of trends in Carbon dioxide (CO_2) emissions in the cement industry in Brazil, China, South Korea and the United States. Physical indicators allow a detailed analysis of intra-sectoral trends, in contrast to the often used monetary indicators. We assess the contribution of different factors affecting CO_2 emissions in the cement industry, including change in product mix, efficiency of power generation, changes in fuel mix and changes in energy efficiency. The decomposition results show that in all examined countries, increased production was the main contributor to the increase in total CO_2 emissions. Energy-efficiency improvement is the most important factor that led to the reduction of emission intensities for all countries except Korea. For Korea, structural change in the product mix is the most important factor contributing to the emission intensity reduction.

[20] ***STRUCTURAL ANALYSIS OF GEOTHERMAL WELL CEMENTS***

Current design procedures are deficient when it comes to the cement/sealant used in geothermal well cementing jobs. The structural performance of the cement is based on the requirement that the cement must have a certain compressive strength. By calculating the response of the cement due to

pressure/temperature (P/T) loads, the relevant stress fields are found to be sensitive to a variety of parameters in such a way that they cannot be enveloped solely by the compressive strength of the material. A similar concern also exists in the oil and gas industry. This paper presents a variety of modeling approaches that can be used to perform the necessary structural analysis from which the stress field in the cement can be evaluated. It is recommended that the design of the cement be based on the results from such structural analysis rather than on the basis of the limited requirement for compressive strength. The paper also presents parametric variations of the radial and tangential stresses in the cement that were obtained through coupled analyses of casing-cement-formation models. It is shown that the state of stress in the cement is very sensitive to (a) far-field stress and (b) the relative stiffness between the cement and the formation.

[21] ***FORGING BUYER-SELLER RELATIONSHIPS FOR TOTAL QUALITY MANAGEMENT IN INTERNATIONAL BUSINESS: THE CASE OF THE EUROPEAN CEMENT INDUSTRY***

Most authors agree that commitment is an important building block in long-term business relationships. This study attempts to investigate how commitment develops in long-term business-to-business relationships in the context of an international quality network. To accomplish this objective,

the relationship marketing perspective and the network perspective are integrated into a conceptual framework, describing how network constructs influence the long-term relationships indirectly through commitment. This framework was tested empirically in the context of the European cement industry with regards to a total quality management network. Our results indicate that, in particular, affective commitment and calculative commitment have a significant positive effect on the parties" willingness to invest in the relationship. The antecedents of commitment, and especially actor bonds, have an indirect influence on the willingness to invest in the relationships.

[22] ***HIGH-PERFORMANCE CEMENTATIONS GROUTS FOR STRUCTURAL REPAIR***

Laboratory investigation was undertaken to develop high-performance cement-based grouts for infiltrating fiber-reinforced cementations composites that makes them ideally suited for structural repair and seismic retrofit. The theological and mechanical properties of the proposed grouts are interesting since, from a practical point of view, they exhibit no bleeding or segregation and reach high compressive strength and flow ability. This study recommends the use of natural pazzolona in combination with silica fume in the production of high-performance cement-based grouts for

providing technical and economical advantages in specific local uses in concrete industry.

KW: Compressive strength; Grout; Silica fume; Natural pazzolona; Super plasticizer

IS: 0008-8846

[23] ***AUDITING OF THE MAINTENANCE SYSTEM OF FUHAIS PLANT/JORDAN CEMENT FACTORIES CO***.

In the cement industry maintenance cost consumes approximately 20-25 percent of the total production cost, which comes in the second rank after the energy cost. Therefore, cement plants in Jordan, taken as a case study that represents developing countries, are facing big challenges in reducing both energy and maintenance costs. In order to improve the maintenance system in the Fuhais plant, auditing of the existing maintenance system had been conducted, since this step is essential in improving any maintenance system. A quantitative (statistical) method was used in order to determine the weakness points in the existing maintenance system. Where based upon this auditing, several actions and strategies were put in a medium-range plan to resolve the problems and improve the system.

KW: Cement Industry; Maintenance; Audit; Productivity; Jordan

IS: 1355-2511

2.4 THE RESEARCH METHODOLOGY:-

(I) THE PROBLEM:-

The title of the study is *A comparative analysis of profitability vis-à-vis liquidity performance in cement industry of India.*

(II) *OBJECTIVES OF THE STUDY:-*

     (1) To analysis of the profitability.

     (2) To examine the liquidity position and analyses of liquidity.

     (3) To analysis profitability vis-à-vis liquidity.

     (4) To make suggestions of profitability and liquidity for financial soundness.

(III) HYPOTHESIS:-

(1) There is no any significant difference between Profitability Trends of Cement Industry of India.

(2) There is no any significance difference in Liquidity Trends of Cement Industry of India.

(IV) DATA COLLECTION:-

The main source of data used for the study was secondary, drawn from the annual profit & loss account and balance sheet figures as found in annual reports of the selected units.

The other data source is ***ProweSS database & capitalline*** software from CMIE, Mumbai. And opinions expressed in commercial journals, magazines, news papers, Accounting literature, various journals on cement viz. cement industry annual Review, world cement, cement abstracts etc. have been also used in this study.

(V) PERIOD OF THE STUDY:-

The profitability and liquidity study is made for a period of 8 years from 1995-96 to 2002-03.

(VI) UNIVERSE OF THE STUDY:-

The universe of the study consists of all the limited companies working in India and listed in stock exchange of India.

(VII) SAMPLING DESIGN:-

There are about 125 such companies which are working in India data available of 79 companies. Researcher has selected 17 Companies as the sample for this study. The sample has been selected considering following factors.

* Data for the entire period of the study from 1995-96- 2002-03.

* For the purpose of analyses all the selected companies have been classified in to five regions – Eastern region, Western region, Northern region, Southern region, and Rest of region.

* Allocation of the state in regions has been made according to CMA criteria.

* Companies have been classified into various regions according to the location of plant in the state.

* Those companies plant have been located in the more then one region they have put in   rest of region.

(VIII) NAMES OF THE COMPANIES:-

(A) Eastern Region
  (i) OCL India Limited
  (ii) Damodhar Cement & Slag Limited
  (iii) Ambuja Cement Eastern Limited
  (iv) Birla Corporation Ltd.

(B) Western Region

(i) Saurashtra Cement Limited

(ii) Gujarat Ambuja Cement Ltd

(iii) Gujarat Sidhee Cement Ltd.

(C) Northern Region

(i) Shree Cement Limited

(ii) Associated Cement Cos. Ltd.

(D) Southern Region

(i) Priyadarshini Cement Limited

(ii) Shri Vishnu Cement Limited

(iii) Madras Cements Ltd.

(iv) Chettinad Cement Corp. Limited

(v) Dalmia Cement (Bharat) Limited

(vi) Deccan Cements Limited

(E) Rest of The Regions

(i) Shree Digvijay Cement Limited

(ii) Cement Corporation of India Limited

(IX) TOOLS AND TECHNIQUES FOR ANALYSIS OF FINANCIAL STATEMENTS:-

1   Ratio Analysis

2   Common-Size statements

3   Trend Analysis

4   Comparative statements Analysis

5   ANOVA Test

6   Analysis of Time Series

7   Diagrammatic and Graphic Analysis

2.5 LIMITATIONS OF THE STUDY:-

(l) This study based on secondary data taken from published annual reports and accounts of selected companies and as such its finding depends entirely on such data.

(2) There are different methods to measure the profitability and liquidity of an industry in this connection views of experts differ from one- another.

2.6 CHAPTER PLAN:-

CHAPTER-1

PROFILE OF THE CEMENT INDUSTRY IN INDIA:-

This chapter deals with the history and development of cement industry of India - Definition of cement -Cement process -Types of cement -Grade of cement-Profile of the cement industry in world -Profile of the cement industry in India -Cement production in India-Government policy-Total factor productivity-Total productivity-Future development of the cement sector-on going changes in cement industry-Features of the schemes.

CHAPTER -2

RESEARCH METHODOLOGY:-

Introduction-Problem identification-survey of the literature-
The research methodology- The problem objectives of the study- Hypothesis- Sampling design-Data collection- Period of the study- Universe of study- Sampling design- Tools and techniques for analysis of financial statements- Limitations of the study & Chapter plan.

CHAPTER -3

ANALYSIS OF PROFITABILITY:-

This chapter deals with analysis of profitability of selected cement companies. It has done with the help of different analytical tools such as Ration analysis-Gross profit ratio–Operating profit ratio-Net profit ratio-Dividend pay out ratio & summary.

CHAPTER -4

ANALYSIS OF LIQUIDITY

This chapter deals with analysis of liquidity of selected cement companies. It deals with the concept of liquidity and liquidity ratio of cement industry of India. It has done with the help of different analytical tools such as ration analysis-Current liquidity ratio-Quick liquidity ratio-Actual liquidity ratio and Solvency ratio & Average collection period.

CHAPTER -5

PROFITABILITY VIS-À-VIS LIQUIDITY:-

This chapter deals with analysis of profitability vis-a-vis liquidity of selected cement companies. It has done with the help of different analytical tools such as ratio analysis.

CHAPTER -6

SUMMARY, FINDINGS AND SUGGESTIONS:-

This chapter gives its emerging conclusion based on the analysis carried out and points out the variation if any from the literature. It also gives concrete suggestions for enhancing profitability & liquidity for financial soundless, for cost control and liquidity position.

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[3.1] INTRODUCTION:-

Profit is the legitimate object of our society and prima facie object of every business. It is barometer of the success of business. Profit is the pivot around which revolve the various activities of business. In the opinion of R.E.V. Duck and F.R.J. Jervis, " Perhaps the most important reason for keeping accounts as far as management of the business is concerned that the information contained in them provides the means of measuring the progress of a business, of testing it's pulse and at indicating when and where remedial action, if necessary, shall be taken".

The survival of any business depends upon it's earning capacity. Thus, if an enterprise fails to make profit, capital invested is eroded and if this situation prolongs, the enterprise ultimately ceases to exist. In fact, profit is the soul of business without which it is lifeless. Indeed, the efficiency of a business concern is measured by the amount of profits earned. The larger the profits the more efficient and profitable the business is demand to be. According to R. R. Gilchrist, the profit is the ultimate measure of effectiveness. A profitable company is likely to offer not only security of employment but also promotion prospects, job opportunities and the intense personnel motivation that comes from being associated with success.

Profitability means the profit earning ability of the enterprise, and the capacity of management to generate surplus in the process of business operations. It is overall measure of efficiency.

Profitability is distinguished from "profits". Profits refer to the absolute quantum of profits. Whereas the profitability refers to the ability to earn profits.

W. M. Harper remarks that profitability is a relative measure, it indicates the most profitable alternative. Profit, on the other hand, is an absolute measure – it indicates the overall amount of profit earned by a transaction. Very high profit doses not always indicate a sound-organizational efficiency and low profitability is not always a sign of organizational sickness.

In many a situation, it so happens that when a concern is implementing expansion plans, it may run into short term losses, therefore it can be said that profit is not the prime variable on which the operational efficiency and financial efficiency of an organization can be compared.

Profitability is required to judge the degree of operational efficiency of management, controlling operations and

performance. It is also used to study "relative efficiency" with other firms.

An analysis of profitability reveals how the profit position stands as a result of total translations made during the year. Such analysis is particularly interesting to the suppliers of funds who can evaluate their investment and take decision accordingly. On the other hand, profit ratios are equally helpful to the management because these rations reflect the efficiency of the enterprise as a whole. B.B.Howod and M.Upton observed that the word "profitability" may be defined as the ability of a investment to earn to return on its use. Thus profitability is the ability of an organization to earn profits. In other words, profitability is a composite concept relating the efficiency of an organization to earn profits.

[3.2] PRODUCTIVITY AND PROFITABILITY:-

The performance of business firm can be evaluated or measured from a number of perspectives, and there are various quantitative as well as qualitative criteria that can be employed for this purpose. Productivity and profitability are the two separate device for the measurement of over all efficiency of a business firm.

Productivity is defined as the ratio of outputs to inputs, outputs in the form of products or services and input are the resources which are put in to convert into outputs. It is the quality or state of being productive. It is a concept that guides the management of production system and measures its success. It is the quality that indicates how efficiency the material, the labour, the capital and the energy can be utilized Measurement and analysis of productivity can help to identify area for corrective actions towards planning of business firm.

Capital and labour happen to be the two most important factor of production and the profitability of the business firms depends greatly on how efficiency and effectively it utilizes these two factors of Production. The productivity of capital can be measured by the ratio of out put to capital employed. The higer the ratio the greater would be the productivity of capital. If productivity of business firm increases the profitability will also increase. Thus profitability of the business firm largely depends on the productivity. Though both are different concepts of measuring the performance of business, their calculation is same base on the ratio. The calculation formulas are as under:

Profitability = Operating Income / Operating Assets
Productivity = Output / Input

Where operating income means, income from utilization of capital employed in the business firm and Operating Assets means capital employed. Chen and Mc Garrach painted out that "with due allowance for temporary currency value fluctuations or changes in commodity or product price, there is strong positive co-relation among time series data measuring productivity, profitability and efficiency. Profit may be high or law due to change in selling price of commodities and services, inflationary effects, Governmental policy etc.,

[3.3] <u>PROFITABILITY AND EFFICIENCY :-</u>

Profitability is also not synonymous with Efficiency thought it is an index of efficiency, it is regarded as a measure of efficiency and management guide to greater efficiency. No doubt profitability is an important yardstick of efficiency, but the extent of profitability can not be taken as a final proof of efficiency. Some time satisfactory profits can make inefficiency and conversely a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply revels a satisfactory balance between the value receive and value given. The change in operational efficiency is merely one of many factors on which profitability of an enterprise largely depends between cost and profitability. Moreover, there are many other factors besides efficiency which affects the profitability.

[3.4] FACTORS AFFECTING THE PROFITABILITY :-

The following are the two main factors which affects the profitability of a business firm.

(1)   The Operational profit Margin.

(2)   The Rapidity of Turnover of capital employed.

Profitability is the product of these two factors and, therefore maximum or optimum profits can be earned only by maximizing them. In technical terms, the combination of these two factors is known as the "Triangular Relationship." Its significance exits not only in its use as an analytical tool but also because the profitability ratio can be calculated directly from the specific earnings and investment data. It is also useful in explaining the two forces bearing upon ultimate results and therefore, establishes the area of business operations which must be properly controlled if expected results are to be achieved.

It can be shown is an equation form as under:

$$\text{Profitability} = \frac{\text{Sales}}{\text{Operating assets}} \times \frac{\text{Operating Income}}{\text{Sales}} = \frac{\text{Operating Income}}{\text{Operating Assets}}$$

Where "Operating Assets" are used for capital employed and income from utilization of capital employed in the business firm, respectively. The inter-relationship between the above ratio has to be understood with a view to analyzing

profitability. The rate of return on investment is the result of the profit margin and turnover of assets in sales. These two components are multiplied for arriving at the profit percentage on investment. Each of these two components is itself an end product of a sequence of interrelated factors. These components are helpful in investigating the financial composition, analyzing current financial position and formulating the financial forecasting for future of a business firm. Moreover, the interrelationship can also, be well understood with the help of Du-Pont Chart.

[3.5] THE DU-PONT CHART :-

The inter-related components are shown profit path. The mechanics of profit path are based on the chart which is developed by E.D. Due-Pont De Nemours Company, Welmington, USA. This chart is popularly known as Du-Pont chart. It is very useful device for evaluating profitability of inter industry and inter-product etc. The Profit performance of business firm can be analyzed with the help of Du-Pont chart.

Return on Investment(%)

Net Profit Margin(%)

Total Assets

Net Profit

Net Sales

Net Sales

Total Assets

Net Sales + Non Operating Surplus

Total Cost

Current Assets

Net Fixed Assets

Cost Of Goods Sold

Operating Expenses

Interest

Tax

Cash & Bank Balances

Receivables

Inventories

Other Current Assets
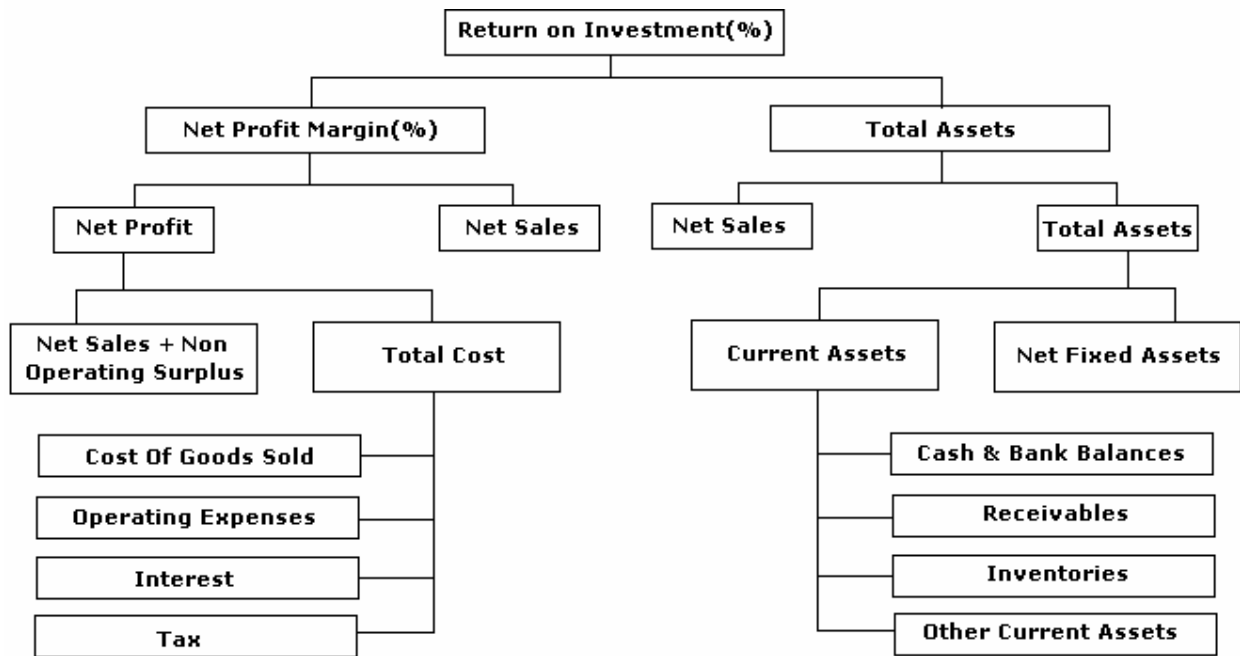
Du-Pont chart showing inter-relationship of factors affecting return on investment

It is clear from the Du-Pont chart that the rate of return on investment is affected by a number of factors. It may be noted that the analytical chain in this chart is developed along with tiers. The first sequence starts with the net profit margin shown in percentage, which is calculated by dividing net profit by net sales, net profit is equal to net plus non operating surplus less total cost and the total cost include cost of goods sold, operating expenses interest and tax. In the second tier the sequence states with total assets turn over, determined by dividing net sales by total assets. Total assets, of course represents current plus net fixed assets. Current

assets include cash and bank balance, receivables, inventories and other current assets.

"The two tier approach concentrates attention on the separate forms contributing to profit. Improvement can be accomplished either through more effective use of available capital measured by the turn over sequence or through a better relationship between sales and expense measured by the profit margin sequence. For providing standard of evaluations, calculations are made on the ratio of return investments assets turnover and profit margin for compatable companies".

Lastly, the financial decisions and policy matter decisions to the various factors shown in Du-Pont chart also affects the profitability. "Financial decisions affect both, the size of earnings stream or profitability and riskiness of the firm. Policy decisions affect, risk and profitability".

[3.6]   IMPORTANCE OF PROFITABILITY:-

Profit is a very good indicator of business performance, but the real standard of performance of a business firm cannot be judged by the absolute size of its periodic profit. For that profitability is a good device, which represent the earning of a business firm. Modern management is engaged in the task of

maximizing the profit and wealth. The efficiency of management is measured by the profitability of the business; the greater is the profitability of the business, the more will be efficiency.

"An analysis of the profitability reveals as to haw the position of profit stands as a result of total transactions made during the year. It need not be stressed that profitability is analysed through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share holders of business firm. The management of business firm has to take some crucial managerial decision like further expansion, raising of additional finance and problem of bonus and dividend payment etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management cans evaluate the operational efficiency of the business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share holders are equally interested in the profitability of the company. The share holders of a business firm cannot be judged by absolute size of its periodic profit. For that profitability is a good device which represent the earning capacity of a business firm. Modern management is engaged in the task of maximizing the profits and wealth. The

efficiency of management is measured by profitability of the business; the greater is the profitability reveals as to how position of profit stands as a result of total transaction mode during the year. It need not be stressed that profitability is analyzed through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share-holders of business firm. The management of a business firm has to take same crucial managerial decision like further expansion, raising of a additional finance and problem of bonus and dividend payments etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management can evaluate the operational efficiency of the business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share-holders are equally interested in the profitability of the company. The share-holders can take the decision weather to hold their equity share in the company or not, on the basis of profitability. Thus the management, creditors and owners of the company are equally interested in the profitability of the company.

[3.7] <u>**TECHNIQUES TO MEASURE PROFITABILITY:-**</u>

The Measurement of profitability is as essential as the earning of profit itself for a business firm. The profitability of a business firm can be evaluated or measured from number of perspectives, and there are various quantitative as well as qualitative method that can be employed for this purpose. The following major techniques may be used to measure profitability.

[I] <u>***RATIO ANALYSIS :-***</u>

"Ratio Analysis" is one of the prevelent and the most popular technique to measure the profitability of the business firm; it is used primarily to gain an insight into financial and operating aspects of a business firm. Ratio analysis is the process of determining and presenting in arithmetical terms the relationship between figures and group of figures drawn from financial statements. A ratio may be defined as "the indicated quotient of two mathematical expression" and as "the relationship between two or more things." The term accounting ratio, is used to describe significant relationship which exist between figures shown in financial statements profit & loss account and balance sheet.

The technique of ratio analysis involves four steps viz. determining the accounting ratio to be used, comparison of ratio with the standard set and interpretation. An analyst has to determine which ratio is to be used, and then he computes it and compares it with the standards but no such standards have been setup by the Indian Industries till today. The interpretation of ratio requires careful & detailed study and sound judgment on the part of the analyst.

SIGNIFICANCE OF RATIO ANALYSIS :-

The significance of the ration analysis depends on the purpose of which it is mode by the analyst. The important paints of significance are as under :

- A useful tool in the hands of management.
- Inter firm comparision is possible.
- Trend analysis may be easier.

LIMITATIONS OF RATIO ANALYSIS:

Ratio analysis suffers from a number of draw backs :-
Difficulty in comparision due to

a. Different procedures and practice followed by different firms.

b. Different accounting periods.

c. Every firm differs in age, size, etc,

- Price-level changes between two period.
- Conceptual diversity.
- Different meaning of the terms.
- Accounting limitations.
- Several ratio to draw conclusions.
- Ratio analysis conveys observations.
- Ratio may be misleading.

CLASSIFICATION OF RATIOS:-

Ratio can be classified into two different categories depending upon the basis of classification.

1. The traditional classification.
2. Classification based on nature of ratios.

(1) THE TRADITIONAL CLASSIFICATION:-

The traditional classification has been made on the basic of the financial statements to which the determinates of a ratio belong. On this basis the ratio could be classified as:

(A) PROFIT AND LOSS ACCOUNT RATIO:

Ratio are calculated on the basic of the items of profit and loss account only.

(B) BALANCE SHEET RATIO:

Ratio are calculated on the basis of the figure of Balance Sheet only.

(C) COMPOSITIVE RATIO:

Ratio is calculated on the basis of profit and loss account as well as the balance sheet.

(2) CLASSIFICATION BASED ON NATURE OF RATIO:-

To get the correct view of the profitability and financial soundness of a firm and to make a systematic study, Ratio are classified as under:

(A) LIQUIDITY RATIO: -

This ratio indicates liquidity position of a company. These ratio shows the ability of a company to meet its short term obligation. Current ratio, liquidity ratio and quick or acid-test ratio are included in liquidity ratio.

(B) LEVERAGE RATIO OR STRUCTURAL RATIO:-

These ratios are used to guide the long term financial position of the firm. This ratio indicates the funds provided by the long term creditors and owners. Leverage ratio is calculated from balance sheet items. Leverage ratio are (1) Debt equity ratio (2) Gearing Ratio (3) Debt to total capital ratio.

[C] ACTIVITY RATIO:-

Activity ratio is concerned with how efficiency the assets of the firm are managed. These ratios express relationship between level of sales and the investment in various assets. Activity ratios include (1) Inventory turnover ratio (2) Debtor turnover ratio (3) Collection period ratio

(D) COVERAGE RATIO:-

The coverage ratios measure the relationship between what is normally available from operations of the firms and claims of the out-sliders. Coverage ratios include (1) Interest coverage ratio.(2) Dividend coverage ratio.(3) Total coverage ratio.

(E) PROFITABILITY RATIO:-

Profitability ratio are calculated to measure the managements Overall efficiency. Several other parties like creditors, share holders, prospective investors, bankers, financial institutions and the government are also interested in analysis of the profitability of a company. Therefore the following ratios can be computed to analyse the profitability.

[II] *COMPARATIVE AND COMMON SIZE INCOME STATEMENT ANALYSIS:-*

Profitability analysis is very useful on comparative basis, so, it is of paramount importance that a series of statements over a period of years should be used. Comparative and common size income statement is the simplest technique of profitability analysis. In this technique, the figure of net sales is taken equal to one hundred and the percentage of individual items is computed likewise.

[III] *TREND ANALYSIS:-*

Trend analysis is immensely helpful in marking comparative study of the changes in an item of groups of items over a period of time and to make conclusions regarding the change in date. For this purpose, a base year is selected and the amount of the item-relating to the base year is taken equal to a hundred and Index number are computed for other years based on the amount of item relating to the base years based on the amount of that item in those years.

[IV]   _VALUE ADDED ANALYSIS :-_

In this method two statements are prepared to show the generation of valued added and the application of value added. Value generated is computed by subtracting the total of the cost of bought – in – materials and services from the amount of sales plus income from services, which is termed as Gross Value Added.

[V]   _OTHER TECHNOQUES OF MEASURMENTS :-_

Various statistical techniques are used to provide a more accurate and scientific measurement form profitability analysis. These techniques are moving average, range, standard deviation, index numbers, regression, correlation, chi-square test, 'F' test and analysis of time service. Diagrams and graphs are also often used in profitability analysis.

[3.8] PROFITABILITY ANALYSIS OF CEMENT INDUSTRY:

The profitability of cement industry in India has been analysed from the point of view of financial management and shareholders. Profitability can be measured in terms of different components of profit and loss account and balance sheet.

A financial manager is very much interested to locate and pin-paint the causes which are responsible for low or high profitability. The Financial Manager should continuously evaluate the efficiency of its company in terms of profit. In analysing the profitability of cement in India from the point of view of financial management, the following ratios are considered.

(1)   GROSS PROFIT RATIO :-

This ratio expresses the relationship of gross profit to net sales, in term of percentage. The determinates of this ratio are the gross profit and sales, which means net sales obtained after deducting the value of goods returned by the customers from total sales. This ratio is of vital importance for gausing raging business results. A low gross profit ratio will suggest decline in business, which may be to insufficient sales, higher cost of production with the exiting or reduced selling price or the all-round inefficient management. The financial management must be able to detect the causes of a falling gross profit ratio and initiate action to improve the situation. The higher gross profit is a sign of good efficient management it is calculated as follows:

Gross Profit Ratio = Gross Profit / Net Sales * 100

Table 3.1. Shows that in Eastern Region, Gross Profit Ratio was fluctuating during the study period from-1995-96 to 2002-03.

Table 3.1

Gross Profit Ratio (in Percentages)
Cement Industry Under the study -1995-96 to 2002-03

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	18.04	15.76	13.54	15.11	12.65	9.78	9.51	13.53	13.49
Damodhar Cement & Slag Ltd.	-21.43	-13.86	4.46	16.36	-1.22	9.39	4.02	8.46	0.7725
Ambuja Cement Eastern Limited	0.48	7.94	-10.12	-31.74	5.22	-10.32	8.08	12.56	-2.2375
Birla Corporation Ltd.	12.28	6.96	2.41	3.35	4.13	5.38	5.25	5.11	5.60875
YEARLY AVERAGE	2.3425	4.2	2.5725	0.77	5.195	3.5575	6.715	9.915	4.408438
Western Region									
Saurashtra Cement Limited	19.42	21.89	13	16.92	11.22	1.45	3.56	3.75	11.40125
Gujarat Ambuja Cement Ltd	32.87	37.13	31.91	31.91	31.28	31.71	32.18	30.54	32.44125
Gujarat Sidhee Cement Ltd.	24.08	10.93	6.16	-16.17	-21.6	-15.16	3.12	1.07	-0.94625
YEARLY AVERAGE	25.45667	23.31667	17.02333	10.88667	6.966667	6	12.95333	11.78667	14.29875
Northern Region									
Shree Cement Limited	16.66	28.34	23.19	17.77	17.65	18.09	19.72	18.04	19.9325
Associated Cement Cos. Ltd.	18.1	11.28	7.93	10.03	7.66	12.95	14.07	10.8	11.6025
YEARLY AVERAGE	17.38	19.81	15.56	13.9	12.655	15.52	16.895	14.42	15.7675
Southern Region									
Priyadarshini Cement Limited	18	20.63	21	17.06	12.99	13.97	18.59	8.32	16.32
Shri Vishnu Cement Limited	19.2	17.29	12.33	8.29	3.71	12.72	9.91	1.15	10.575
Madras Cements Ltd.	35.14	33.63	32.19	30.19	29.59	28.91	22.09	20.8	29.0675
Chettinad Cement Corpn. Limited	28.37	29.86	26.43	26.18	26.89	28.49	23.53	15.11	25.6075
Dalmia Cement (Bharat) Limited	29.4	26.39	25.48	21.61	19.53	20.93	20.5	13.68	22.19
Deccan Cements Limited	25.67	24.48	26.29	21.96	21.57	19.96	17.85	10.68	21.0575
YEARLY AVERAGE	25.9633	25.38	23.9533	20.8817	19.0467	20.83	18.745	11.62333	20.80292
Rest of Region									
Shree Digvijay Cement Limited	1.69	8.65	2.9	-2.67	-11.56	3.93	6.58	8.77	2.28625
Cement Corporation of India Limited	-6.4	-8.82	4.05	-8.54	9.65	-25.55	-50.66	-111.17	-24.68
YEARLY AVERAGE	-2.355	-0.085	3.475	-5.605	-0.955	-10.81	-22.04	-51.2	-11.1969

Source: Computed from the reports and account of the respective companies from 1995-96 to 2002-2003.

The table 3.1 shows that in *Eastern Region* gross profit ratio reveals the significant fluctuating trend during the study period from march-1996 to march-2003. The average ratio of Eastern Region was 4.40 percent. The profit ratio in Eastern Region in march-1996 is 2.34%, in march-1997 - 4.2%, in march-2002 – 6.71% and in march-2003 – 9.9%.

In *Western Region* gross profit ratio was fluctuating during the study period from march-1996 to march – 2003. The average ratio of Western Region was 14.29 percent. In this region performance of Gujarat Ambuja Cement Ltd. was better than the other units. In 1996 average ratio of this region was 25.45 percent, which was higher than the same year of industry average. In march-2003, the ratio decreased in all units of the Western Region.

In *Northern Region* gross profit ratio reveals the significant fluctuating trend. The average ratio of Northern Region was 15.76 percent. In this region performance of Shree Cement Limited was better than the A.C.C. Ltd. In March-1997 average ratio of this region was 19.81 percent, which was higher than the average ratio of the same region (15.76 percent).

The profit ratio in Northern Region in march-1996 is 17.38 percent, in march-1997 it is 19.81 percent, in march-1998 it is 15.56 percent, in march-1999 it is 13.9 percent, in march-2000 it is 12.65 percent, in march-2001 it is 15.52 percent, in march-2002 it is 16.89 percent & in march-2003 it is 14.42 percent.

The performance of *Southern Region* was satisfactory because the average ratio of this region was 20.80 percent, which was higher than other regions' average. In this region the performance of Madras Cement Limited was very good. The average of Madras Cement Limited was 29.06 percent which was higher than all the unit under study. In this region higher ratio was 25.96 percent in march-1996, which stood at 25.37 percent in march-1997. In march-2003 the ratio was 11.62 percent, which was lowest during the study period.

The *Rest of Regions* units average ratio of gross profit was negative and unsatisfactory. The reason for its poor performance was high cost of input and low volume of sales. In this region highest ratio was 3.47 percent in march-1998, which stood at −10.81 percent in march-2000. In march-2003 the ratio was −51.20 percent, which was lowest during the study period.

Chart No.3.1 (A)

Gross Profit Ratio (%) Eastern Region
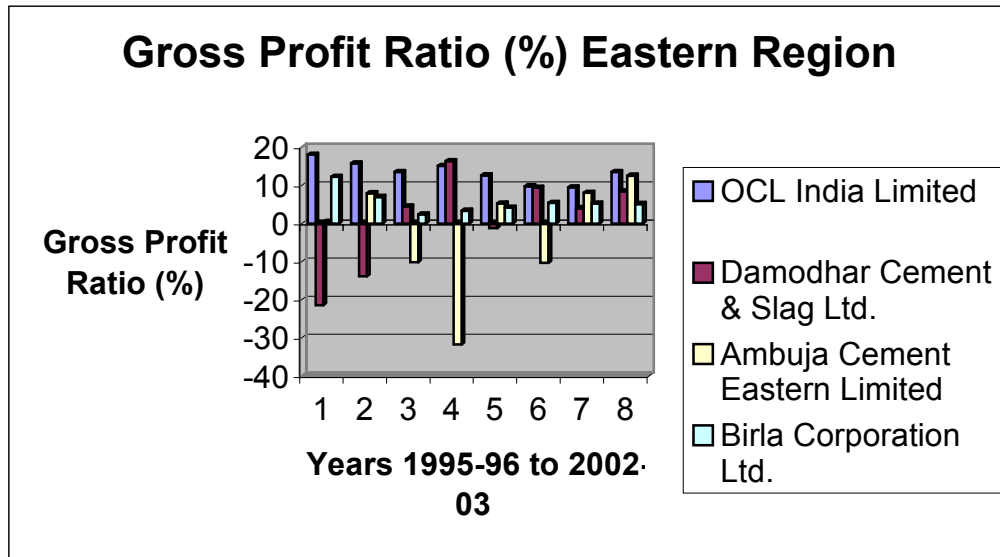
Chart No.3.1 (AA)

Gross Profit Ratio- Eastern Region (%)

Chart no. 3.1 (B)

Gross Profit Ratio (%)-Western Region

Gross Profit Ratio (%)

Years 1995-96 to 2002-03

- Saurashtra Cement Limited
- Gujarat Ambuja Cement Ltd
- Gujarat Sidhee Cement Ltd.

Chart no. 3.1 (BB)

Gross Profit Ratio - Western Region (%)

Chart No.3.1 (C)

Chart No.3.1 (CC)

Chart No.3.1 (D)

Gross Profit Ratio -Southern Region

Gross Profit Ratio (%)

Years 1995-96 to 2002-03

Legend:
- Priyadarshini Cement Limited
- Shri Vishnu Cement Limited
- Madras Cements Ltd.
- Chettinad Cement Corpn. Limited
- Dalmia Cement (Bharat) Limited
- Deccan Cements Limited

Chart No.3.1 (DD)

Gross Profit Ratio - Southern Region (%)

Chart No.3.1 (E)

Gross Profit Ratio (%) - Rest of the Regions

Gross Profit Ratio(%)

Years 1995-96 to 2002-03

- Shree Digvijay Cement Limited
- Cement Corporation of India Limited
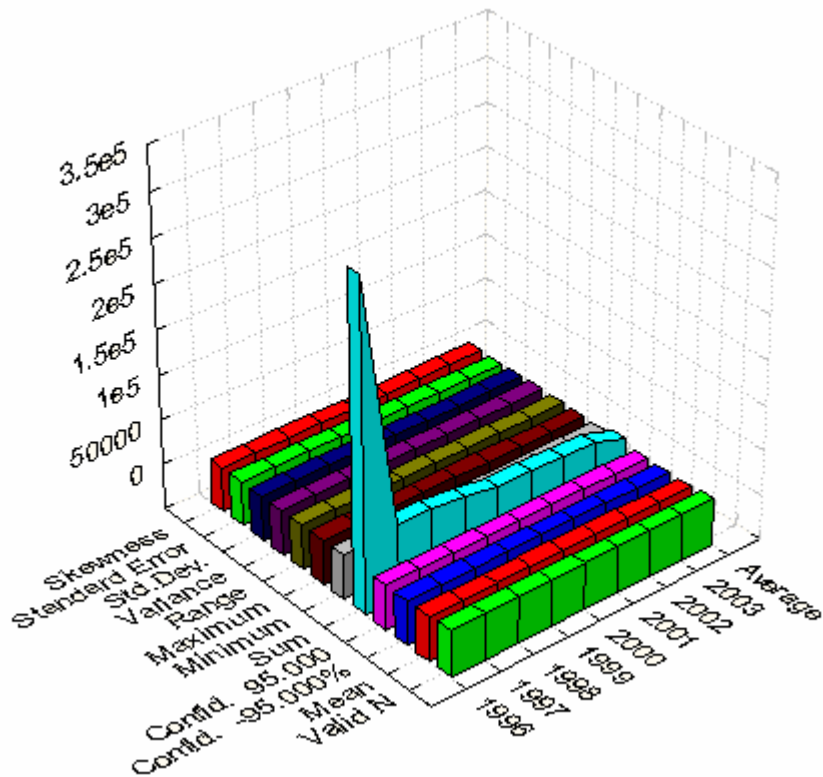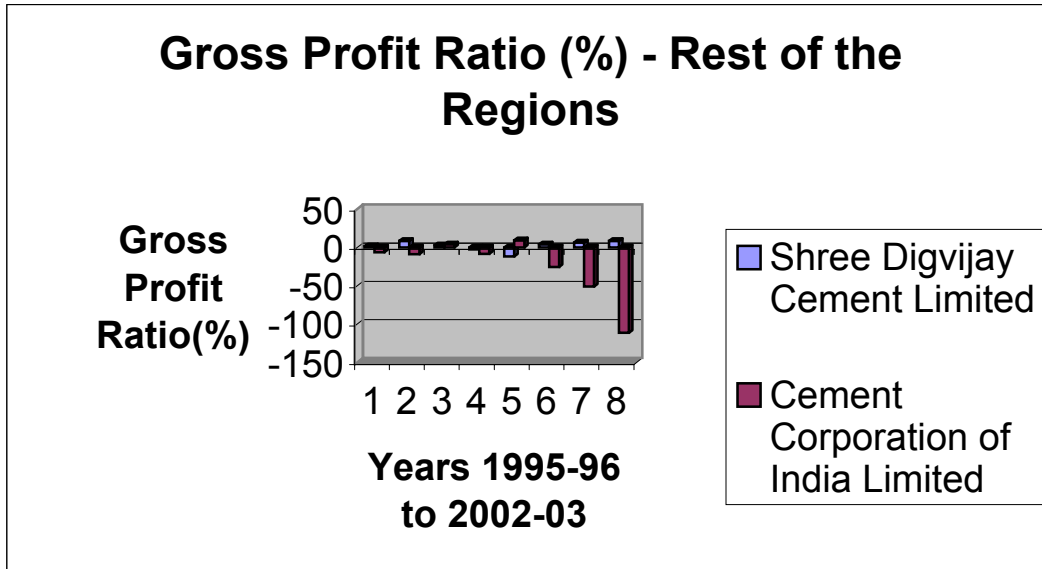
Chart No.3.1 (EE)

Gross Profit Ratio - Rest of The Regions (%)
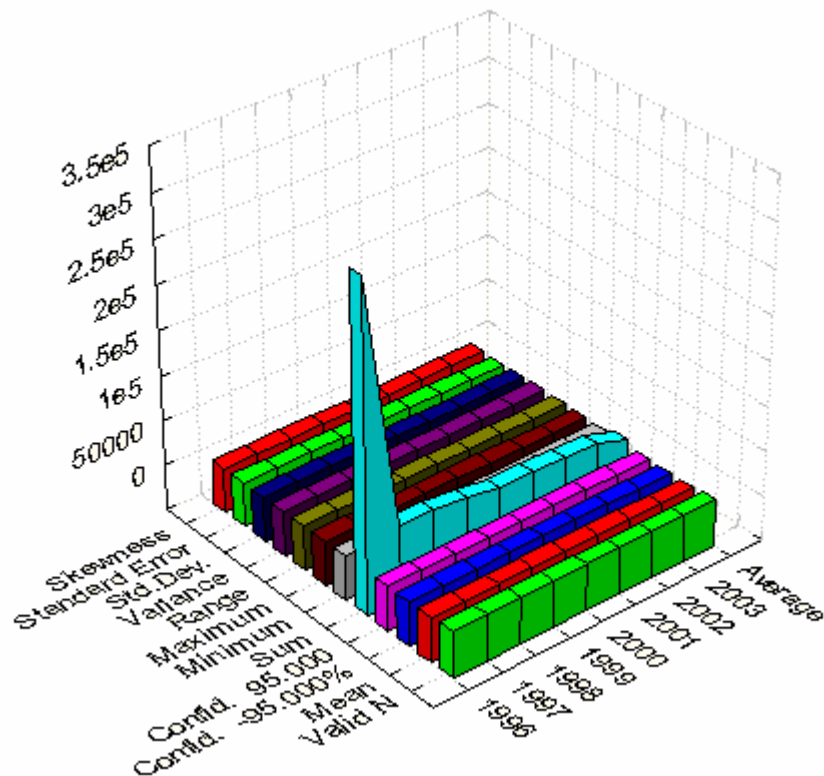
Gross Profit Ratio – Anova Test ► Chi^2 – Test, F – Test, T (Student) - Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)

Probability Density Function
y=student(x,1)

Probability Distribution Function
p=1-istudent(x,1)
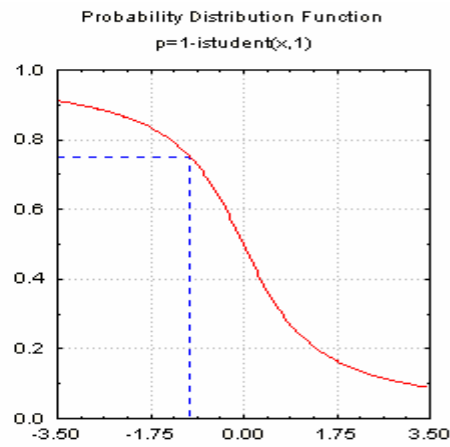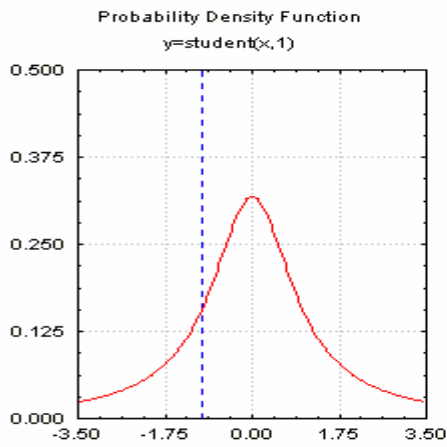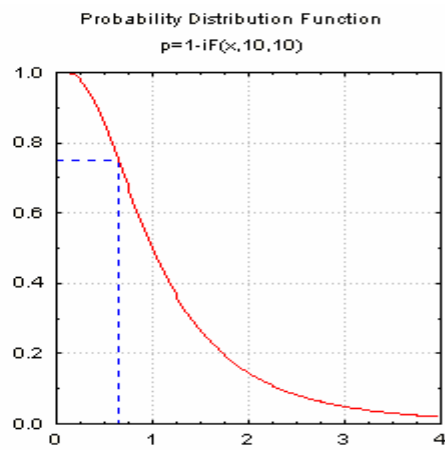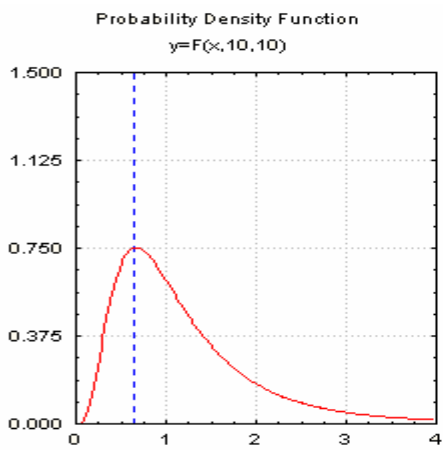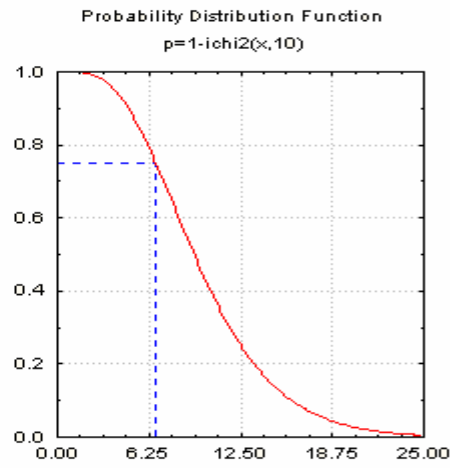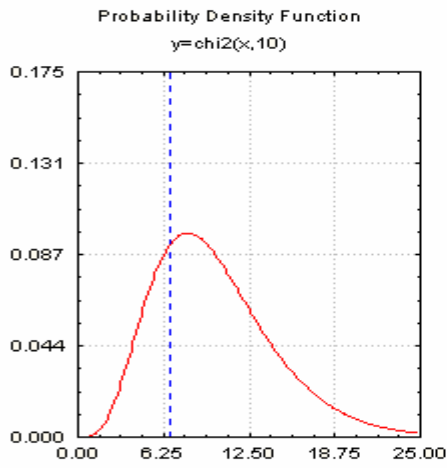
(2) Operating Profit Ratio :-

This ratio indicates the relationship between operating Profit and net sales in the form of Percentage. Operating Profit arrived at by adjusting all non - operating expenses and incomes in net profit , in the other words , we can say profits before depreciation and taxes. A consistently high ration tells us the effective and efficient operation of the business. It is calculated as below :

Operating profit Ratio = operating Profit / Net sales * 100

Table 3.2 depicts the overall position of operating profit margin   in cement companies under study.

Table No 3.2 Operating Profit Ratio (Rs.crores) (1995-96 TO 2002-03)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	29.42	22.24	10.71	14.9	18.62	9.32	8.24	24.69	17.2675
Damodhar Cement & Slag Ltd.	-4.72	-6.74	-0.09	8.81	-4.15	4.21	0.39	2.73	0.055
Ambuja Cement Eastern Limited	-17.62	-2.09	-37.34	-66.62	-13.87	-54.58	2.42	10.52	-22.3975
Birla Corporation Ltd.	85.11	15.51	-32.23	-30.09	-10.77	8.88	8.63	8.35	6.67375
YEARLY AVERAGE	23.0475	7.23	-14.738	-18.25	-2.5425	-8.0425	4.92	11.5725	0.399688
Western Region									
Saurashtra Cement Limited	33.38	29.8	6.16	16.4	-2.76	-30.66	-29.19	-29.31	-0.7725
Gujarat Ambuja Cement Ltd	83.97	200.11	189.47	223.17	228.01	241.16	310.35	302.11	222.2938
Gujarat Sidhee Cement Ltd.	47.77	7.18	-4.98	-42.98	-52.01	-59.04	-11.32	-12.89	-16.0338
YEARLY AVERAGE	55.04	79.03	63.55	65.53	57.74667	50.48667	89.94667	86.63667	68.49583
Northern Region									
Shree Cement Limited	18.4	37.46	38.51	40.86	39.3	48.37	29.3	33.11	35.66375
Associated Cement Cos. Ltd.	301.67	139.83	-14.68	37.26	-1.59	146.9	242.52	129.71	122.7025
YEARLY AVERAGE	160.035	88.645	11.915	39.06	18.855	97.635	135.91	81.41	79.18313
Southern Region									
Priyadarshini Cement Limited	23.92	32.02	32.38	24.93	11.73	12.68	28.38	4.39	21.30375
Shri Vishnu Cement Limited	18.97	22.08	12.97	6.26	-1.53	10.81	3.78	-7.6	8.2175
Madras Cements Ltd.	107.35	99.77	108.7	108.23	102.03	122.19	114.35	88.02	106.33
Chettinad Cement Corpn. Limited	41.61	43.68	36.03	34.1	27.52	37.81	30.93	16.09	33.47125
Dalmia Cement (Bharat) Limited	51.95	49.87	45.89	31.2	34.52	51.74	52.25	23.17	42.57375
Deccan Cements Limited	5.94	6.16	11.04	9.18	8.13	10.25	9.79	6.72	8.40125
YEARLY AVERAGE	41.6233	42.2633	41.1683	35.65	30.4	40.9133	39.9133	21.79833	36.71625
Rest of Region									
Shree Digvijay Cement Limited	-9.49	5.84	-7.83	-19.35	-54.46	-13.56	-13.99	-12.39	-15.6538
Cement Corporation of India Limited	-43.06	-127.94	-131.42	-125.09	-142.21	-149.65	-119.78	-99.33	-117.31
YEARLY AVERAGE	-26.275	-61.05	-69.625	-72.22	-98.335	-81.605	-66.885	-55.86	-66.4819

Source :- Computed from the annual reports and accounts of the

respective companies from march –96 to March – 03.

Eastern Region witnessed a fluctuating trend in operating profit ratio during the period under study. It was Rs. 23.04 Crores in March – 1996 , which heavily decreased to Rs. 7.23 crores in March – 1997 and reached Rs. 14.73 crores in March – 1998 and finally, It stood the level of Rs. 11.57 crores in March – 03. The reason for decreasing the ratio in March – 99 was due to high operating expenses, huge amount of Excise Duty, High rate of wages and salaries etc. According to years, the operating profit ratio of OCL, Damodhar, Ambuja and Birla Companies gained the average profit worth Rs. 0.39 crores.

In **Western Region**, the average ratio was Rs.68.49 crores. It was Rs. 55.04 crores in March – 96 which heavily increased to Rs. 79.03 crores in March – 97 and finally, it stood the level of Rs. 86.63 crores in March – 03. In the western region , Saurashtra cement Ltd. was incurred loss worth Rs. 0.77 crores. Gujarat Ambuja cement Ltd. was earned worth Rs. 222.29 crores and sidhee cement Ltd., was incurred the loss worth Rs. 16.03 crores.

The ratio in **Northern Region** showed a fluctuating trend during the study period. It was Rs. 160.03 crores in March – 96 , which heavily decreased to Rs. 88.64 crores in March – 97 and reached Rs. 135.91 crores in March – 02 and finally, it

stood the level of Rs. 81.41 crores in March – 03. The average ratio of Northern Region was Rs. 79.18 crores. The average ratio was topper in all the regions. It can be concluded that the performance of this region was satisfactory.

It is evident from table 3.2 that in **_Southern Region_** average operating profit ratio was Rs. 36.71 Crores. The average operating profit ratio of Madras Cements Ltd. was Rs. 106.33 crores which was highest among all the units of this region. On the other hand the operating profit ratio of Shri Vishnu Cement Ltd. was Rs. 8.21 crores which was lowest among all the units of this region. The Average ratio of Chettinad Cement Corp. Ltd. and Dalamia Cement (Bharat) Ltd. were satisfactory.

In the **_Rest of the Regions_**, the operating ratio registered fluctuating trend. The average ratio of this region was lower than industry ratio. The performance of Shree Digvijay Cement Ltd. was very poor because its average ratio was Rs. 15.65 crores. In Cement Corporation of India Ltd. the operating ratio was negative in all the years of study period. The average ratio of Rest of region was Rs. 66.48 crores.

On the whole, the performance of Western region and Northern region was better than Eastern region, Southern region and Rest of the regions.

Chart No 3.2 (A)

Operating Profit - Eastern Region (Rs. Crores)

Chart No 3.2 (AA)

Operating Profit Ratio - Eastern Region (Rs. Crores)

Chart No 3.2 (B)

Opreting Profit-Western Region (Rs. Crores)

Chart No 3.2 (BB)

Operating Profit Ratio - Western Region (Rs.Crores)

Chart No 3.2 (C)

Operarting Profit- Northern Region (Rs. Crores)

Years 1995-96 to 2002-03

operating profit (Rs.crores)

- ■ Associated Cement Cos. Ltd.
- ☐ Shree Cement Limited

Chart No 3.2 (CC)

Operating profit Ratio - Northern Region (Rs. Crores)

Chart No 3.2 (D)

Opretaing Profit -Southern Region (Rs. Crores)

Deccan Cements Limited

Dalmia Cement (Bharat) Limited

Chettinad Cement Corpn. Limited

Madras Cements Ltd.

Shri Vishnu Cement Limited

Priyadarshini Cement Limited

Years 1995-96 to2002-03
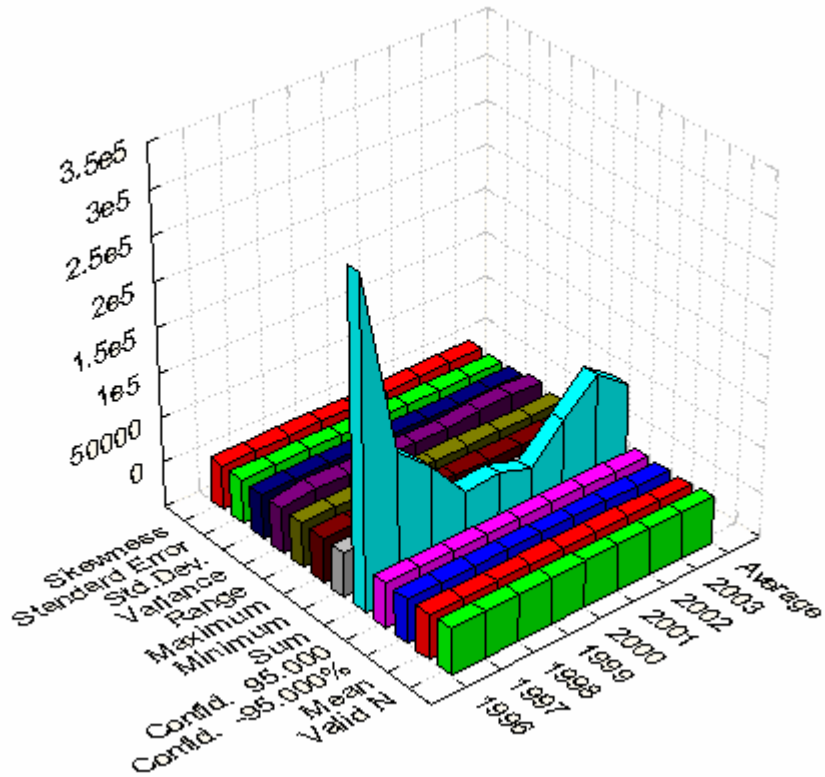
Operating Profit (Rs. Crores)
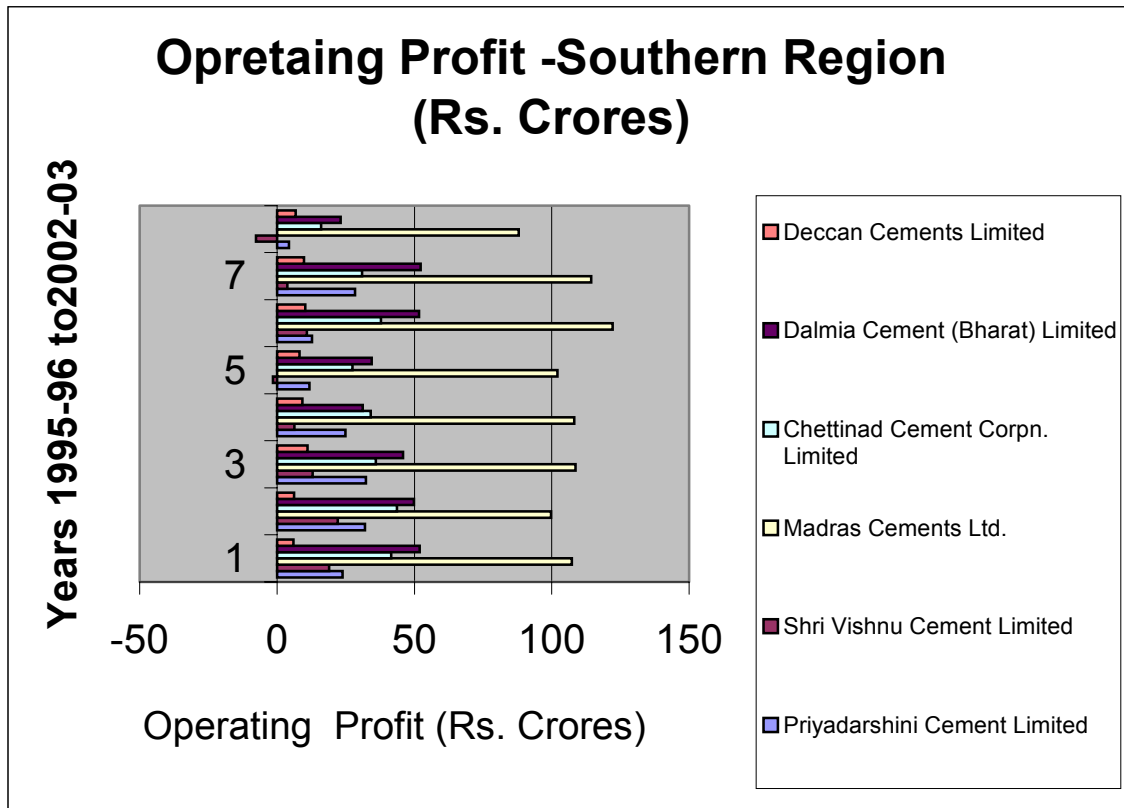
Chart No 3.2 (DD)

Operating Profit Ratio - Southern Region (Rs.Crores)

Chart No 3.2 (E)

Operating Profit -Rest of the Regions(Rs.crores)
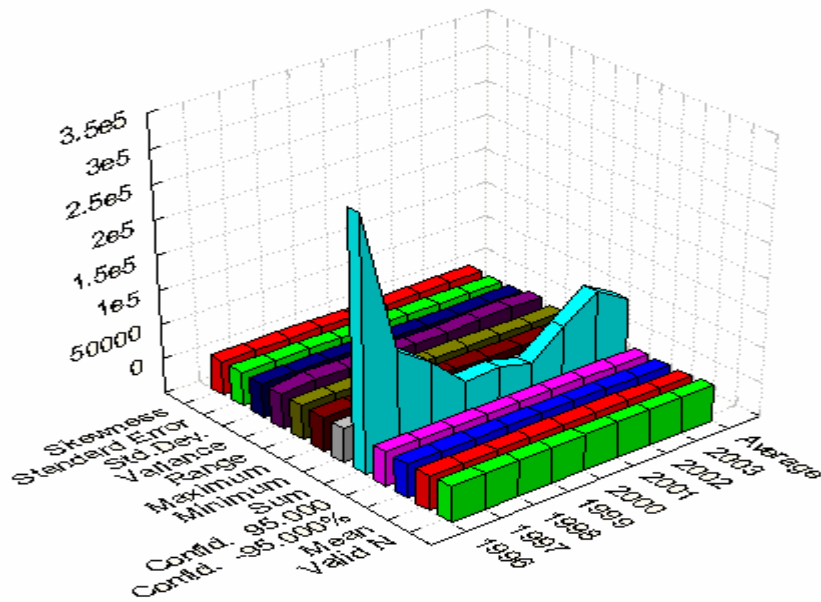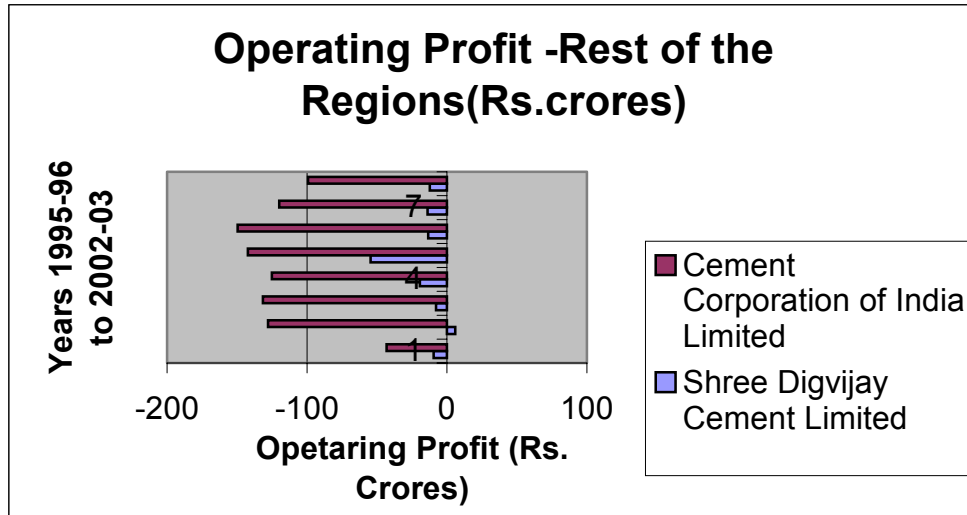
Chart No 3.2 (EE)

Oprating Profit Ratio - Rest of the Regions (Rs. Crores)
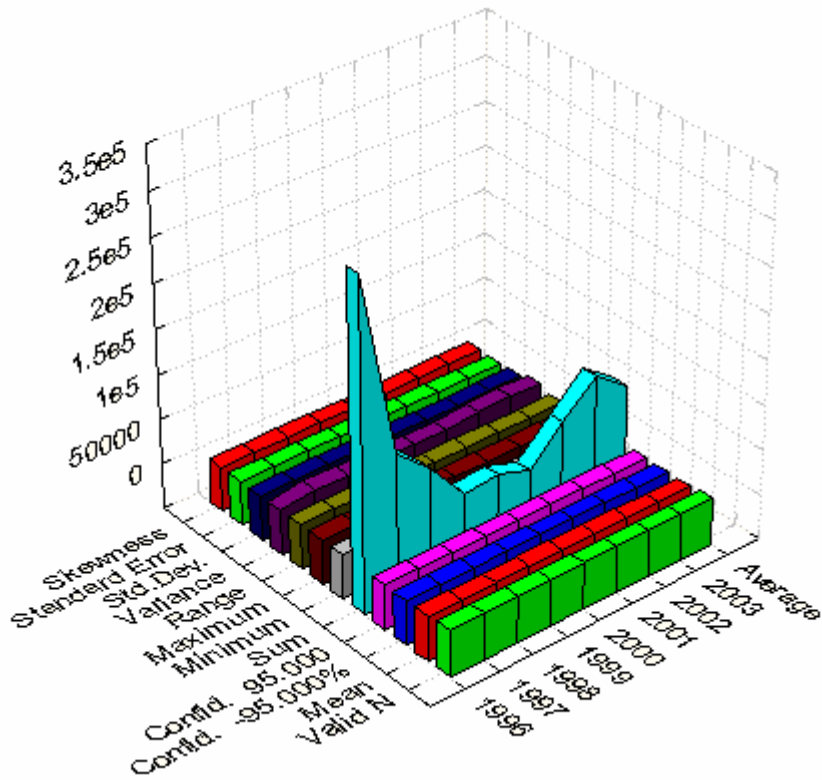
Operating Profit Ratio – Anova Test ► Chi^2 – Test, F – Test, Z (Normal) – Test
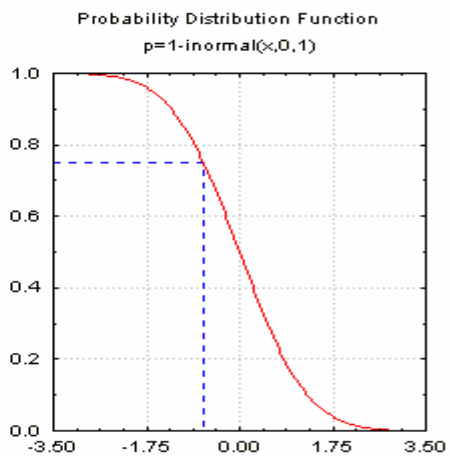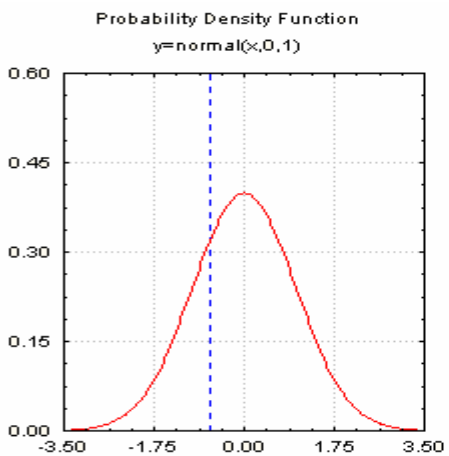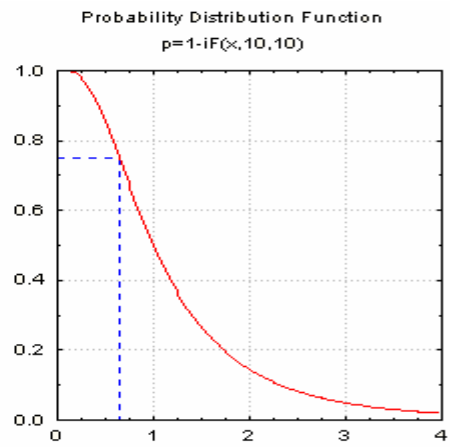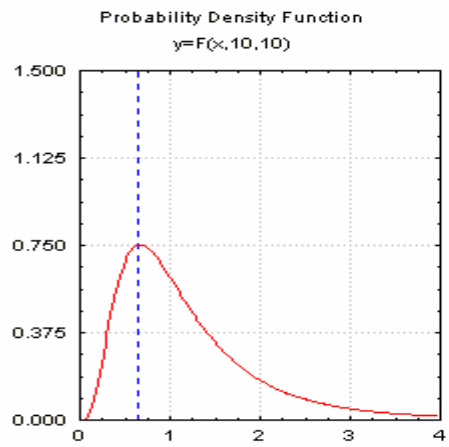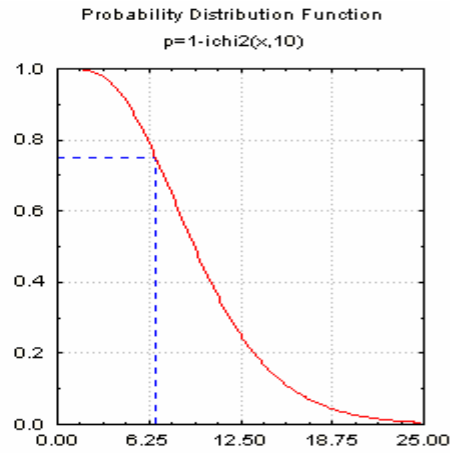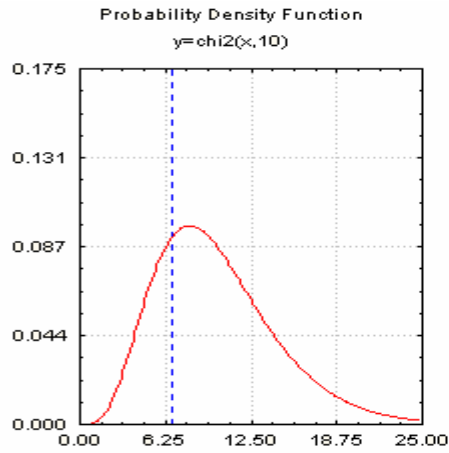
(3) Return On Investment Ratio:-

The Return on Investment (ROI) is a very useful technique to measure the profitability of all financial resources employed in the business enterprises assets. ROI reveals a vital indication of the profitability in term of employment of capital in the business. In other words this ratio measures the earning power of the business.

In the present study, for computing the Return on Investments operating Profits before depreciation, interest and tax has been taken as profit.

Further income from investment on outside business and non trading activities are excluded from it. ROI is calculated on the basis of the following formula :

ROI = Operation Profit (Before Depreciation, Interest And
        Tax)   / Investment * 100

Table 3.3 Shows Return on Investment Ratio in cement companies under study :-

THE 3.3 : Return On Investment Ratio (PBDIT) (Rs. Crores)
(March-'96 to March-'03)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	49.78	44.81	41.82	40.85	37.49	33.69	33.11	49.37	41.365
Damodhar Cement & Slag Ltd.	-2.03	32.78	3.56	13.08	-0.41	7.86	4.18	8.3	8.415
Ambuja Cement Eastern Limited	13.75	29.4	-56.14	147.92	25.73	-15.56	37.06	61.36	30.44
Birla Corporation Ltd.	134.96	85.41	29.42	37.68	46.51	66.15	70.7	73.89	68.09
YEARLY AVERAGE	49.115	48.1	4.665	59.8825	27.33	23.035	36.2625	48.23	37.0775
Western Region									
Saurashtra Cement Limited	44.17	36.6	23.63	40.64	27.43	3.05	9.51	-3.38	22.70625
Gujarat Ambuja Cement Ltd	165	267.2	301.28	370.39	403.22	705.47	478.49	477.64	396.0863
Gujarat Sidhee Cement Ltd.	53.29	25.94	14.19	-25.19	-49.95	-22.12	7.46	179.75	22.92125
YEARLY AVERAGE	87.48667	109.9133	113.0333	128.6133	126.9	228.8	165.1533	218.0033	147.2379
Northern Region									
Shree Cement Limited	33.58	56.99	60.6	63.75	79.38	90.01	83.36	108.53	72.025
Associated Cement Cos. Ltd.	447.95	285.26	220.81	331.32	225.81	373.08	462.98	417.83	345.63
YEARLY AVERAGE	240.765	171.125	140.705	197.535	152.595	231.545	273.17	263.18	208.8275
Southern Region									
Priyadarshini Cement Limited	26.82	33.66	37.93	32.25	21.57	31.53	50.09	29.8	32.95625
Shri Vishnu Cement Limited	23.64	25.9	20.92	13.59	6.18	19.05	12.82	0.9	15.375
Madras Cements Ltd.	134.67	140.14	156.74	150.62	151.9	175.93	180.87	155.1	155.7463
Chettinad Cement Corpn. Limited	63.57	70.75	62.84	58.65	62.41	54.2	51.19	67.62	61.40375
Dalmia Cement (Bharat) Limited	77.66	75.71	74.81	72.16	74.56	88.35	85.4	74.79	77.93
Deccan Cements Limited	13.27	13.74	16.06	13.02	6.33	13.89	14.08	12.01	12.8
YEARLY AVERAGE	56.605	59.9833	61.55	56.715	53.825	63.825	65.7417	56.70333	59.36854
Rest of Region									
Shree Digvijay Cement Limited	32.49	19.19	2.79	-3.89	-77.74	16.81	9.71	23.22	2.8225
Cement Corporation of India Limited	-39.65	12.55	-31.52	124.46	-55.65	-71.91	-79.28	-38.06	-22.3825
YEARLY AVERAGE	-3.58	15.87	-14.365	60.285	-66.695	-27.55	-34.785	-7.42	-9.78

SOURCE : Computed from the annual reports and accounts of the respective companies from March-'96 to March – '03.

The Return On Investment Ratio in **_Eastern region_** registered a fluctuating trend. It was Rs. 48.10 Crores in March – 97 as compared to March – 96 Showing an decreasing trend and reached Rs. 27.33 Crores in March – 2000 and finally in March – 03 it stood with Rs. 49.23 Crores The average rate of Return on Investment of this region was Rs. 37.07 Crores.

Western Region also recorded a fluctuating trend in rate of Return on Investment during study period. It was Rs. 87.48 Crores in March – 96 which went up Rs. 113.03 Crores in March – 98 and increased to Rs. 228.8 Crores in March – 01 and finally in March – 03 it stood with Rs. 218.03 . The average rate of Return on Investment of this region was Rs. 147.23 Crores.

The rate of Return on Investment in **_Northern Region_** registered a fluctuating trend. It varied between Rs. 140.70 Crores in March – 98 and Rs. 273.17 Crores in March – 02. The average rate of Return on Investment of this region was Rs. 208.82 Crores. It was Rs. 240.76 Crores in March – 96 and finally in march – 03 if stood with Rs. 261.18 crores.

Southern Region also recorded a fluctuating trend in rate of Return on Investment during study period. It was Rs. 56.60 Crores in March – 96 which went up to Rs. 63.82crores in March – 01. then after it showed a decreased trend in March – 03 , it was Rs. 56.70crores. The average rate of Return on Investment of this region was Rs. 59.36crores.

Rest of the Regions, the rate of Return on Investment showed a fluctuating trend. The average rate of Return on Investment of this region was Rs. - 9.78 crores, which was lowest and poor among all the regions. The average rate of Return on Investment of Shree Digvijay Cement Ltd. was Rs. 2.82 crores. The average rate of Cement Corp. of India Ltd. was Rs. – 22.38 crores.

Chart No 3.3 (A)

ROI Ratio- Eastern Region (PBDIT)
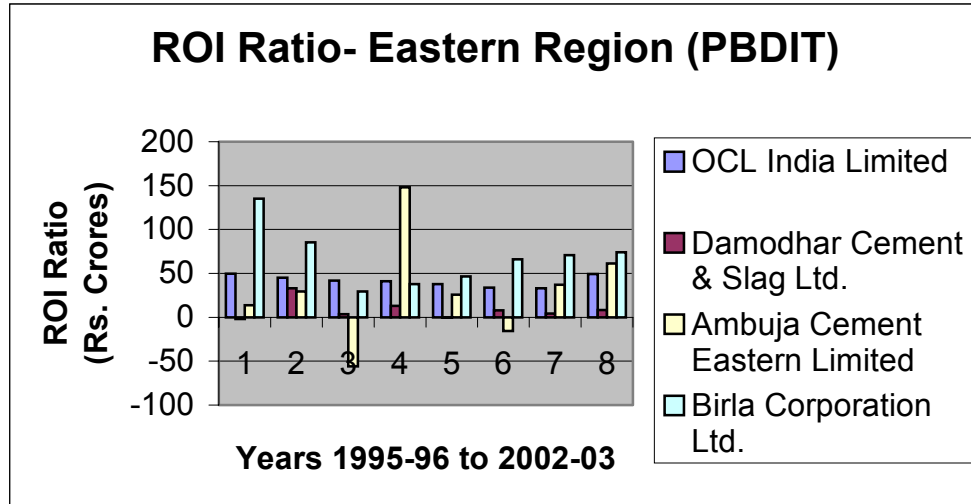
Chart No 3.3 (AA)

ROI Ratio (PBDIT) - Eastern Region (Rs. Crores)

Chart No 3.3 (B)
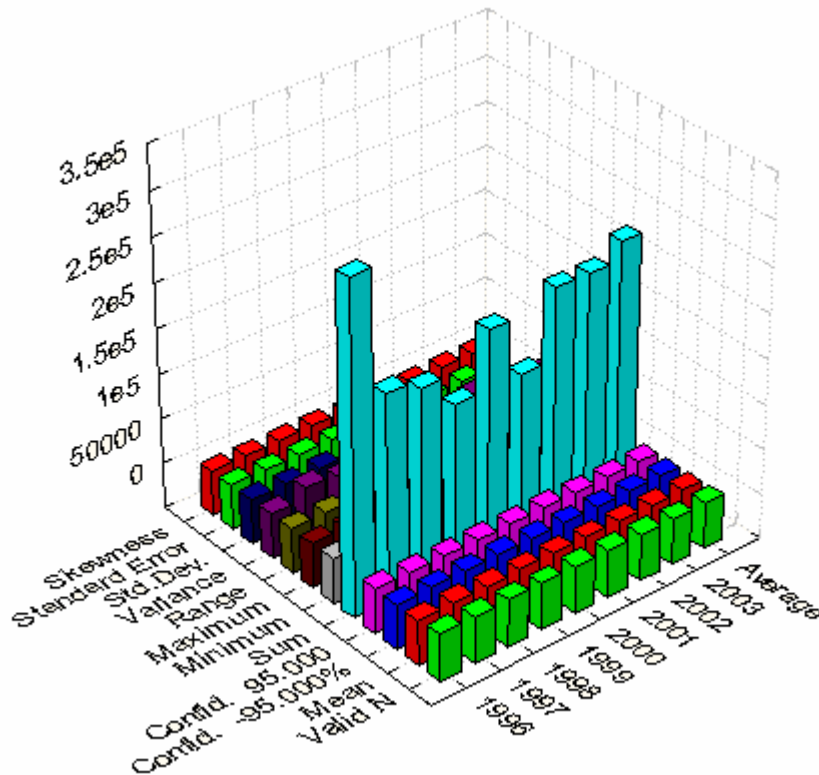
ROI Ratio-Western Region (PBDIT)
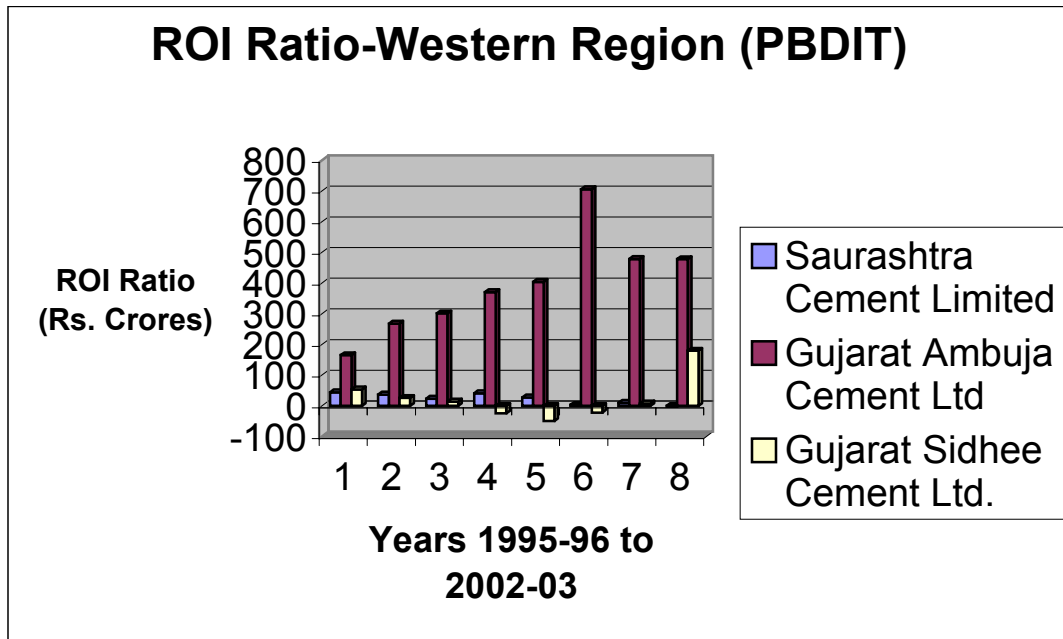
Chart No 3.3 (BB)

ROI Ratio (PBDIT) - Western Region (Rs. Crores)

Chart No 3.3 (C)

ROI Ratio- Northern Region (PBDIT)
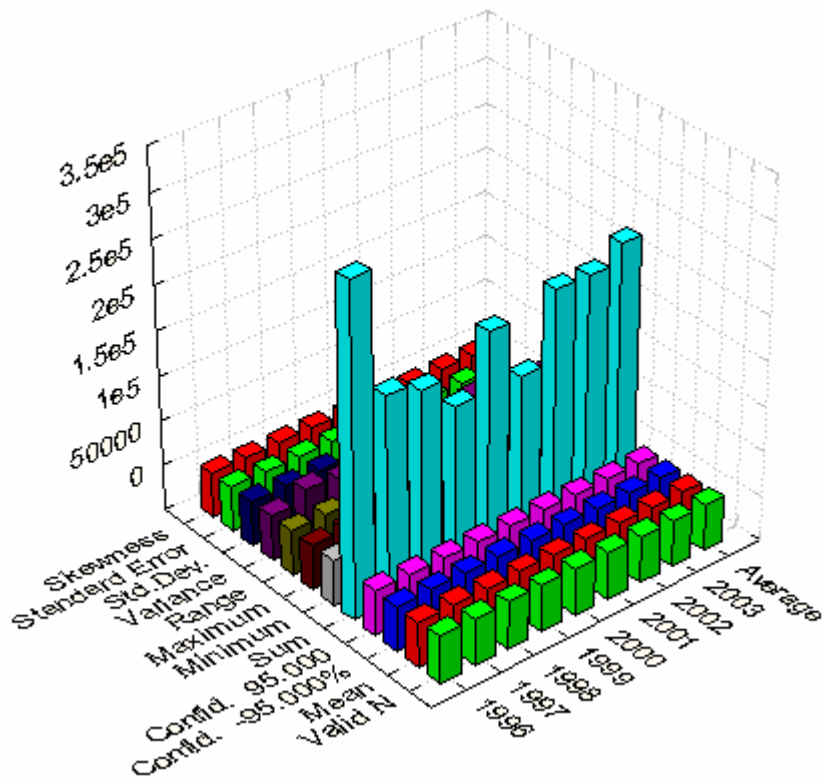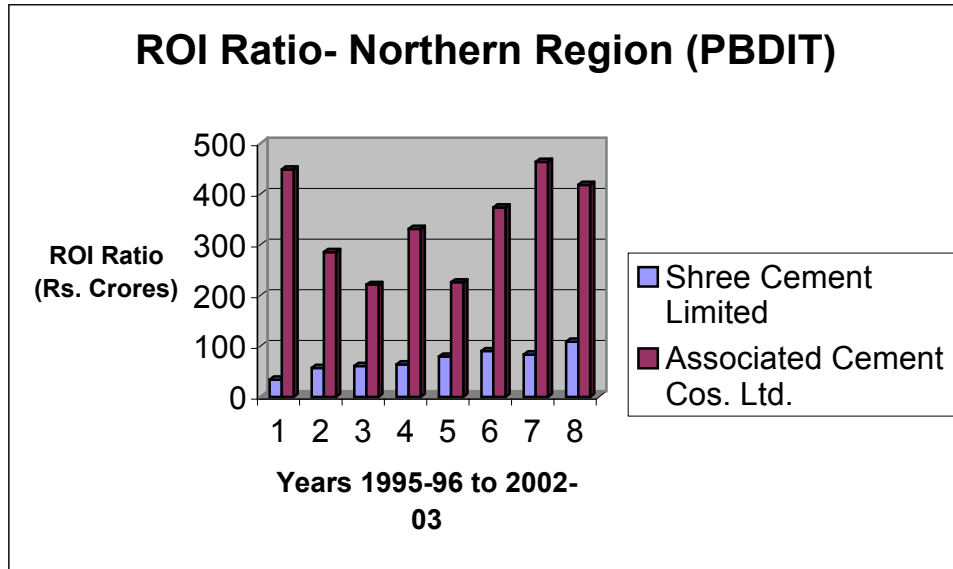
Chart No 3.3 (CC)

ROI Ratio (PBDIT) - Northern Region (Rs. Crores)
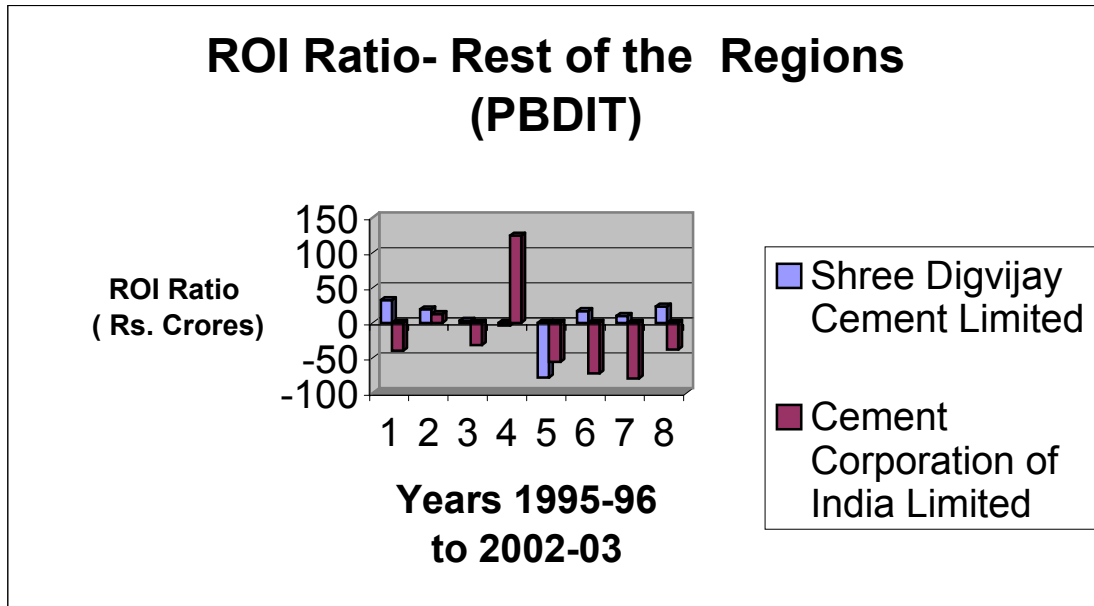
Chart No 3.3 (D)

ROI Ratio -Southern Region (PBDIT)

Chart No 3.3 (DD)

ROI Ratio (PBDIT) - Southern Region (Rs. Crores)

Chart No 3.3 (E)

Chart No 3.3 (EE)
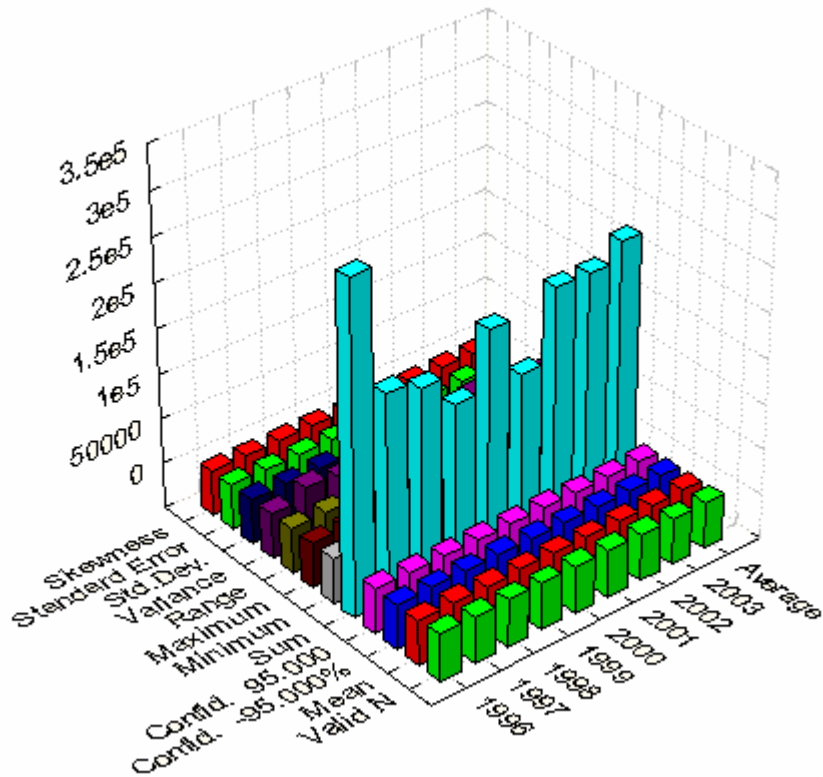
ROI Ratio – Anova Test ► Chi^2 – Test, F – Test, T (Student) – Test :
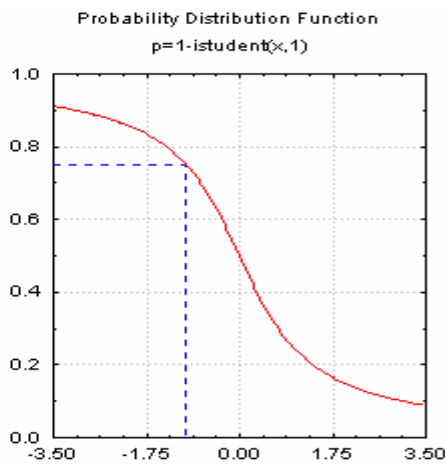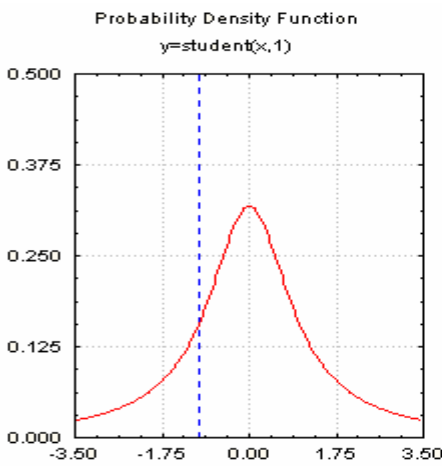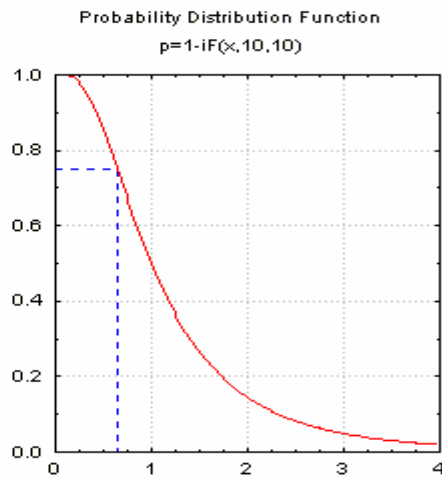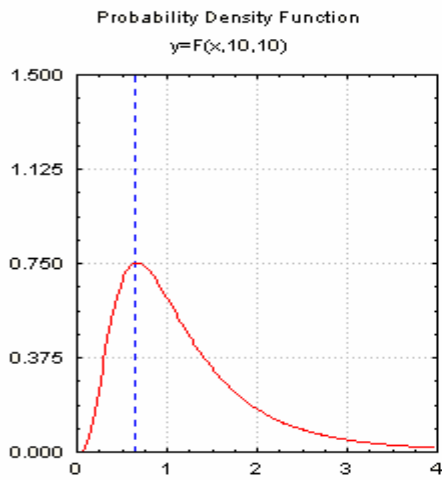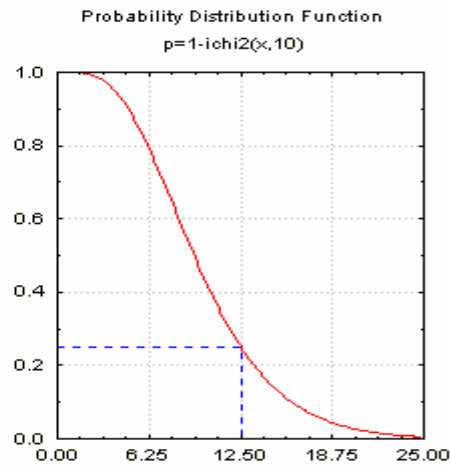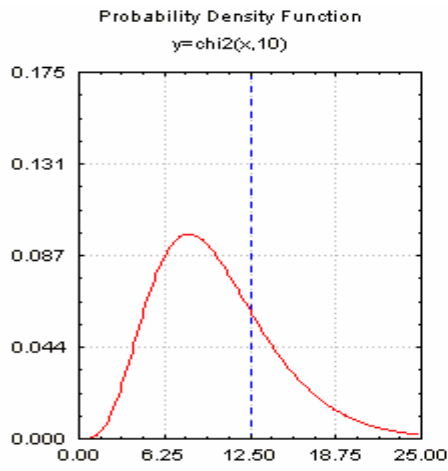
(4) Net Profit Ratio :-

Net profit margin indicates the management's ability to earn sufficient profits on sales not only to cover all revenue operating expenses of the business, the cost of borrowed funds and the cost of merchandising of servicing, but also to have a sufficient margin to pay reasonable compensation to shareholders on their contribution to the firm.

This ratio is an effective measure to check the profitability of a business. Depending upon the concept of net profit margin, the ratio can computed as under :

Net Profit Ratio =   Net Profit / sales * 100

Table 3.4 clears the position regarding the net profit ratio in the selected unit of cement Industry.

TABLE 3.4 NET PROFIT RATIO (RS. CRORES)
CEMENT INDUSTRY UNDER THE STUDY (1995-'96 TO 2002-'03)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	20.63	11.49	1.39	3.83	5.79	6.15	6.74	18.33	9.29375
Damodhar Cement & Slag Ltd.	-14.91	30.24	0.85	8.78	-5.09	2.47	-0.78	1.97	2.94125
Ambuja Cement Eastern Limited	-44.44	-36.36	-126.46	120.89	1.33	-41.65	6.89	11.83	-13.4963
Birla Corporation Ltd.	43.77	7.36	-51.73	-53.62	-38.36	-14.17	-0.76	4.19	-12.915
YEARLY AVERAGE	1.2625	3.1825	-43.988	19.97	-9.0825	-11.8	3.0225	9.08	-3.54406
Western Region									
Saurashtra Cement Limited	22.4	9.39	-14.87	1.32	-13.2	-40.05	-38.38	-53.36	-15.8438
Gujarat Ambuja Cement Ltd	99.1	141.56	132.11	130.18	150.56	427.88	192.96	178.93	181.66
Gujarat Sidhee Cement Ltd.	17.94	-5.62	-15.8	-55.47	-69.44	-61.41	-30.78	163.67	-7.11375
YEARLY AVERAGE	46.48	48.44333	33.81333	25.34333	22.64	108.8067	41.26667	96.41333	52.90083
Northern Region									
Shree Cement Limited	22.26	33.33	35.54	8.54	5.83	15.35	1.47	7.63	16.24375
Associated Cement Cos. Ltd.	226.78	74.99	13.44	56.84	-61.34	56.34	130.43	103.89	75.17125
YEARLY AVERAGE	124.52	54.16	24.49	32.69	-27.755	35.845	65.95	55.76	45.7075
Southern Region									
Priyadarshini Cement Limited	12.23	20.69	21.04	13.34	6.44	-8.8	2.61	-12.04	6.93875
Shri Vishnu Cement Limited	9.61	10.47	6.05	1.48	-7.23	6.84	0.23	-12.92	1.81625
Madras Cements Ltd.	88.15	77.04	31.97	31.85	37.84	44.33	25.66	12.96	43.725
Chettinad Cement Corpn. Limited	31.12	21.29	10.6	9.16	6.44	7.41	-11.51	-6.99	8.44
Dalmia Cement (Bharat) Limited	38.1	29.1	26.19	20.12	21.14	28.8	25.46	19.99	26.1125
Deccan Cements Limited	7.75	6.85	8.17	6.44	0.96	6.7	6.08	1.36	5.53875
YEARLY AVERAGE	31.16	27.5733	17.3367	13.7317	10.9317	14.2133	8.08833	0.393333	15.42854
Rest of Region									
Shree Digvijay Cement Limited	16.53	2.47	-16.23	-21.82	-113.33	-22.67	-32.28	-21.4	-26.0913
Cement Corporation of India Limited	-104.75	-159.41	1.5	-184.94	-216.91	-230.76	-215.33	-215.36	-165.745
YEARLY AVERAGE	-44.11	-78.47	-7.365	-103.38	-165.12	-126.715	-123.805	-118.38	-95.9181

SOURCE : Computed from the reports and accounts of the respective companies from 1995-'96 to 2002-'03.

The Table 3.4 shows that in **_Eastern Region_** , the Net Profit Ratio reveals the significant fluctuating trend. The average ratio of Eastern Region was Rs. 3.54 crores. In march – 96 the Net Profit Ratio was Rs. 1.26 crores, then after it showed decreased in march – 98 Rs. – 43.98 crores. and finally it stood with march – 03 Rs. 9.08 crores.

The Net Profit ratio in **_Western Region_** also witnessed a fluctuating trend. The average Net Profit Ratio of Western Region was Rs. 52.90 crores. The Performance of Gujarat Ambuja Cement Ltd. was satisfactory because it's average ratio was Rs. 181.66 crores. The average ratio of saurashtra cement Ltd. and Gujarat Sidhee Cement Ltd. was negative. It indicated poor Performance.

In **_Northern Region_** Net Profit Ratio was Rs. 124.52 crores in March – '96. Then after it showed decreasing till march – 2000 and reached Rs. - 27.75 crores and finally it stood with Rs. 55.76 crores in march – '03. The average ration of this region was Rs. 45.70 crores. Performance of all units was satisfactory in last three years of study period.

The ratio in **_Southern Region_** declined in first five years of the period under review and reached Rs. 10.93 crores in march 2000 from Rs. 31.16 crores in march – '96. Then after it increased and reached at Rs. 14.21 crores in march – 2001.

At finally it stood at Rs. 0.39 crores. The average ratio of this region was Rs. 15.42 crores.

In **Rest of the Regions** the Net Profit ratio registered fluctuating trend. The average ratio of this region was Rs. – 95.91 crores. The average ration of this region was lower and negative than Industry ratio. The performance of Cement Corporation of India Ltd. was very poor because its average ratio was Rs. – 165.74 crores.

Chart No 3.4 (A)

Net Profit Ratio -Eastern Region

Legend:
- Birla Corporation Ltd.
- Ambuja Cement Eastern Limited
- Damodhar Cement & Slag Ltd.
- OCL India Limited

X-axis: Net Profit Ratio (Rs. Crores)
Y-axis: Years 1995-96 to 2002-03)

Chart No 3.4 (AA)

Net Profit Ratio - Eastern Region (Rs. Crores)

Chart No 3.4 (B)

Net Profit Ratio- Western Region
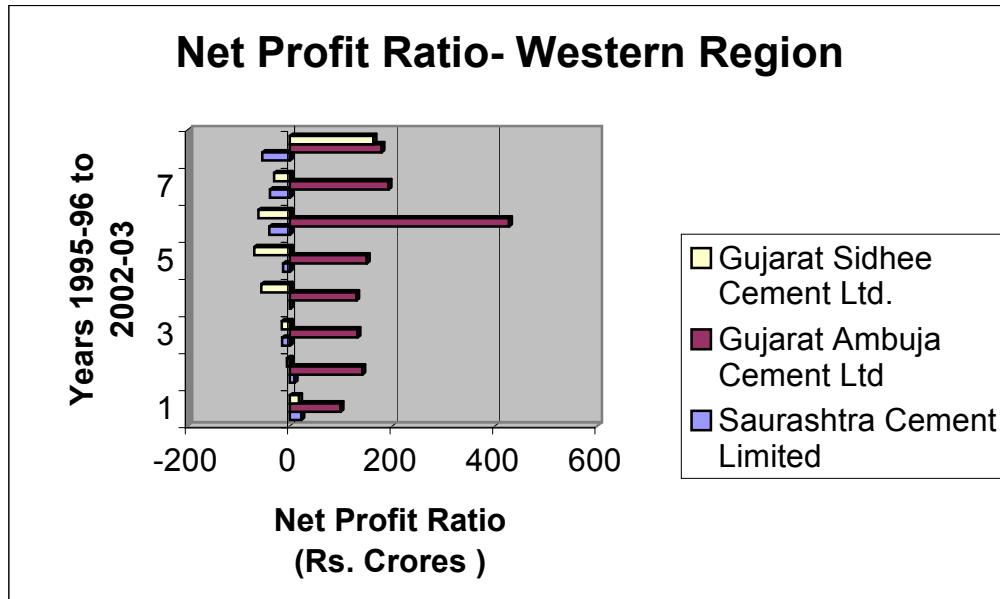
Chart No 3.4 (BB)

Net Profit Ratio - Western Region (Rs. Crores)

Chart No 3.4 (C)

Net Profit Ratio- Northern Region

Legend:
- Associated Cement Cos. Ltd.
- Shree Cement Limited

X-axis: Net profit Ratio (Rs. Crores): -100, 0, 100, 200, 300
Y-axis: Years-1995-96 to 2002-03

Chart No 3.4 (CC)

Net Profit Ratio - Northern Region (Rs. Crores)

Chart No 3.4 (D)

Net Profit Ratio- Southern Region
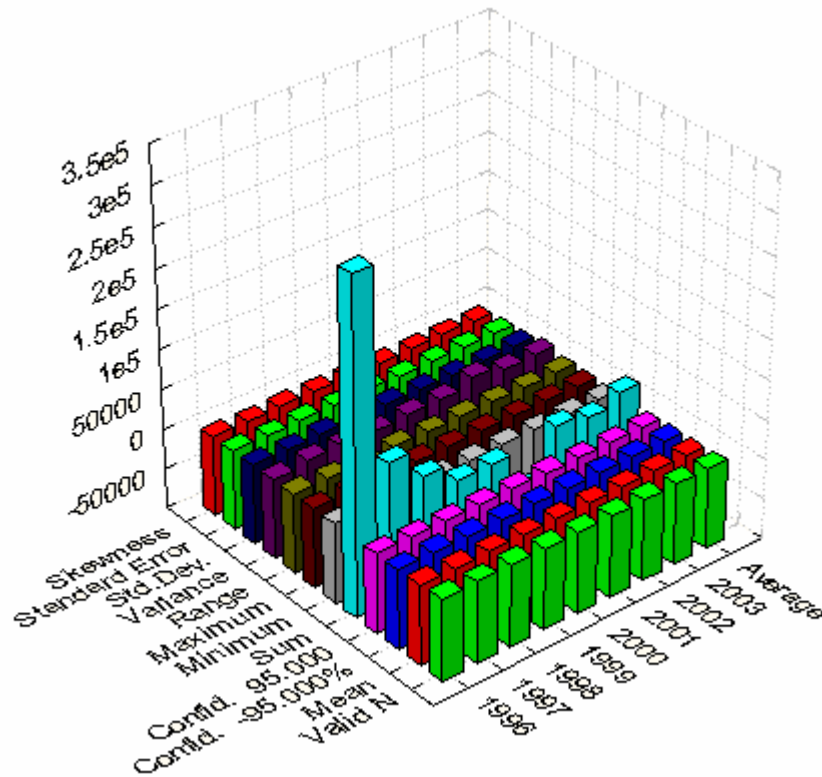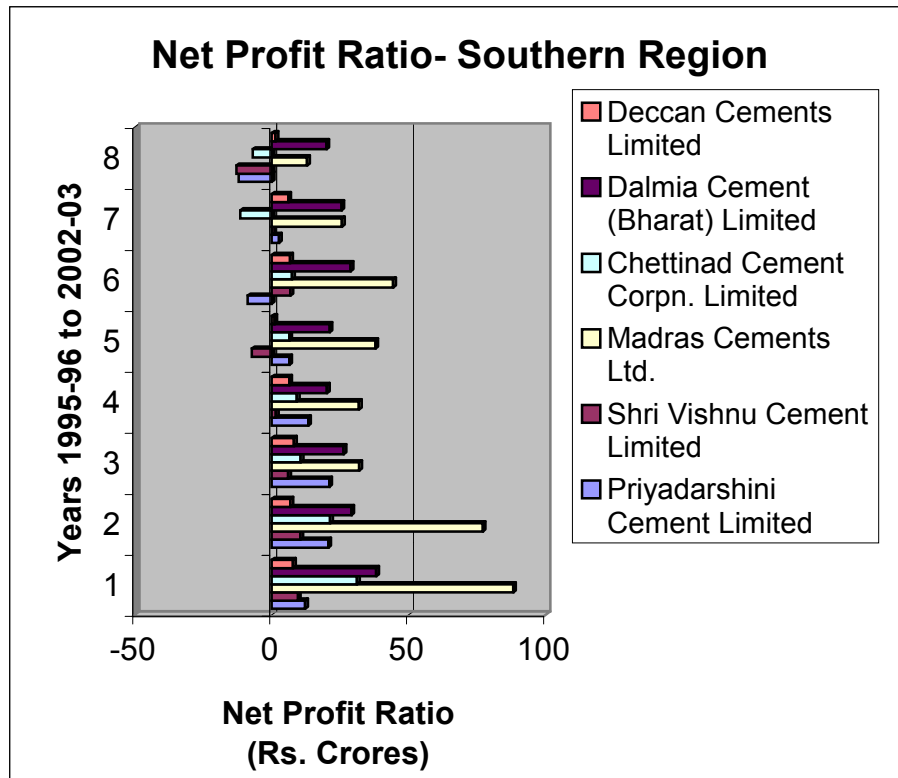
Chart No 3.4 (DD)

Net Profit Ratio - Southern Region (Rs. Crores)

Chart No 3.4 (E)

Net Profit Ratio- Rest of the Regions
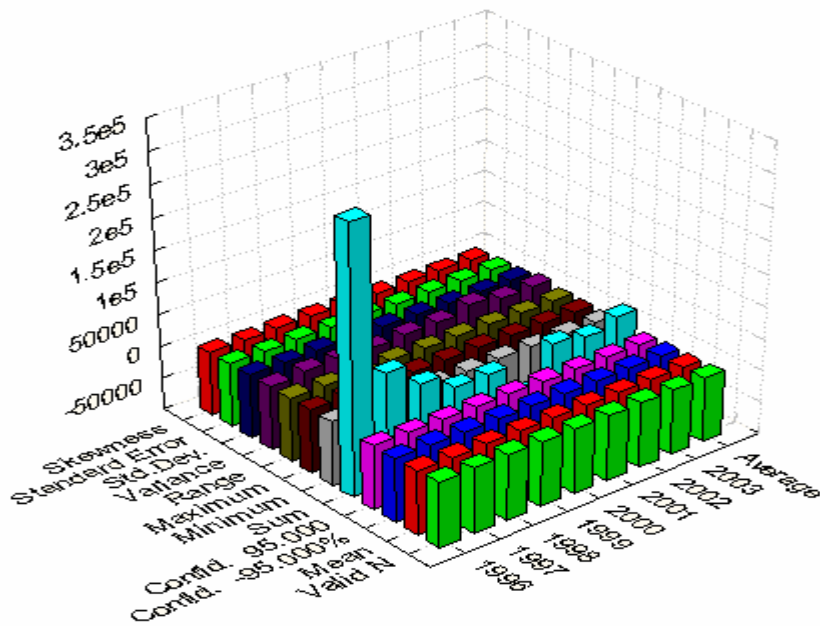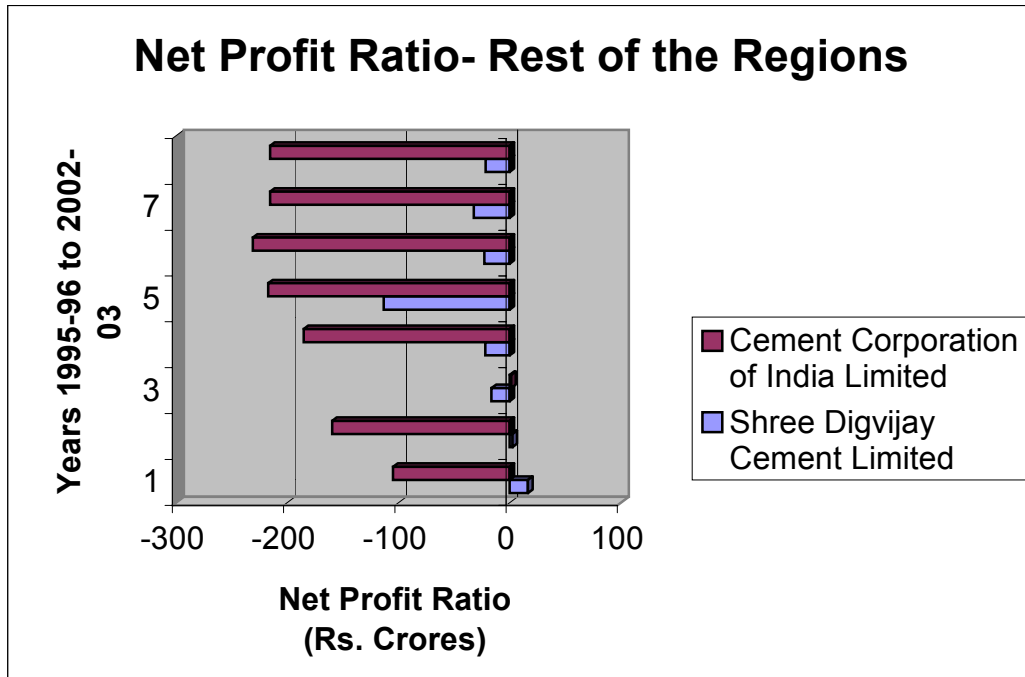
Chart No 3.4 (EE)

Net Profit Ratio - Rest of The Regions (Rs. Crores)
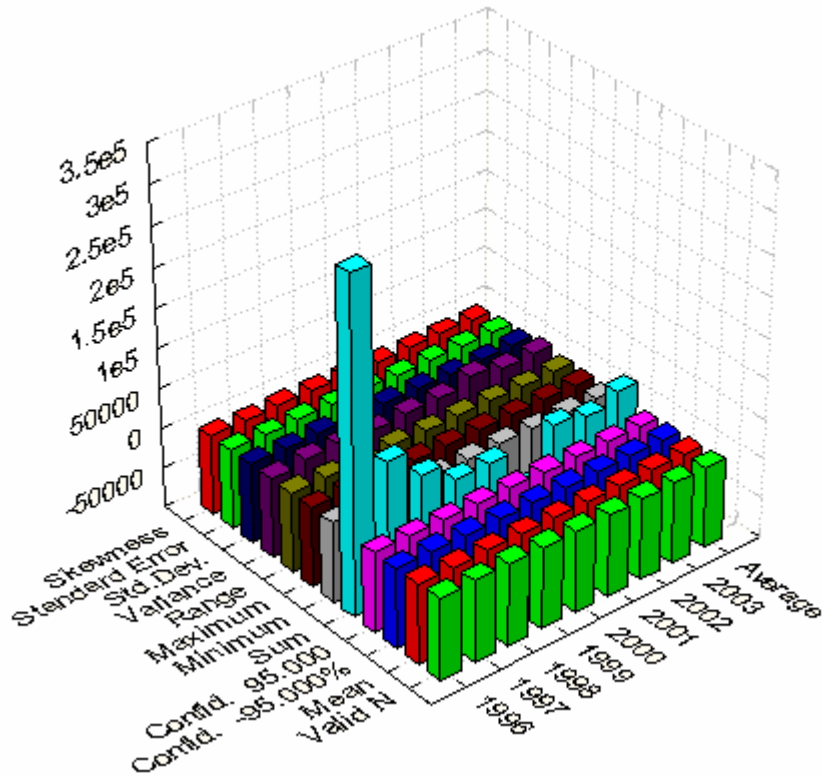
Net Profit Ratio – Anova Test ► Chi^2 – Test, F – Test, Z (Normal) – Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)

Probability Density Function
y=normal(x,0,1)

Probability Distribution Function
p=1-inormal(x,0,1)
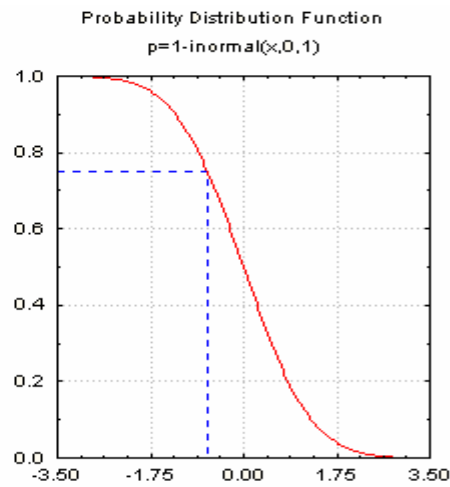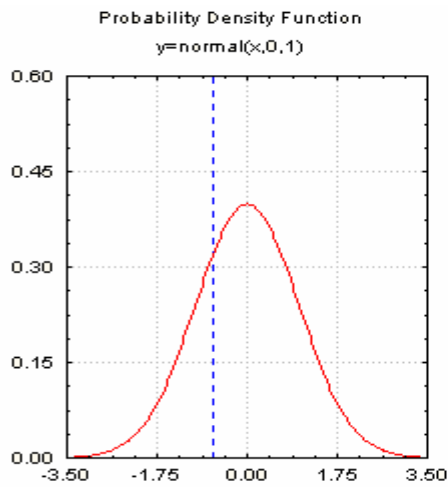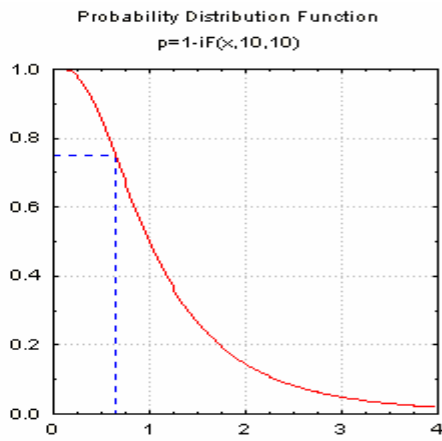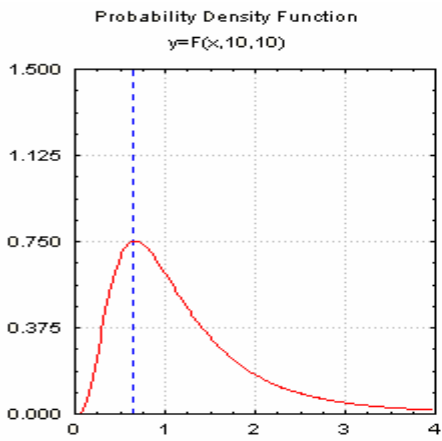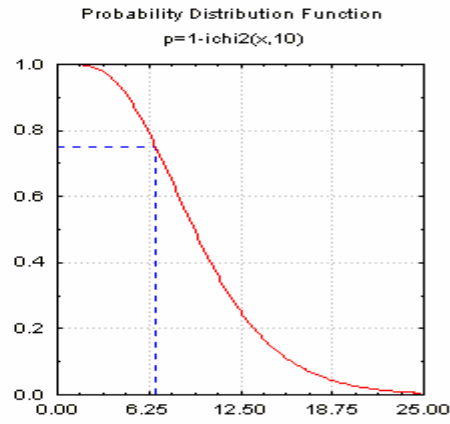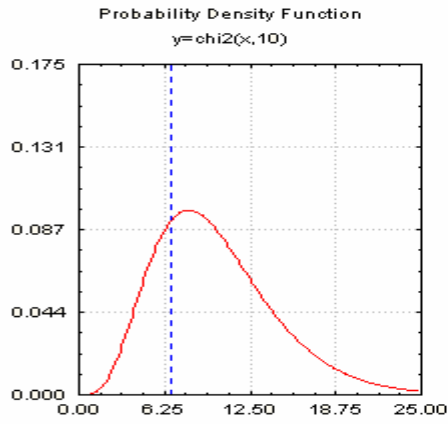
(5) Return on Net Capital Employed:

The Return on Net Capital Employed is a guide to compare the profitability of business. It is also an indicator of proper utilization of net capital employed towards achieving desirable profits.

The ratio is more appropriate for evaluating the efficiency of internal management. A high ratio is a test of better performance and low ratio is an indication of poor performance.

The formula for derivation of this ratio is :

Return on Net Capital Employed = Operating Profit before Interest and Tax/ Net Capital Employed

TABLE 3.5 RETURN ON NET CAPITAL EMLOYED (%) (MARCH – 1996 TO MARCH – 2003)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	27.85	18.64	11.14	10.39	11.43	8.79	7.99	16.45	14.085
Damodhar Cement & Slag Ltd.	31.73	770.27	4.22	33.95	-9.29	16.93	5.27	27.96	110.13
Ambuja Cement Eastern Limited	-10.16	3.88	955.02	-377.82	-1.66	-37.74	5.02	7.89	68.05375
Birla Corporation Ltd.	25.81	10.4	-1.32	-0.63	2.55	4.7	5.63	6.01	6.64375
YEARLY AVERAGE	**18.8075**	**200.798**	**242.265**	**-83.528**	**0.7575**	**-1.83**	**5.9775**	**14.577**	**49.72**
Western Region									
Saurashtra Cement Limited	19.25	16.14	7.32	11.45	3.78	-4.42	-3.17	-3.67	5.835
Gujarat Ambuja Cement Ltd	10.74	16.86	13.91	14	14.43	14.85	12.98	10.9	13.58375
Gujarat Sidhee Cement Ltd.	52.15	15.07	3.14	-31.64	-48.97	-48.58	-7.86	-6.11	-9.1
YEARLY AVERAGE	**27.38**	**16.02333**	**8.123333**	**-2.0633**	**-10.2533**	**-12.7167**	**0.65**	**0.3733**	**3.439**
Northern Region									
Shree Cement Limited	27.88	35.68	16.14	11.59	11.68	13.13	7.21	9.01	16.54
Associated Cement Cos. Ltd.	28.33	12.89	5.84	8.43	4.31	11.77	15.03	9.76	12.045
YEARLY AVERAGE	**28.105**	**24.285**	**10.99**	**10.01**	**7.995**	**12.45**	**11.12**	**9.385**	**14.29**
Southern Region									
Priyadarshini Cement Limited	41.44	47.81	51.66	42.49	25.55	17.69	22.82	8.21	32.20
Shri Vishnu Cement Limited	30.94	36.01	24.31	14.79	2.21	18.88	13.16	-11.71	16.07
Madras Cements Ltd.	34.17	19.89	15.86	15.37	13.59	12.86	11.59	9.93	16.65
Chettinad Cement Corpn. Limited	31.94	22.35	16.42	14.17	11.95	12.46	9.2	5.88	15.54625
Dalmia Cement (Bharat) Limited	27.92	20.36	15.06	12.37	12.62	15.23	15.33	9.97	16.1075
Deccan Cements Limited	22.6	18.97	20.56	15.59	12.47	14.89	13.36	8.67	15.88875
YEARLY AVERAGE	**31.5017**	**27.565**	**23.9783**	**19.13**	**13.065**	**15.335**	**14.2433**	**5.158333**	**18.74708**
Rest of Region									
Shree Digvijay Cement Limited	0.25	16.64	2.67	-14.56	-56.98	4.35	10.45	20.48	-2.0875
Cement Corporation of India Limited	-4.9	-775	0.42	40.08	23.82	19.52	10.5	7.69	-84.7338
YEARLY AVERAGE	**-2.325**	**-379.18**	**1.545**	**12.76**	**-16.58**	**11.935**	**10.475**	**14.085**	**-43.4106**

SOURCE : Computed from the annual reports and accounts of the respective companies from March-'96 to March-'03

Table 3.5 Clearly indicated that rate of Return on Net Capital Employed in **Eastern Region** registered a fluctuating trend. It was 200.79 percent in March – '97 as compared to March – '96 showing an high increasing trend but it went down in the year March – '99 and reached 83.52 percent in March – '99 then it decreased and reached – 1.83 percent in March – 2001 and finally in march – '03 it stood with 14.57 percent. The average rate of Return on Net Capital Employed of this region was 49.72 percent.

Western Region also recorded a fluctuating trend in rate of Return on Net Capital Employed during study period. It was 27.38 percent in March – '96 which declined to 2.06 percent in March – '99. Then it increased and reached at 12.71 percent, then after it showed a decreased trend in march – '02, it was 0.65 percent. The average ratio of this region was 3.43 percent. The reason behind decrease of ratio was decrease in amount of EBIT, where the Volume of capital employed was increased.

The rate of Return on Net Capital Employed in **Northern Region** witnessed a decreasing trend during the first five year of study period. It was 28.05 Percent in March – '96 and reached at 7.99 percent in March – 2000. Then after, it increased and reached, at 12.45 percent in March – '01. In last two year of study it also showed a decreasing trend. In

March – '03 it was 9.38 percent. The average ratio of this region was 14.29 percent.

The rate of Return on Net Capital Employed in **Southern Region** registered a fluctuating trend. It varied between 5.15 percent in March – '03 and 31.50 percent in March – '96. The average rate of Return on Net Capital Employed of this region was 18.74 percent. The average rate of return of Shri Vishnu Cement Ltd., Madras Cement Ltd. , Chettinad Cement Corp. Ltd. , Dalmia Cement Ltd. and Deccnt Cements Ltd. was 16.07 percent , 16.65 percent, 15.54 percent and 16.10 percent were as the southern region average rate was 18.74 percent. On other hand the average rate of Return on Net Capital Employed of Priyadarshini Cement Ltd. was 32.20 percent. It indicated satisfactory rate of return of net capital employed.

In **Rest of the Regions** the rate of Return on Net Capital Employed showed a fluctuating trend. The average rate of return on net capital employed of this region was – 43.41 percent. The average rate of Return on Net Capital Employed of Shree Digvijay Cement Ltd. and Cement Corp. of India Ltd. were – 2.08 percent and – 84.73 percent respectively.

It can be concluded the average rate of Return on Net Capital Employed in this region was very pour and lowest among all the regions.

Chart No 3.5 (A)

Return on Net Capital Employed Ratio · Eastern Region

% Return on Net Capital Emloyed Ratio

Years 1995-96 to 2002-03

Legend:
- Birla Corporation Ltd.
- Ambuja Cement Eastern Limited
- Damodhar Cement & Slag Ltd.
- OCL India Limited
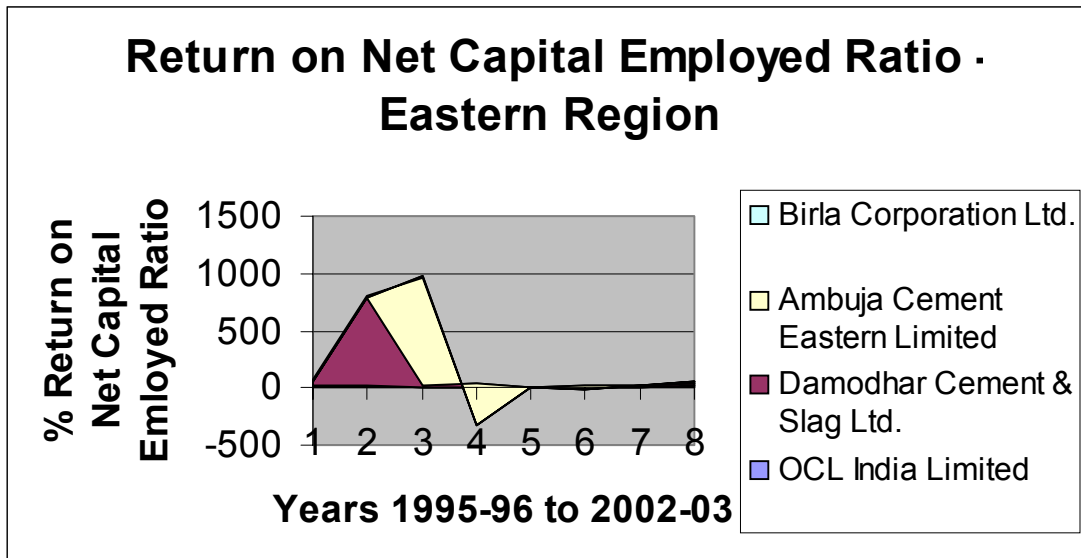
Chart No 3.5 (AA)

Return on Net Capital Employed Ratio- Eastern Region (%)

Chart No 3.5 (B)

Return on Net Capital Employed Ratio - Western Region
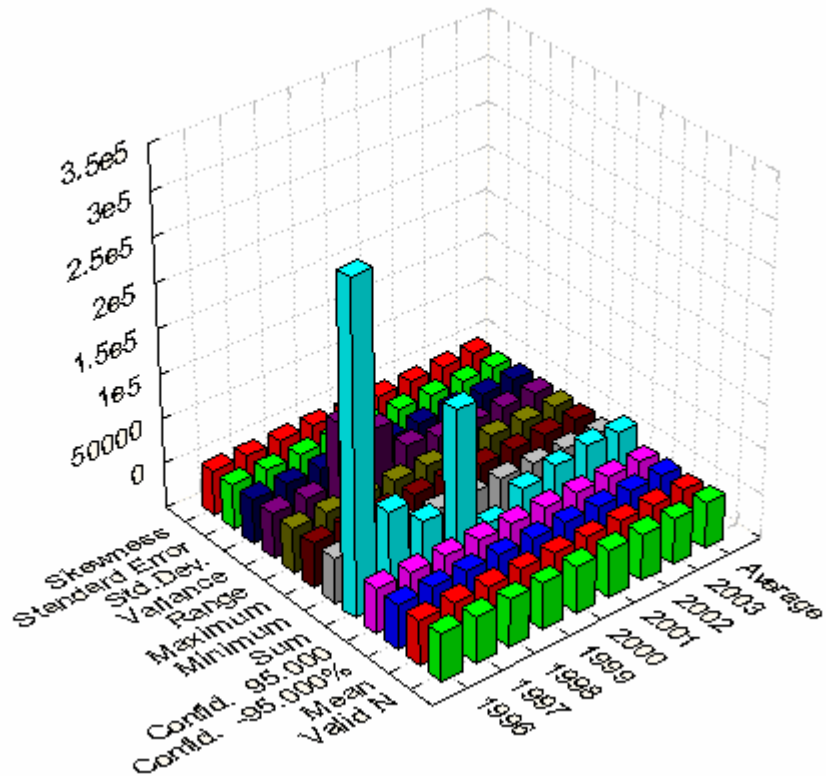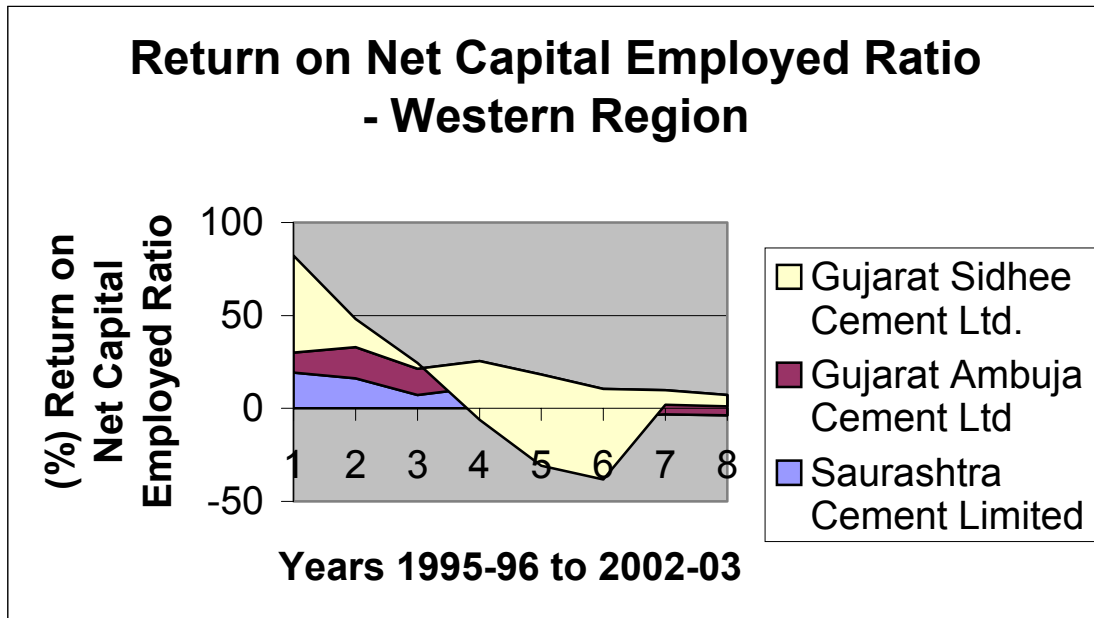
Chart No 3.5 (BB)

Return on Net Capital Employed Ratio - Western Region (%)

Chart No 3.5 (C)

Return on Net Capital Employed Ratio -Northern Region
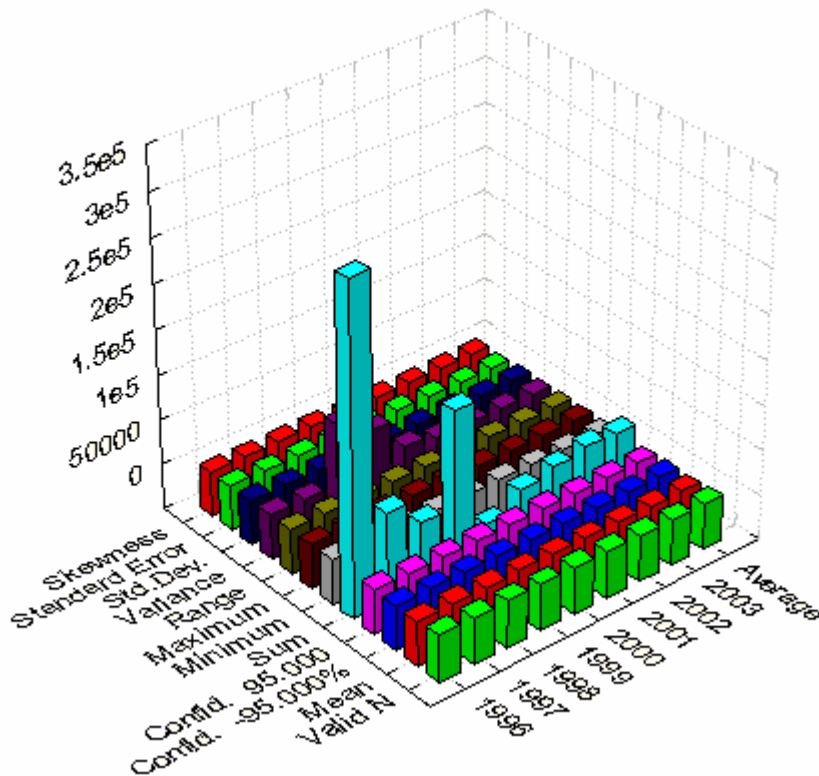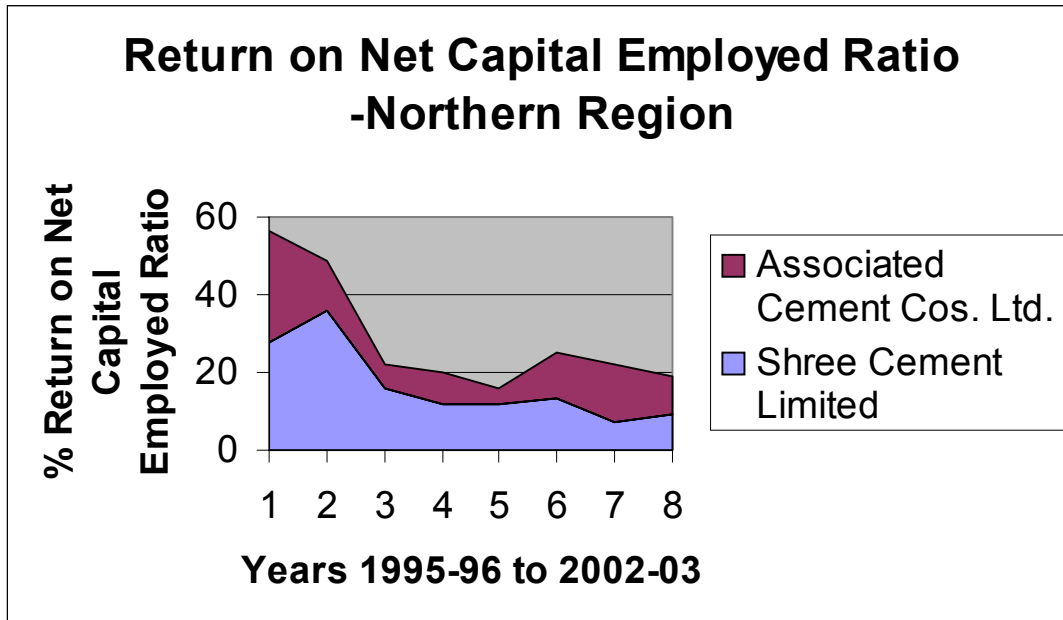
Chart No 3.5 (CC)

Return on Net Capital Employed - Northern Region (%)

Chart No 3.5 (D)

**Return on Net Capital E...
Ratio - Southern Reg...**

(%) Return on Net Capital Employed Ratio

Years 1995-96 to 2002-03
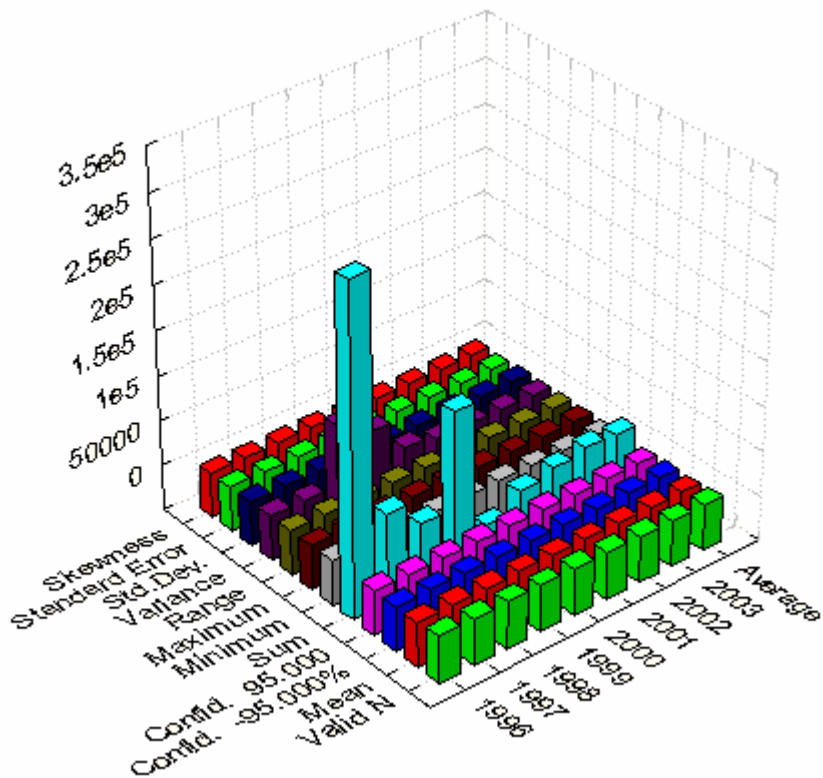
Legend:
- Deccan Cements Limited
- Dalmia Cement (Bharat) Limited
- Chettinad Cement Corpn. Limited
- Madras Cements Ltd.
- Shri Vishnu Cement Limited
- Priyadarshini Cement Limited
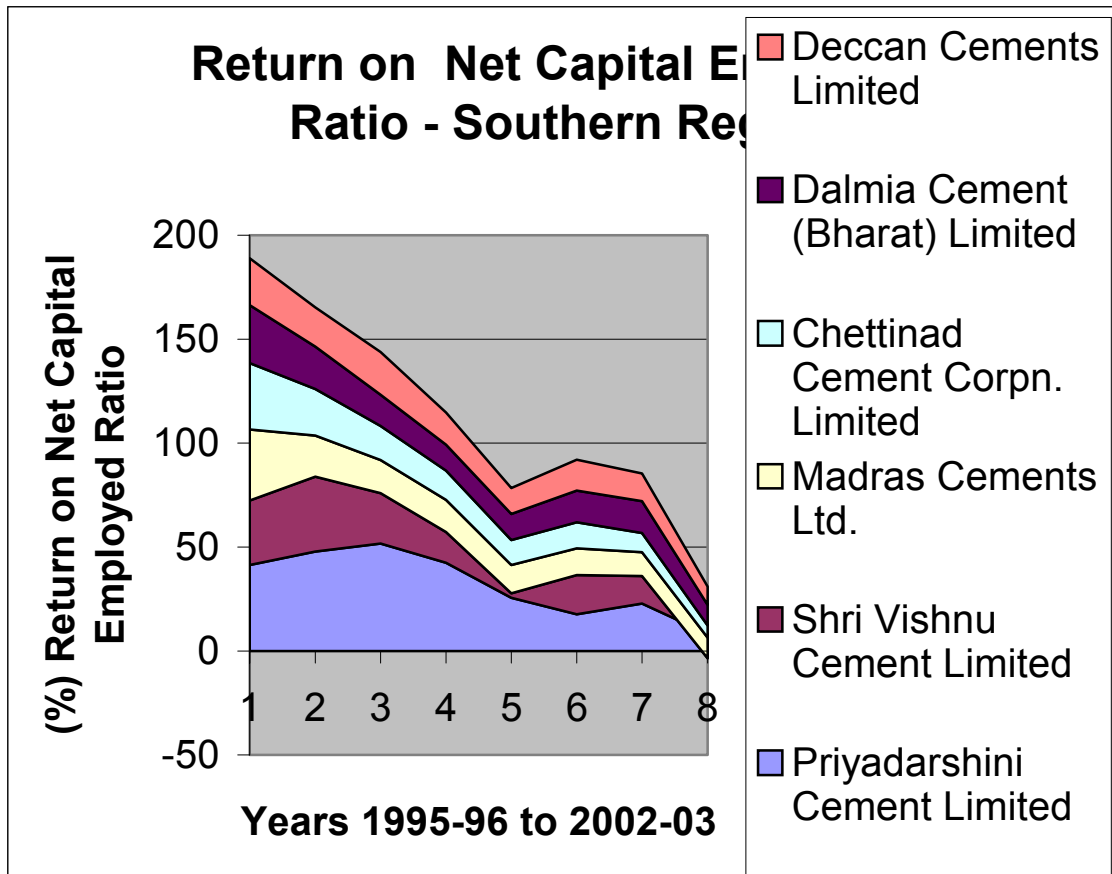
Chart No 3.5 (DD)

Return on Net Capital Employed Ratio - Southern Region (%)

Chart No 3.5 (E)

Return on Net Capital Employed Ratio -Rest of the Regions

(%)Return on Net Capital Employed Ratio

Years 1995-96 to 2002-03

Legend:
- Cement Corporation of India Limited
- Shree Digvijay Cement Limited

Chart No 3.5 (EE)

Return on Net Capital Employed Ratio - Rest of The Regions (%)

Return on Net Capital Employed Ratio – Anova Test ► Chi2–Test, Z (Normal)– Test, T (Student) – Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=normal(x,0,1)

Probability Distribution Function
p=1-inormal(x,0,1)

Probability Density Function
y=student(x,1)

Probability Distribution Function
p=1-istudent(x,1)

(6) Return On Net Worth:

The Return On Net Worth indicates the profitability of the owner's investments. As we know that every business is established with a view to getting return in the form of profit on the amount invested, so there should be a minumum of return on investment. It is also known as return on share holder's funds.

The return on net worth has been computed with help of the following formula :

Return on Net worth = Net profit after Tax / total share
holder's Funds * 100

The following table 3.6 shows the percentage of Return On Net Worth :

TABLE 3.6. RETURN ON NET WORTH (%) (MARCH – '96 TO MARCH – '03)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	18.09	9.85	-0.3	2	6.28	3.4	2.44	14.84	7.075
Damodhar Cement & Slag Ltd.	36.13	34.97	-4.38	54.89	-37.8	17.81	-6.66	13.92	13.61
Ambuja Cement Eastern Limited	75.17	38.56	43.59	55.46	-58.55	-832.6	-18.94	-9.8	-88.3888
Birla Corporation Ltd.	17.17	-1.54	-24.77	-35.25	-25.61	-12.07	-5.68	-5.79	-11.6925
YEARLY AVERAGE	**36.64**	**20.46**	**3.535**	**19.275**	**-28.92**	**-205.87**	**-7.21**	**3.2925**	**-19.8491**
Western Region									
Saurashtra Cement Limited	27.63	18	-11.76	-0.98	-14.6	-36.19	-51.45	-67.46	-17.1013
Gujarat Ambuja Cement Ltd	18.34	22.7	14.79	12.62	12.51	10.22	11.93	11.85	14.37
Gujarat Sidhee Cement Ltd.	516.8	-40.98	-289.02	196.45	60.33	40.02	16.42	10.67	63.83625
YEARLY AVERAGE	**187.59**	**-0.09333**	**-95.33**	**69.36333**	**19.41333**	**4.683333**	**-7.7**	**-14.98**	**20.36833**
Northern Region									
Shree Cement Limited	24.37	33.35	22.38	4.26	2.4	6.32	-1.65	1.92	11.66875
Associated Cement Cos. Ltd.	26.58	7.2	-1.67	-1.23	-7.84	6.35	12.52	5.43	5.9175
YEARLY AVERAGE	**25.475**	**20.275**	**10.355**	**1.515**	**-2.72**	**6.335**	**5.435**	**3.675**	**8.793125**
Southern Region									
Priyadarshini Cement Limited	238.76	104.62	57.67	26.99	10.78	-16.86	5.61	-41.12	**48.30625**
Shri Vishnu Cement Limited	-80.42	8567.74	47.03	2.87	-63	45.8	-3.26	-90.8	1053.245
Madras Cements Ltd.	50.71	30.36	10.78	11.95	11.12	12.3	7.68	5.33	17.52875
Chettinad Cement Corpn. Limited	46.28	23.59	11.56	8.9	5.55	12.06	-3.54	-20.89	10.43875
Dalmia Cement (Bharat) Limited	26.62	18.3	14.27	8.87	9.08	11.47	11.26	2.73	12.825
Deccan Cements Limited	22.65	17.33	17.63	12.99	11.41	12.4	10.54	2.76	13.46375
YEARLY AVERAGE	**50.7667**	**1460.32**	**26.49**	**12.095**	**-2.51**	**12.8617**	**4.715**	**-23.665**	**192.6346**
Rest of Region									
Shree Digvijay Cement Limited	-27.98	4.57	-28.23	-77.07	169.13	27.57	21.68	16.64	13.28875
Cement Corporation of India Limited	45.71	52.27	24.52	34.95	29.69	25.23	19.93	17.3	31.2
YEARLY AVERAGE	**8.865**	**28.42**	**-1.855**	**-21.06**	**99.41**	**26.4**	**20.805**	**16.97**	**22.24438**

SOURCE : Computed from the annual reports and accounts of the respective companies from March-'96 to March- '03.

In **Eastern Region** the Return on Net worth registered a fluctuating trend. It varied from 36.64 percent to – 205.87 percent. The average of Return on Net worth of this region was – 19.84 percent , which was lower than average of all units , under the study period.

The rate of Return on Net worth in **Western Region** showed a highly fluctuating trend. In march – '96 it was 187.59 percent with high decreased, it reached – 65.33 percent in march – '98. Also in last year of study period there was negative ratio. The average ratio of this region was 20.36 percent.

Table 3.6 showed that the rate of Return on Net worth witnessed a fluctuating trend during the study period in **Northern Region**. It ranged between – 2.72 percent to in March – 2000 and 25.47 percent in March –'96. The average ratio of this region was 9.79 percent. During the entire study period, the rate of Return on Net worth was always less them the rat of Return on Net Capital Employed.

In **Southern Region** rate on Return on Net worth registered a fluctuating trend under the study period. In March –'96 it was 50.66 percent and in March – 2000 it was – 2.51 percent. Then after it increased and reached 12.86 percent in March – '01 and finally it stooped with – 23.66 percent. The average

rate Return on Net worth of this region was 192.63 percent, which was highest among all the units under study.

The Return on equity Net worth of ***Rest of the Regions*** also indicates a fluctuating trend. In March –'96 it was 8.86 percent and with high increased, it reached 28.42 percent in March – '97 and finally it stooped with 16.97 percent. The average ratio of this region was 22.24 percent. The average ratio of Shree Digvijay Cement Ltd. and Cement Corp. of India Ltd. was 13.28 percent and 31.2 percent respectively.

Chart No 3.6 (A)

Return on Net Worth Ratio -Eastern Region

% Return on Net worth Ratio

Years 1995-96 to 2002-03

Legend:
- ☐ Birla Corporation Ltd.
- ☐ Ambuja Cement Eastern Limited
- ■ Damodhar Cement & Slag Ltd.
- ☐ OCL India Limited
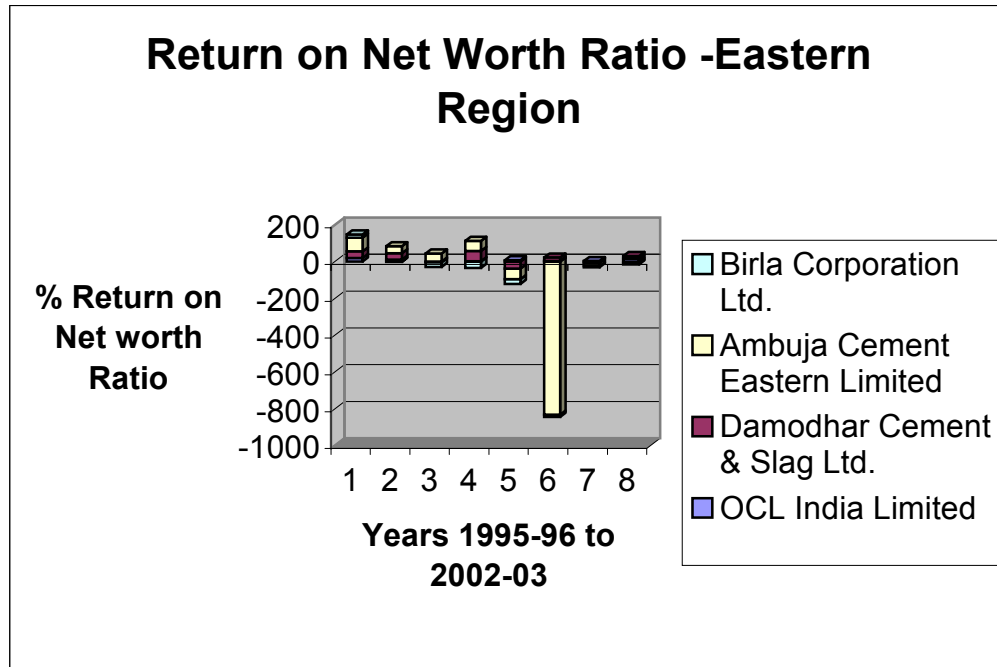
Chart No 3.6 (AA)

Return on Net Worth Ratio - Eastern Region (%)
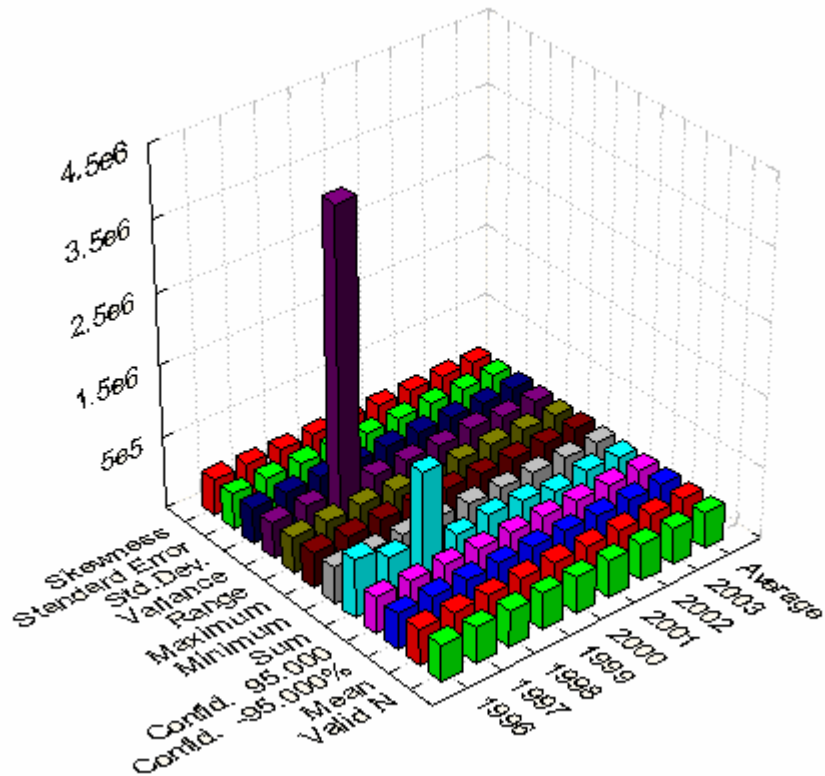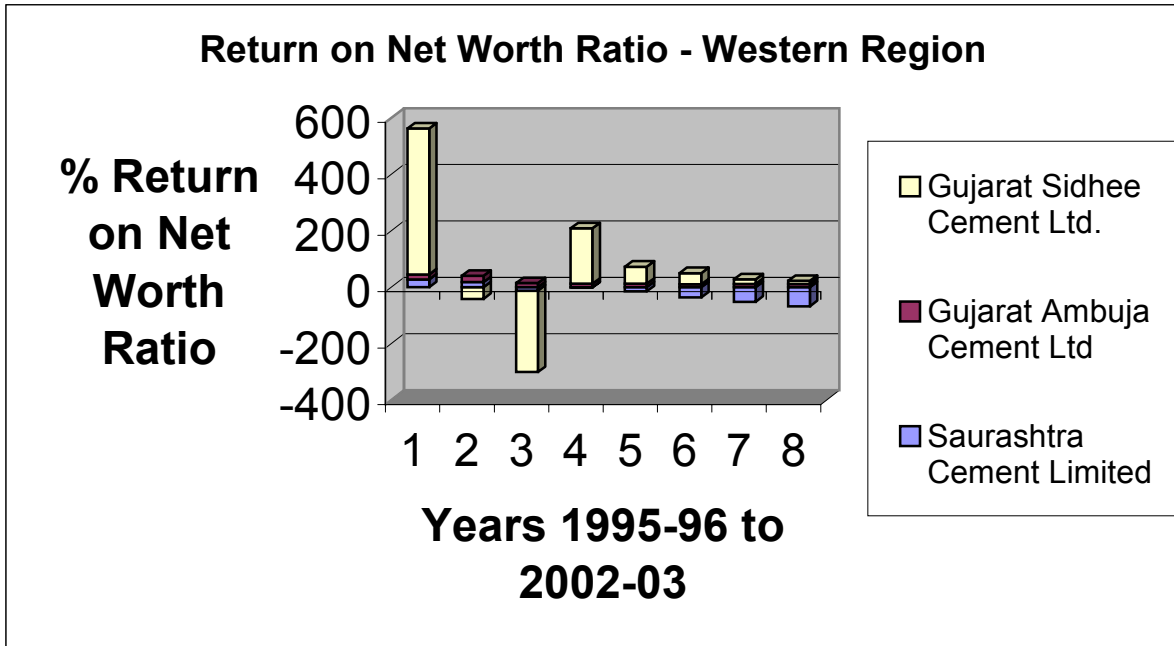
Chart No 3.6 (B)

Return on Net Worth Ratio - Western Region

Chart No 3.6 (BB)

Chart No 3.6 (C)

Return on Net Worth Ratio - Northern Region
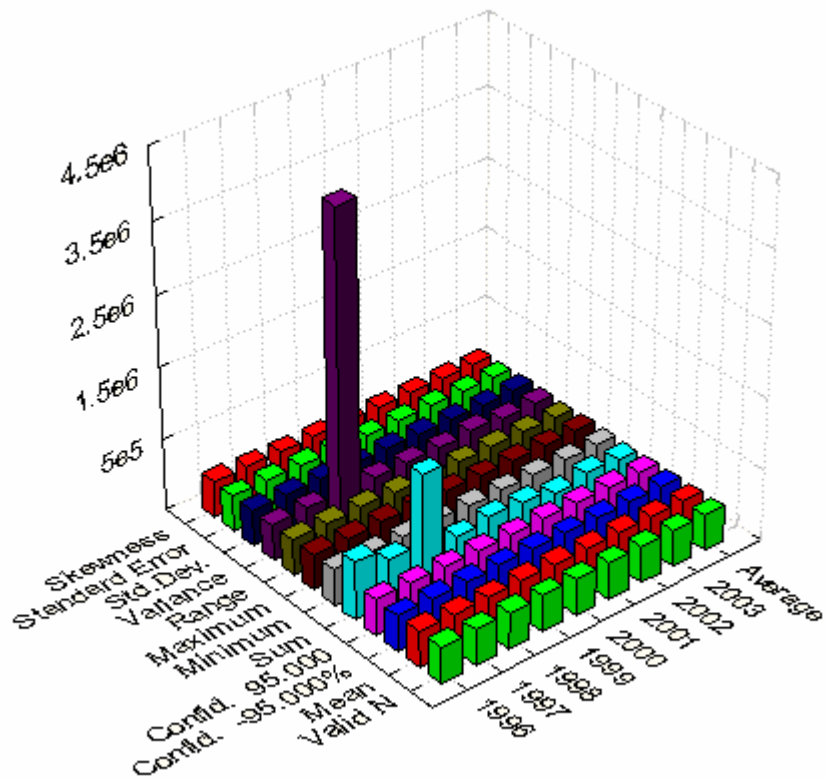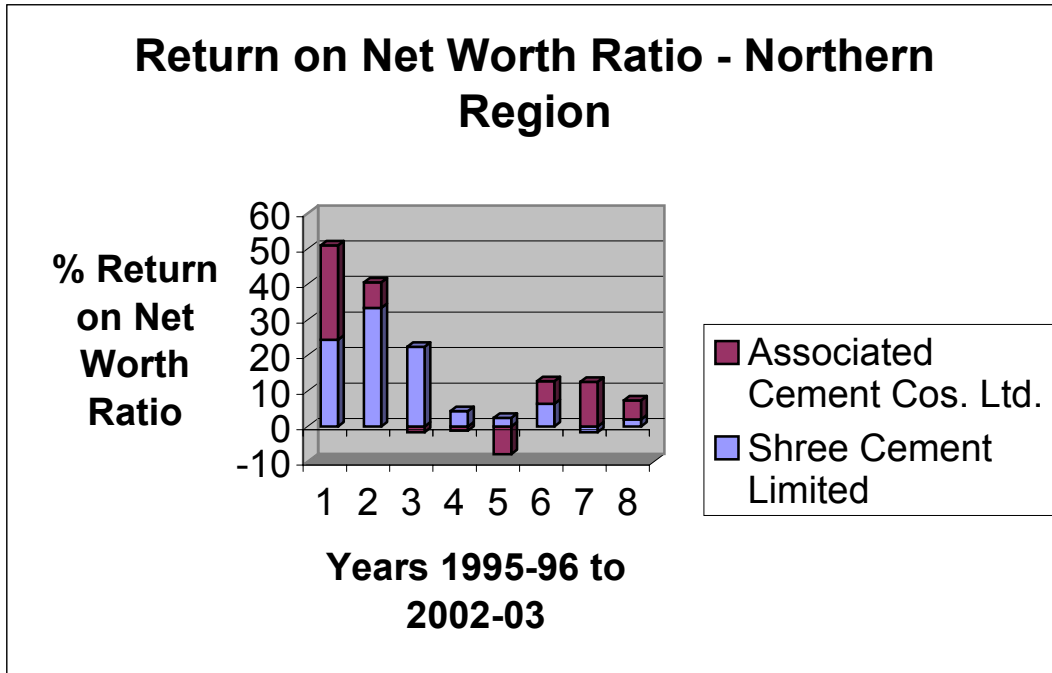
Chart No 3.6 (CC)

Return on Net Worth Ratio - Northern Region (%)

Chart No 3.6 (D)

Return on NetWorth Ratio - Southern Region

Legend:
- Deccan Cements Limited
- Dalmia Cement (Bharat) Limited
- Chettinad Cement Corpn. Limited
- Madras Cements Ltd.
- Shri Vishnu Cement Limited
- Priyadarshini Cement Limited

Y-axis: % Return on Networth Ratio (-1000, 0, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 9000)

X-axis: Years 1995-96 to 2002-03 (1, 2, 3, 4, 5, 6, 7, 8)

Chart No 3.6 (DD)

Return on Net Worth Ratio - Southern Region (%)

Chart No 3.6 (E)

Return on Net worth Ratio - Rest of the Regions

% Return on Net worth Ratio

Years 1995-96 to 2002-03

Cement Corporation of India Limited

Shree Digvijay Cement Limited

Chart No 3.6 (EE)

Return on Net Worth Ratio - Rest of the Regions (%)

Return on Net Worth Ratio – Anova Test ► Chi2 – Test, F – Test, T – Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)

Probability Density Function
y=student(x,1)

Probability Distribution Function
p=1-istudent(x,1)
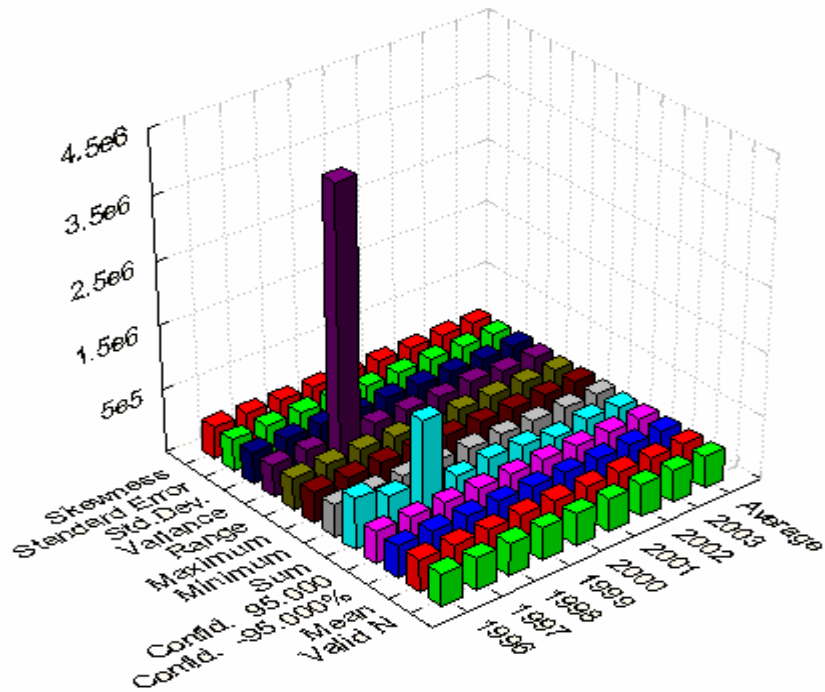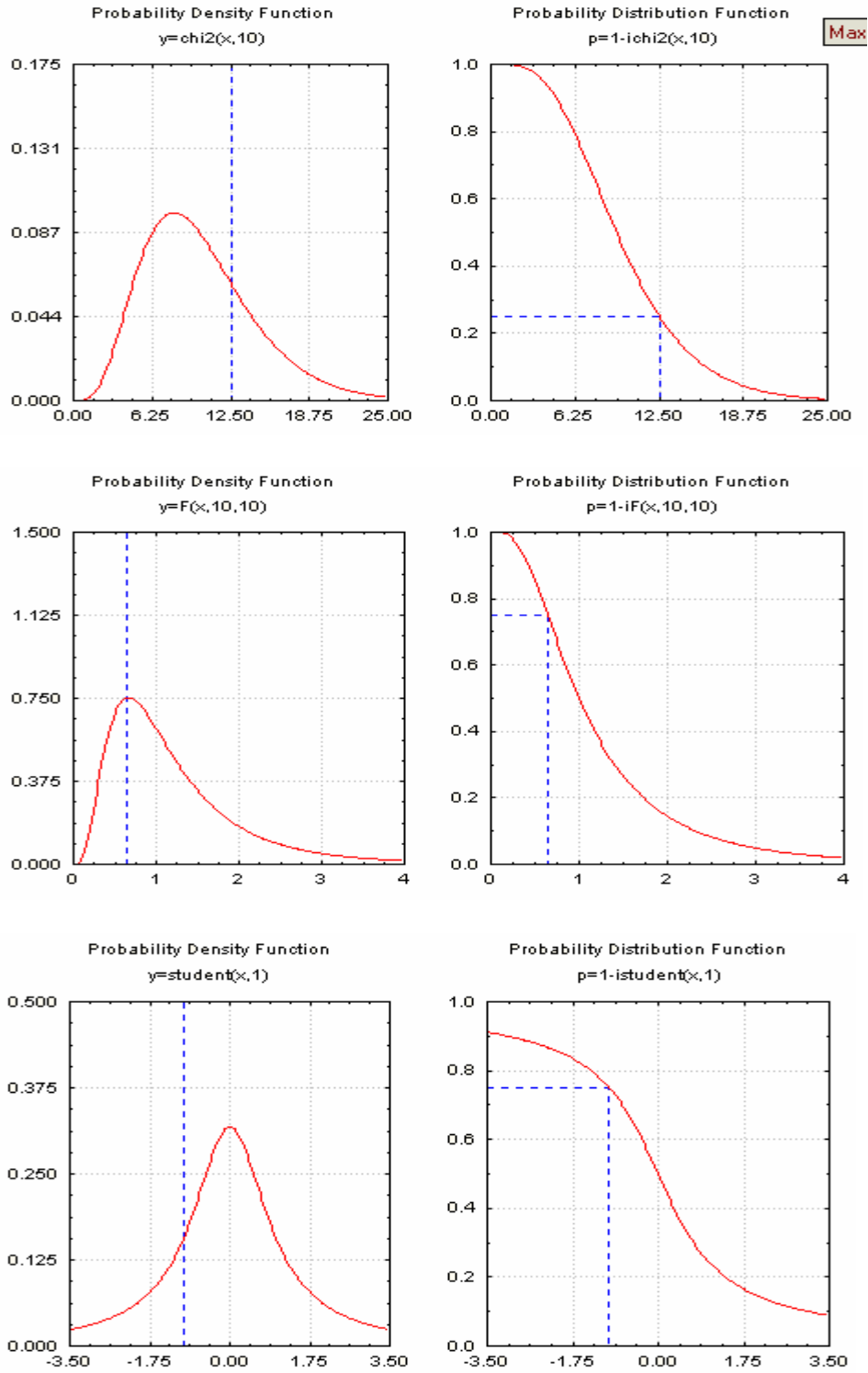
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CHAPTER 4
ANALYSIS OF
LIQUIDITY

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GRAPH 4.4. E INTERVAL MEASURE IN REST OF THE REGIONS

GRAPH 4.4. EE INTERVAL MEASURE IN REST OF THE REGIONS IN

STATASTICS

Interval Measure Ratio – Anova Test ▶ Chi 2 – Test, F (Student) – Test, Z (Normal) – Test :

4.1 <u>CONCEPT OF LIQUIDITY:</u>

By the term 'liquidity' is meant the debt-repaying capacity of an undertaking. It refers to the firm's ability to meet the claims of suppliers of goods, services and capital. According to Archer and D'Ambrosio, liquidity means cash and cash availability, and it is from current operations and previous accumulations that cash is available, to take care of the claims of both the short-term suppliers of capital and the long-term ones. It has two dimensions; the short-term and the long-term liquidity.

Short-term liquidity implies the capacity of the undertaking, to repay the short-term debt which means the same as the ability of the firm in meeting the currently maturing obligations from out of the current assets. The purpose of the short-term analysis is to derive a picture of the capacity of the firm to meet its short-term obligations out of its short-term resources, that is, to estimate the risk of supplying short-term capital to the firm.

Analysis of the firm's long-term position has for its rationale the delineation of the ability of a firm to meet its long-term financial obligations such as interest and dividend payment and repayment of principal. Long-term liquidity refers to the ability of the firm to retire long-term debt and interest and other long-run obligations. When relationships are established

along these lines, it is assumed that in the long-run assets could be liquidated to meet the financial claims of the firm. Quite often the expression 'liquidity' is used to mean short-term liquidity of the companies.

In the present study, liquidity is taken to mean the short-term liquidity which refers to the ability of the undertakings to pay off current liabilities. This is chosen because the study relates to the management of short-term assets and liabilities. In other words, the long-run success of an undertaking lies in its ability to survive in the immediate future. Further, a company may have tremendous potential for profitability in the long-run but may languish due to inadequate liquidity. It is, therefore, short-term liquidity that has been considered crucial to the very existence of an enterprise.

4.2 <u>MEASUREMENT OF LIQUIDITY</u>

Liquidity of an enterprise can be studied in two ways, namely, (i) Technical liquidity, and (ii) Operational liquidity. The difference between the two methods of liquidity measurement depends upon whether one assumes the 'liquidation concept' of business as in case of the technical liquidity or the 'going concern concept' of business as in the case of the operational liquidity.

The first method of computation of liquidity is based on the assumption that the firm might become insolvent at any time and whether, in such an event, the current assets held by the undertakings would be sufficient to pay-off the current liabilities. On the other hand, the computation of 'operational liquidity' attempts the measurement of the firm's potential to meet the current obligations on the basis of net cash flows originating from out of its own operations with the view that a manufacturing enterprise cannot pay off current liabilities from its current assets when it is in the run. It is assumed under this approach that   firms are going firms and hence the liabilities are met through the net cash flows arising out of their operations.

[I] **TECHNICAL LIQUIDITY**

Technical liquidity is normally evaluated on the basis of the following ratios in a business enterprise.

(1) CURRENT RATIO

Current ratio expresses the precise relation between current assets and current liabilities. It is calculated by dividing current assets with current liabilities.

Current Ratio=Current assets/Current liabilities.

It indicates the availability of current assets in rupees for every one rupee of current liabilities. A high ratio means that the firm has more investment in current assets. While a low ratio indicates that the firm in question is unable to retire its current liabilities. In fact, a satisfactory current ratio for any given firm is difficult to judge. For most manufacturing undertakings, a ratio of 2:1 is traditionally considered a bench-mark of adequate liquidity. However, to some of the undertakings like public utilities and service firms this standard ratio is not particularly useful in as much as they carry no inventories for sale.

Current ratio is equally useful to both the outsiders and management. To an outsider, it is a measure of the firm's ability to meet its short-term claims. So far as the management concerned, the ratio discloses the magnitude of the current assets that the firm carries in relation to its current liabilities. As regards the outsider, the larger he ratio, the more liquid is the firm. But, from the management point of view, a larger ratio indicates excess investment in less profit-generating assets. On the contrary, a low current ratio or downward trend in the ratio indicated the inefficient management of working capital.

Nevertheless, the current ratio is a crude and quick measures of the firm's liquidity as it is only a test of the quantity and not the quality. The limitation of this ratio as an indicator of liquidity lies in the size of the inventory of the enterprise. If inventory forms a high proportion of current assets, the 2:1 ratio might not be adequate, as a meaningful measure of liquidity.

(2) QUICK OR ACID-TEST RATIO

Recognising that inventory might not be very liquid or slow-moving, this ratio takes the quickly realizable assets and measures them against current liabilities. This is a more refined if somewhat conservative estimate of the firm's liquidity, since it establishes a relation between quick or liquid assets and current liabilities. To be precise of quick assets is one that can be converted into cash immediately or reasonably soon without loss of value. For instance, cash is the most liquid of all assets. The other assets which are considered to be relatively liquid and include in the quick category are accounts and bills receivable and marketable securities. Inventory and period expenses are considered to be less liquid. Inventories normally require some time for realizing into cash. The quick ratio is, then, expressed as a relation between quick assets and current liabilities, as :

Quick Ratio=Quick assets/Current liabilities

=Current assets – Inventories /Current liabilities.

Conventionally, a quick ratio of 1:1 is considered to be a more satisfactory measure of liquidity position of an enterprise. In fact, this ratio does not entirely supplant the current ratio; rather, it partially supplements current ratio and when used in conjunction with it, tends to give a better picture of the firm's ability to meet its claims out of short-term assets.

(3) ABSOLUTE LIQUIDITY RATIO

Absolute liquidity ratio is the refinement of the concept of eliminating inventory as liquid assets in the acid-test ratio, because of their uncertain value at the time of liquidation. Although receivables are generally much more liquid in nature than inventories, some doubt may exist concerning their liquidity as well. So, by eliminating receivables and inventories from the current assets, another measure of liquidity is derived by relating the sum of cash and marketable securities to the current liabilities. Generally, an absolute liquidity ratio of 0.5:1 is considered appropriate in evaluating liquidity.

[II] <u>OPERATIONAL LIQUIDITY</u>

Operational liquidity which is based on the going concern concept of business, is determined by expressing cash flows as a percentage of current liabilities. It is varified here whether the cement companies included in the study would be able to discharge its current liabilities from the cash flows generated from the operations.

4.3 <u>DETERMINATES OF LIQUIDITY</u>

So far, the measurement of liquidity was accomplished by comparing current assets with current liabilities. But, focus has not been thrown on the factors that determine liquidity. Several factors influence the liquidity position of an undertaking. Significant among them are:

(a) the nature and volume of business;

(b) the size and composition of current assets and current liabilities;

(c) the method of financing current assets;

(d) the level of investment in fixed assets in relation to the total long-term funds; and

(e) the control over current assets and current liabilities.

Firstly, the nature and volume of business influence the liquidity of an enterprise. Depending upon the nature of the units, some firms require more of working capital than others. For some of the concerns like public utilities, less proportion of working capital is needed, vis-à-vis, manufacturing organizations. Besides, an increasing volume of business also enhances the funds needed to finance current assets. In these situations, if the firm does not divert some funds from the long-term sources, the liquidity ratios would be adversely affected.

Secondly, the size and the composition of current assets and current liabilities were the basic factors that determine the liquidity of an enterprise. If a higher investment is made in the current assets in relation to current liabilities, there would be a corresponding rise in the current ratio. While quick and other ratios depend on the composition of current assets.

Thirdly, the method of financing current assets causes changes in the liquidity ratios. If greater part of the current assets is financed from long-term sources, greater also would be the current ratio. On the other hand, if the concern depends much on the outside sources for financing current assets, the ratio would fall.

Fourthly, the absorption of funds by fixed assets is one of the major causes of low liquidity. As more and more of the firm's

total funds are absorbed in this process, there will be little left to finance short-term needs and therefore liquidity ratios fall. Hence, the degree of liquidity is determined by the attitude of the management in the allocation of permanent funds between fixed and current assets.

Finally, stringent control over the current items causes fluctuations in the liquidity ratios. If investment in current assets is not taken care of properly the firm may accumulate excess liquidity, which may adversely affect the profitability. On the contrary, unduly strict control of the investment in all types of current assets may eventually endanger the existence of the firm owing to non-compliance of claims because of the shortage of funds. Similarly, control over current liabilities also plays an important role in determining liquidity of an enterprise by requiring the firm to contribute necessary funds from long-term sources to keep up the liquidity position.

4.4 <u>EFFECTS OF LIQUIDITY</u>

Liquidity of a business is one of the key factors determining its propensity to succeed or fail. Both excess and shortage of liquidity affect the interest of the firm. By excess liquidity in a business enterprise, it is meant that it is carrying higher current assets than are warranted by the requirements of production. Hence, it indicates the blocking up of funds in

current assets without any return. Besides, the firm has to incur costs to carry them overtime. Further, the value of such assets would depreciate in times of inflation, if they are left idle. Owing to the cornering of capital, the firm may have resort to additional borrowing even at a fancy price.

On the other hand, the impact of inadequate liquidity is more severe. The losses due to insufficient liquidity would be many. Production may have to be curtailed or stopped from the lack of necessary funds. As the firm will not be in a position to pay off the debts, the credit worthiness of the firm is badly affected. In general, the smaller the amount of default, the higher would be the damage done to the image of the unit. In addition, the firm will not be able to secure funds from outside sources, and the existing creditors may even force the firm into bankruptcy. Further, insufficient funds will not allow the concern to launch any profitable project or earn attractive rates of return on the existing investment.

Between the excess and inadequate liquidity, the latter is considered to be more detrimental, since the lack of liquidity may endanger the very existence of the business enterprise. Besides, both the excess and inadequate liquidity adversely affect the profitability, but liquidity itself is influenced by the low profitability. If the firm is earning very low rates of return or incurring losses, there would be no funds generated by the

operations of the company which are essential to retire the debts. In fact, there is a tangle between liquidity and profitability, which eventually determines the optimum level of investment in current assets. Of the liquidity and profitability, the former assumes further importance since profits could be earned with ease in subsequent periods, once the image of the unit is maintained. But, if the firm losses its face in the market for wants of liquidity, it requires. Herculean efforts to restore its position. Instances are not lacking of great industrial giants, with comfortable book profits coming to grief for want of liquidity.

[4.5] ANALYSIS OF LIQUIDITY :

The concept of liquidity within a business is vital to the understanding of financial management as it is the basic criteria of test the short term liquidity position of the enterprise.

For the analyzing of liquidity of cement Industry following ratio have been computed.

(1)   Current Ratio
(2)   Quick Ratio / Liquid Ratio
(3)   Cash Ratio
(4)   Interval Measure Ratio

(1)   CURRENT RATIO :

The current ratio is a measure of the firm's short-term solvency. It explains the relationship between the correct assets and current liabilities. The current ratio is calculated by dividing current assets by current liabilities.

Current Ratio = Current Assets / Current Liabilities.

This ratio indicates the availability of current assets in rupees for every one rupee of current liabilities. A ratio of greater than one means that concern has more current assets than current liabilities. As a conventional rule, a current ratio of 2 : 1 of more is considered satisfactory. Tandon committee has recommended that ideal current ratio for bank financing is 1.33 : 1. However the current ratio is a crude-and-quick measure of the firm's liquidity.

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TABLE NO. 4.1 CURRENT RATIO (IN TIMES)

Cement Industry under study (1995 – 1996 to 2002 – 2003)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	averge
Eastern Region									
OCL India Limited	1.45	1.51	1.8	2	1.84	1.61	1.48	1.47	1.645
Damodhar Cement & Slag Ltd.	0.15	0.49	0.46	0.96	0.52	0.57	0.42	0.52	0.51125
Ambuja Cement Eastern Limited	0.54	0.46	0.28	0.71	0.84	0.69	0.72	0.89	0.64125
Birla Corporation Ltd.	1.18	1.27	1.39	1.04	1	1.11	1.42	1.3	1.21375
YEARLY AVERAGE	**0.83**	**0.9325**	**0.9825**	**1.1775**	**1.05**	**0.995**	**1.01**	**1.045**	**1.002813**
Western Region									
Saurashtra Cement Limited	1.93	1.37	1.25	0.93	1	0.9	0.35	0.28	1.00125
Gujarat Ambuja Cement Ltd	2.12	1.7	2.27	1.72	1.26	0.56	0.98	1.47	1.51
Gujarat Sidhee Cement Ltd.	0.89	1.01	1.24	1	0.83	0.63	0.71	2.19	1.0625
YEARLY AVERAGE	**1.646667**	**1.36**	**1.586667**	**1.216667**	**1.03**	**0.696667**	**0.68**	**1.313333**	**1.19125**
Northern Region									
Shree Cement Limited	2.52	1.75	1.47	1.51	1.54	1.57	1.31	1.25	1.615
Associated Cement Cos. Ltd.	1.18	1.09	0.9	0.81	0.79	0.7	0.73	0.81	0.87625
YEARLY AVERAGE	**1.85**	**1.42**	**1.185**	**1.16**	**1.165**	**1.135**	**1.02**	**1.03**	**1.245625**
Southern Region									
Priyadarshini Cement Limited	2.2	2.65	1.98	1.57	1.38	1.04	1.12	0.85	1.59875
Shri Vishnu Cement Limited	2.26	2.11	1.57	1.2	1.28	1.26	0.84	0.74	**1.4075**
Madras Cements Ltd.	1.95	1.63	1.69	1.41	1.28	1.85	1.34	1.23	1.5475
Chettinad Cement Corpn. Limited	1.5	1.25	0.88	0.93	1.14	1	0.86	0.96	1.065
Dalmia Cement (Bharat) Limited	2.2	2.64	2.36	2.62	1.88	2.19	1.53	1.24	2.0825
Deccan Cements Limited	1.63	2.36	2.1	4.53	1.39	3.06	2.05	1.92	2.38
YEARLY AVERAGE	**1.95667**	**2.10667**	**1.76333**	**2.04333**	**1.39167**	**1.73333**	**1.29**	**1.156667**	**1.680208**
Rest of Region									
Shree Digvijay Cement Limited	1.41	1.43	1.21	1.21	0.76	0.7	0.49	0.43	0.955
Cement Corporation of India Limited	0.45	0.34	0.43	0.26	0.14	0.2	0.15	0.14	0.26375
YEARLY AVERAGE	**0.93**	**0.885**	**0.82**	**0.735**	**0.45**	**0.45**	**0.32**	**0.285**	**0.609375**

Source :   Computed from the annual reports and accounts of the respective companies from March–1996 to March–2003.

Table 4.1 indicated a fluctuating trend in the current ratio of **Eastern Region**. The average ratio of this region was 1.00 times. The ratio varied between 0.83 times in March-1996 and 1.17 times in March-1999. The Current ratio of Damodhar Cement & slag Ltd. And Ambuja Cement Eastern Ltd. Were less than 1 during entire study period. It indicated that high volume of current liabilities as against current assets.

In **Western Region**, the current assets and current liabilities recorded a fluctuating trend during the period of study. Similarly it varied from 0.68 times to 1.64 times. The average ratio of this region was 1.19 times. The current ratio of Gujarat Ambuja Cement Ltd. was always more than standard norms.

The Current ratio of **Northern Region** registered an decreasing trend in first four years of the study period. It was 1.85 times and reached 1.16 times in March-1999. The average ratio of Northern Region was 1.24 times. The current ratio a A.C.C. Ltd. was less than 1 during entire study period. It indicated that high volume of current liabilities as against current assets.

Table 4.1 indicated a fluctuating trend in the current ratio of **Southern Region**. The ratio varied between 1.15 times in March-2003 and 2.10 times in March-1997. The average ratio

of this region was highest among all the region. From the creditor point of view the solvency position of this region was sound among all the regions.

In **_Rest of the Regions_**, the current assets and current liabilities recorded a fluctuating tendency during the period of study. Similarly it varied from 0.28 times in March-2003 to 0.93 times in March-1996. The average ratio of Cement Corporation of India Ltd. was 0.26 times indicated low liquidity position of company.

CHART NO. 4.1.

One can study as to what extent, current ratio is achieved every year according to the company and its region. This study can be done in A,B,C,D, E & Anove test respectively.

Chart No. 4.1 (A)

Current Ratio -Eastern Region
(In Times)

- Birla Corporation Ltd.
- Ambuja Cement Eastern Limited
- Damodhar Cement & Slag Ltd.
- OCL India Limited

Years 1995-96 to 2002-03

Chart No. 4.1 AA

Current Ratio - Eastern Region (In Times)

Chart No. 4.1 (B)

**Current Ratio - Western Region
(In Times)**

Legend:
- Saurashtra Cement Limited
- Gujarat Ambuja Cement Ltd
- Gujarat Sidhee Cement Ltd.

X-axis: Years 1995-96 to 2002-03
Y-axis: Current Ratio (In Times)

Chart No. 4.1 (BB)

Currrent Ratio - Western Region (In Times)

Chart No. 4.1 (C)

Current Ratio- Northern Region (In Times)

Chart No. 4.1 (CC)

Current Ratio - Northern Region (In Times)

Chart No. 4.1 (D)

Current Ratio- Southern Region (In Times)

Chart No. 4.1 (DD)

Current Ratio - Southern Region (In Times)

Chart No. 4.1 (E)

Chart No. 4.1 (EE)

Current Ratio – Anova Test ► Chi 2 – Test, F (Student) – Test, T – Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)

Probability Density Function
y=student(x,1)

Probability Distribution Function
p=1-istudent(x,1)

(2) QUICK RATIO :

Quick or liquid ratio establishes a relationship between quick, or liquid assets and current liabilities. The quick ratio is a more refined measure of the firm's liquidity. An assets is liquid if it can be converted into cash immediately or reasonably soon without a loss of value. Cash is the most liquid asset. Generally a quick ratio of 1 to 1 is considered to represent a satisfactory current financial condition. A quick ratio of 1 to 1 or more does not necessarily imply sound liquidity position.

Formula of quick ratio is as follows :

Quick Ratio = Quick Assets / Quick Liabilities.

Table 4.2 represents the quick ratio of cement companies of period under study :

TABLE 4.2 QUICK RATIO (IN TIMES)
Cement Industry under study (1995-1996 to 2002-2003)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	0.55	0.4	0.71	0.73	0.7	0.7	0.56	0.62	0.62
Damodhar Cement & Slag Ltd.	0	0	0	0.03	0	0	0	0	0.00
Ambuja Cement Eastern Limited	0.2	0.15	0.12	0.22	0.36	0.21	0.23	0.37	0.23
Birla Corporation Ltd.	0.32	0.37	0.47	0.3	0.22	0.42	0.58	0.6	0.41
YEARLY AVERAGE	**0.26**	**0.23**	**0.32**	**0.32**	**0.32**	**0.33**	**0.34**	**0.39**	**0.31**
Western region									
Saurashtra Cement Limited	1.02	0.55	0.56	0.36	0.5	0.33	0.17	0.11	0.45
Gujarat Ambuja Cement Ltd	1.22	0.56	0.91	0.84	0.44	0.14	0.19	0.34	0.58
Gujarat Sidhee Cement Ltd.	0.39	0.41	0.3	0.25	0.27	0.22	0.28	0.88	0.37
YEARLY AVERAGE	**0.87**	**0.50**	**0.59**	**0.48**	**0.40**	**0.23**	**0.21**	**0.44**	**0.46**
Northern Region									
Shree Cement Limited	1.77	0.83	0.34	0.54	0.5	0.45	0.22	0.39	0.63
Associated Cement Cos. Ltd.	0.33	0.38	0.33	0.25	0.19	0.13	0.13	0.13	0.23
YEARLY AVERAGE	**1.05**	**0.60**	**0.33**	**0.39**	**0.34**	**0.29**	**0.17**	**0.26**	**0.43**
Southern Region									
Priyadarshini Cement Limited	0.38	1.07	0.73	0.58	0.58	0.41	0.35	0.21	0.53
Shri Vishnu Cement Limited	0.64	0.85	0.64	0.24	0.23	0.46	0.24	0.29	0.44
Madras Cements Ltd.	0.47	0.39	0.78	0.53	0.36	0.58	0.41	0.39	0.48
Chettinad Cement Corpn.	0.34	0.22	0.14	0.18	0.25	0.24	0.24	0.3	0.23
Dalmia Cement (Bharat) Limited	0.36	0.89	0.74	0.87	0.56	0.62	0.27	0.22	0.56
Deccan Cements Limited	0.91	1.5	0.99	2.66	0.48	1.79	0.91	1.11	1.29
YEARLY AVERAGE	**0.51**	**0.82**	**0.67**	**0.84**	**0.41**	**0.68**	**0.40**	**0.42**	**0.59**
Rest of Region									
Shree Digvijay Cement Limited	0.59	0.64	0.49	0.41	0.16	0.23	0.11	0.1	0.34
Cement Corporation of India Limited	0.01	0.13	0.09	0.18	0.04	-0.01	0.07	0.02	0.06
YEARLY AVERAGE	**0.3**	**0.38**	**0.29**	**0.29**	**0.1**	**0.11**	**0.09**	**0.06**	**0.20**

Source : Computed from the annual reports and account of
the respective compaies from March-1996 to March-2003.

On the basis of table 4.2 it can be said that the Quick ratio of **Eastern Region** registered a fluctuating trend through the period under study. The ratio was 0.26 times in March-1993 and declined to 0.23 times in March-1997 and finally stopped with 0.39 times in March-2003. The average ratio of this region was 0.31 times showed poor liquidity position.

In **Western Region** the quick ratio also registered a fluctuating trend under the study period. During the period under study, the quick ratio of western region varied between 0.23 times in March-2003 to 0.87 times in March-1996. The average ratio of this region was 0.46 times.

In **Northern Region** registered an decreasing trend in first three years of study perod. It was 1.05 times in March-1996 and reached at 0.33 times in March-1998, then after it increased and reached at 0.39 times in March-1999. The average ratio of this region was 0.43 times. The quick ratio of Shree Cement Ltd. was indicates sound liquidity position then the average ratio of A.C.C. Ltd.

Table 4.2 indicated a fluctuating trend in the quick ratio of **Southern Region**. During the period under study the quick ratio of southern region varied from 0.40 times to 0.84 times.

The quick ratio of this region was higher than average of other regions.

In **Rest of the Regions** the quick ratio registered poor and fluctuating tendency during the period of study. Similarly it varied from 0.06 times to 0.38 times. The average ratio of this region was 0.20 times indicated poor liquidity position. Also, the average ratio of Cement Corporation of India Ltd. was 0.06 times indicated low liquidity position of company.

CHART NO. 4.2.

This chart shows which selected companies in their region have obtained Quick Ratio in percentage according to years. In it according to region six sections are made as A,B,C,D,E & Anova-Test.

Chart No. 4.2 (A)

Chart No. 4.2 (AA)

Chart No. 4.2 (B)

Quick Ratio-Western Region (InTimes)

Quick Ratio (In Times)

Years 1995-96 to 2002-03

- Saurashtra Cement Limited
- Gujarat Ambuja Cement Ltd
- Gujarat Sidhee Cement Ltd.

Chart No. 4.2 (BB)

Quick Ratio - Western Region (In Times)

Chart No. 4.2 (C)

Quick Ratio-Northern Region (In Times)

Chart No. 4.2 (CC)

Chart No. 4.2 (D)
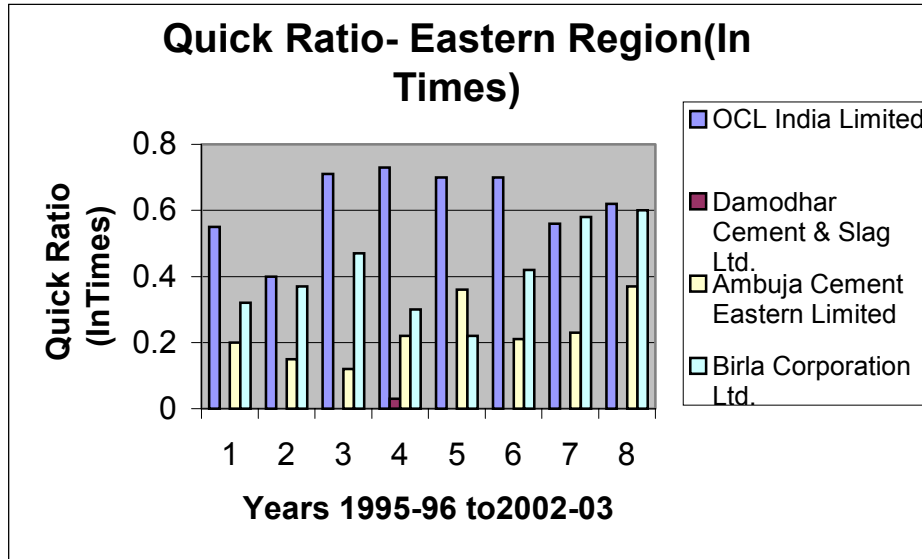
Quick Ratio - Southern Region (InTimes)
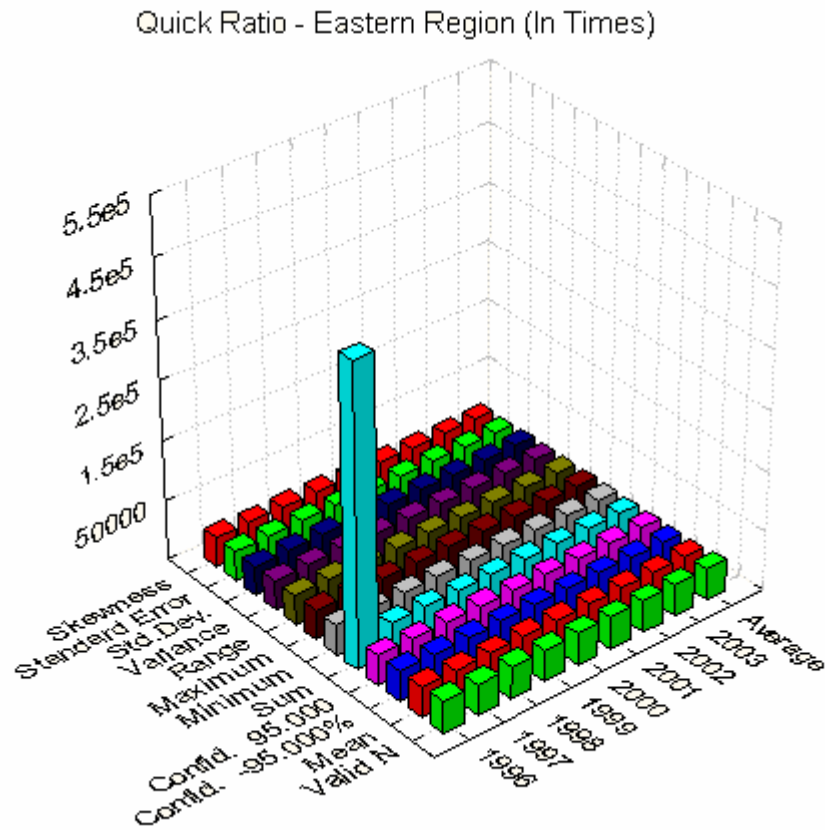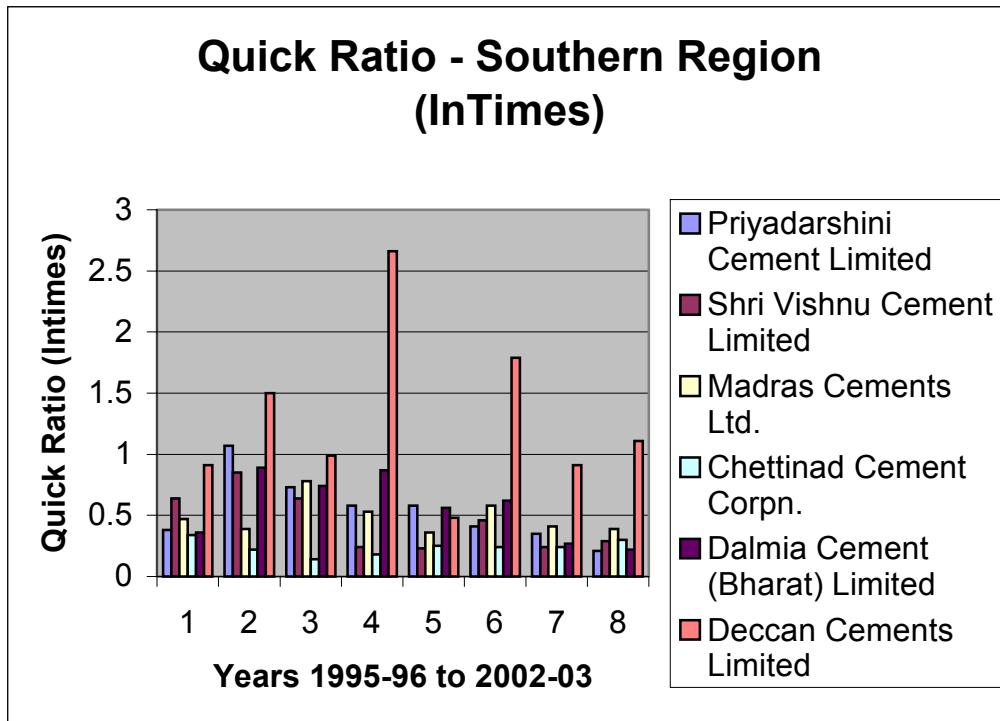
Chart No. 4.2 (DD)

Quick Ratio - Southern Region (In Times)

Chart No. 4.2 (E)

Quick Ratio-Rest of theRegions(InTimes)
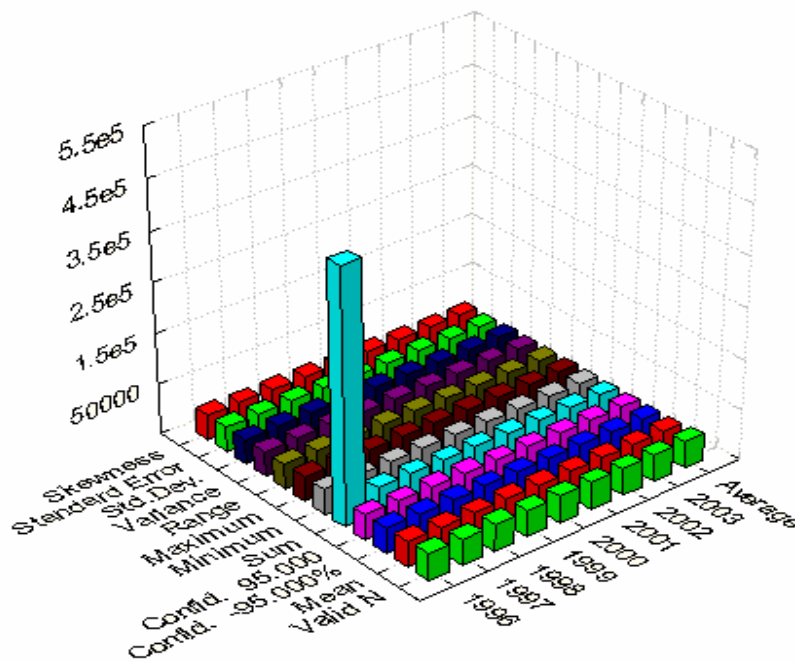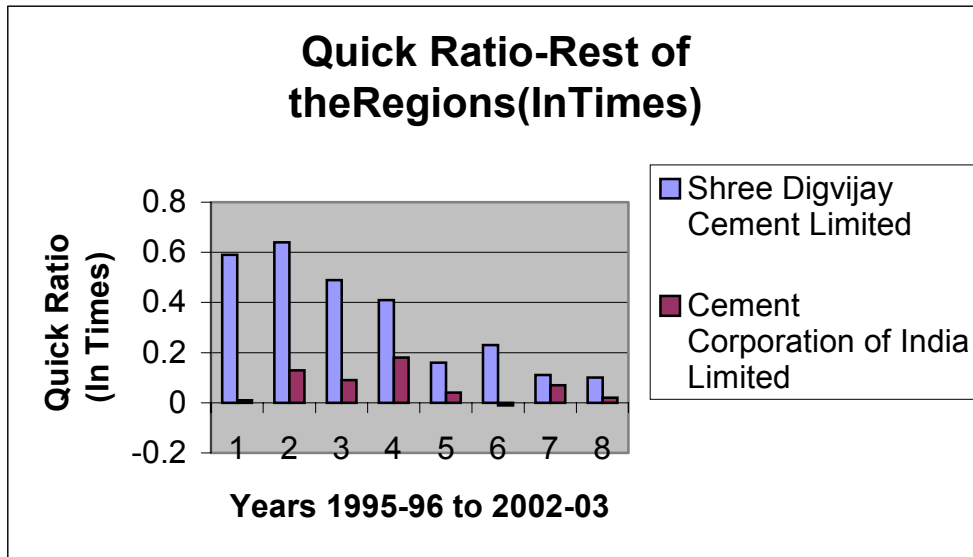
Chart No. 4.2 (EE)

Quick Ratio - Rest of The Regions (In Times)

Quick Ratio – Anova - Test ► Chi 2 - Test, F - Test, Z – Test

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)

Probability Density Function
y=normal(x,0,1)

Probability Distribution Function
p=1-inormal(x,0,1)
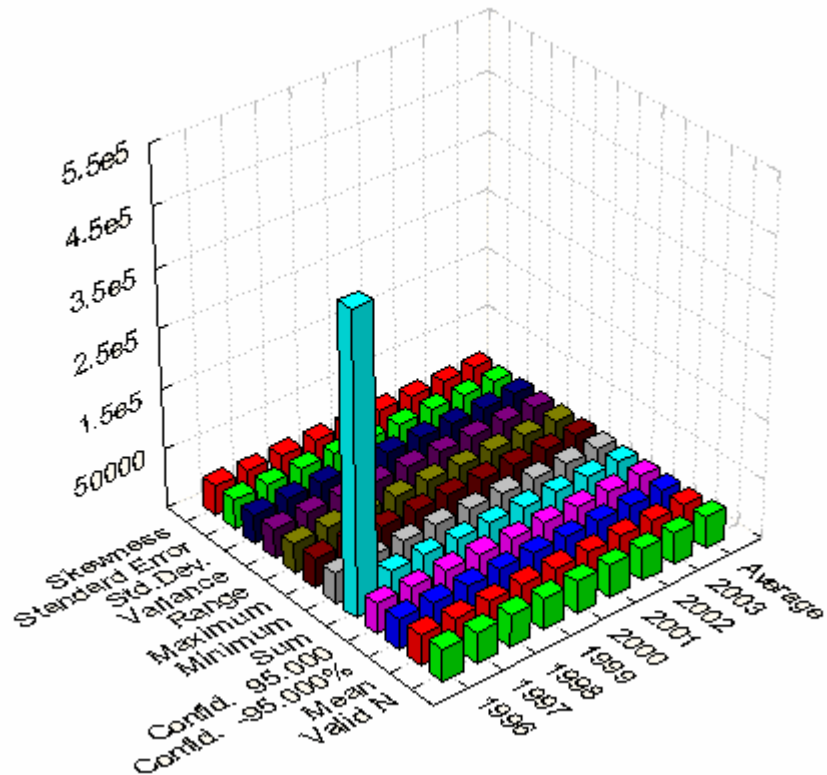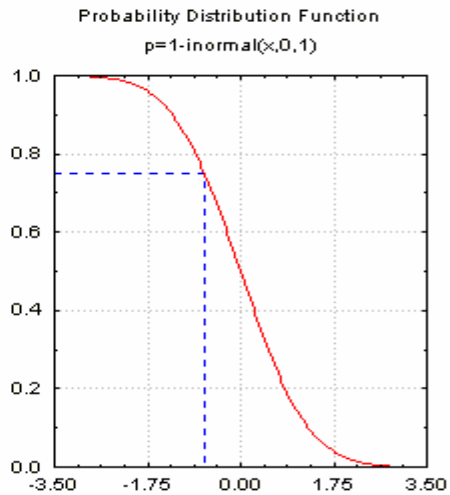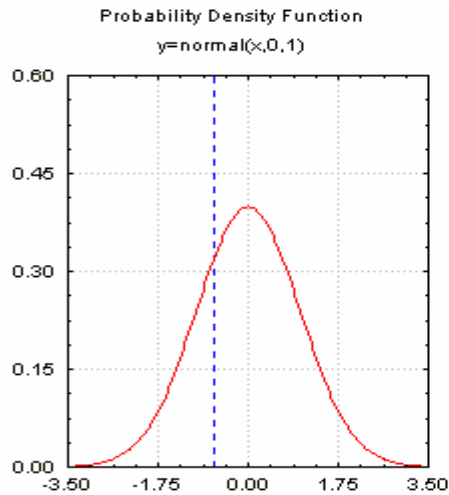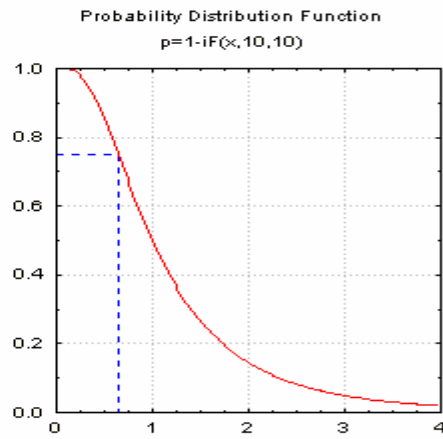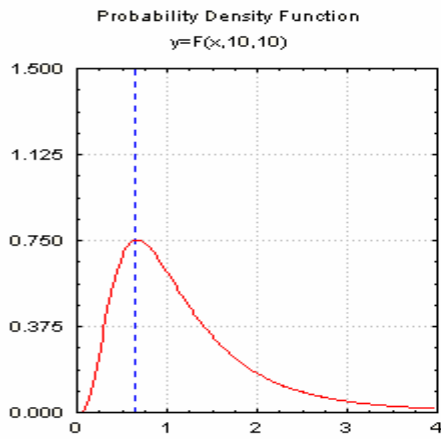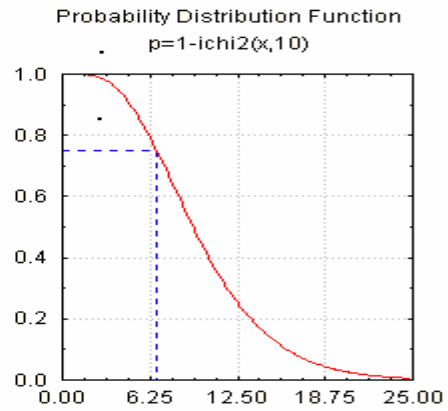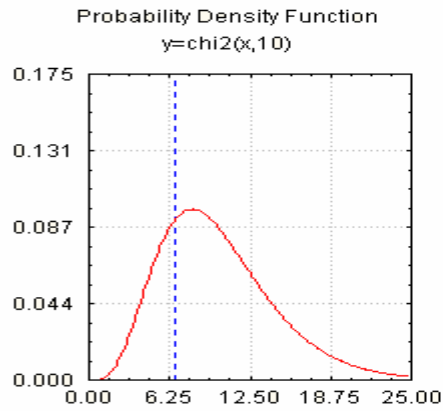
(3) CASH RATIO :

Since cash is the most liquid asset, a financial analyst or marketable securities are equivalent of cash, therefore, they may be included in the computation of cash ratio :

Cash Ratio = Cash + Marketable Securities / Current Liabilities

Table 4.3 represents the case ratio of cement companies for period under study by dividing cash plus marketable securities by current liabilities.

TABLE 4.3 CASH RATIO (IN TIMES)
Cement Industry under study (1995-96 to 2002-03)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	average
Eastern Region									
OCL India Limited	0.12	0.09	0.15	0.1	0.1	0.1	0.06	0.13	0.10
Damodhar Cement & Slag Ltd.	0	0	0	0.03	0	0	0	0	0.00
Ambuja Cement Eastern Limited	0.06	0.02	0.01	0.05	0.09	0.09	0.04	0.04	0.05
Birla Corporation Ltd.	0.11	0.12	0.19	0.1	0.09	0.3	0.46	0.49	0.23
YEARLY AVERAGE	0.07	0.05	0.08	0.07	0.07	0.12	0.14	0.16	0.09
Western Region									
Saurashtra Cement Limited	0.59	0.24	0.22	0.21	0.36	0.18	0.11	0.09	0.25
Gujarat Ambuja Cement Ltd	1.11	0.48	0.83	0.77	0.37	0.09	0.12	0.23	0.5
Gujarat Sidhee Cement Ltd.	0.12	0.23	0.13	0.11	0.1	0.07	0.11	0.36	0.15
YEARLY AVERAGE	0.60	0.31	0.39	0.36	0.27	0.11	0.11	0.22	0.30
Northern Region									
Shree Cement Limited	1.29	0.44	0.07	0.12	0.05	0.03	0.06	0.26	0.29
Associated Cement Cos. Ltd.	0.14	0.15	0.14	0.08	0.05	0.03	0.03	0.04	0.08
YEARLY AVERAGE	0.71	0.29	0.10	0.1	0.05	0.03	0.04	0.19	0.19
Southern Region									
Priyadarshini Cement Limited	0.27	0.41	0.25	0.15	0.2	0.12	0.13	0.06	0.19
Shri Vishnu Cement Limited	0.28	0.33	0.28	0.02	0.02	0.17	0.03	0.08	0.15
Madras Cements Ltd.	0.39	0.32	0.6	0.28	0.18	0.3	0.23	0.19	0.31
Chettinad Cement Corpn. Limited	0.19	0.13	0.06	0.09	0.11	0.1	0.08	0.11	0.10
Dalmia Cement (Bharat) Limited	0.14	0.64	0.5	0.64	0.36	0.4	0.12	0.12	0.36
Deccan Cements Limited	0.61	1.25	0.69	2.18	0.34	1.05	0.54	0.69	0.91
YEARLY AVERAGE	0.31	0.51	0.39	0.56	0.20	0.35	0.18	0.20	0.34
Rest of Region									
Shree Digvijay Cement Limited	0.26	0.24	0.15	0.12	0.03	0.03	0.02	0.01	0.10
Cement Corporation of India Limited	-0.02	0.08	0.06	0.17	0.03	-0.04	0.06	0.02	0.04
YEARLY AVERAGE	0.12	0.16	0.10	0.14	0.03	-0.00	0.04	0.01	0.07

Source : Computed from the annual reports and accounts of

The respective companies from March-1996 to

March- 2003.

Table 4.3 indicated a fluctuating trend in the cash ratio of **Eastern Region**. This ratio varied between 0.05 times in March- 1996 and 0.16 in March-2003. The average ratio of Eastern region was 0.09 times, indicated low liquidity position of companies. The average ratio of Damodar Cement & Slag Ltd. was 0.003 times indicates poor liquidity position of company.

The cash ratio of **Western Region** also recorded a fluctuating tendency during the period of study. The average ratio of Western region was 0.30 times. It was 0.60 times in March-1996 which declined to 0.31 times in March-1997. Than it increased and reached at 0.39 times, then after, it showed a decreased trend in next three years. Finally in March-2003 it stood with 0.22 times.

In **Northern Region** cash ratio showed decreasing trend in first six years under review. It was 0.71 times in March-1996 and 0.29 times in March-1997. In March-1999 it stood 0.10 times. Finally in March-2003 it stood with 0.19 times. The average cash ratio of this region was 0.19 times. The average cash ratio of A.C.C. Ltd. was 0.08 times, which was lowest among all the units of Northern region.

The case ratio in **Southern Region** has witnessed a fluctuating trend during the entire study period. It was 0.31

times in March-1996 and reached at 0.51 times in March-1997. Then after it declined and reached at 0.39 times in March-1998. The ratio varied between 0.18 times in March-2002 and 0.56 times in March-1999. The average ratio of this region was 0.34 times.

In **_Rest of the Regions_** the cash ratio registered a increasing trend in first two years of study period. It was 0.12 times in March-1996 and reached at 0.16 times in March-1997, then after it declined and reached at 0.10 times in March-1998. Finally in March-2003 it stood with 0.07 times showed poor liquidity position. The average cash ratio of this region was 0.07 times, indicated very poor liquidity position.

CHART NO. 4.3 :

Char no. 4.3 is a cone chart in which the annual Cash Ratio of each company is shown respectively in A,B,C,D,E and Anova-Test.

Chart No. 4.3 (A)

Cash Ratio-Eastern Region (In Times)

Chart No. 4.3 (AA)

Cash Ratio - Eastern Region (In Times)

Chart No. 4.3 (B)

Cash Ratio - Western Region
(In Times)
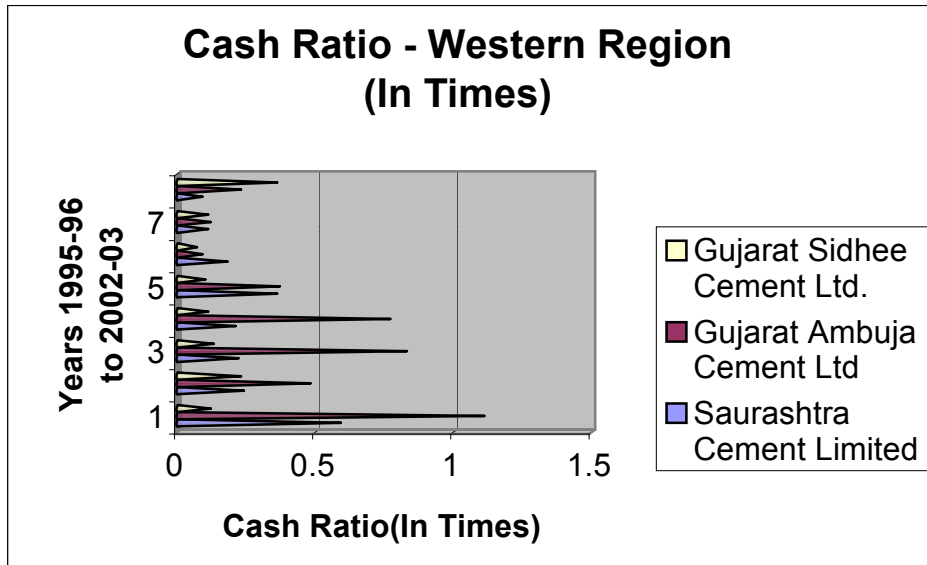
Chart No. 4.3 (BB)

Cash Ratio - Western Region (In Times)
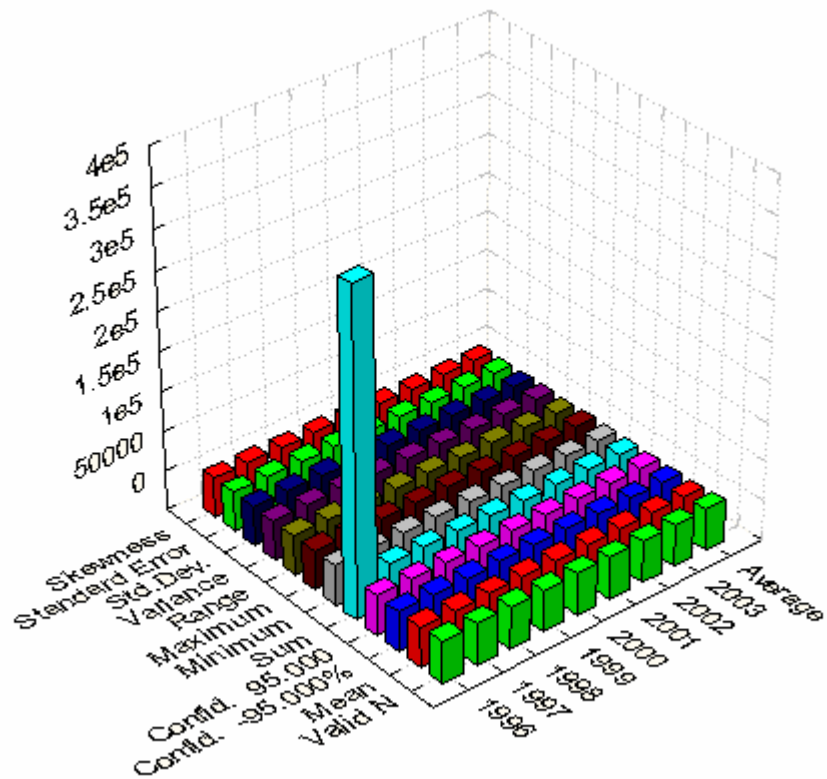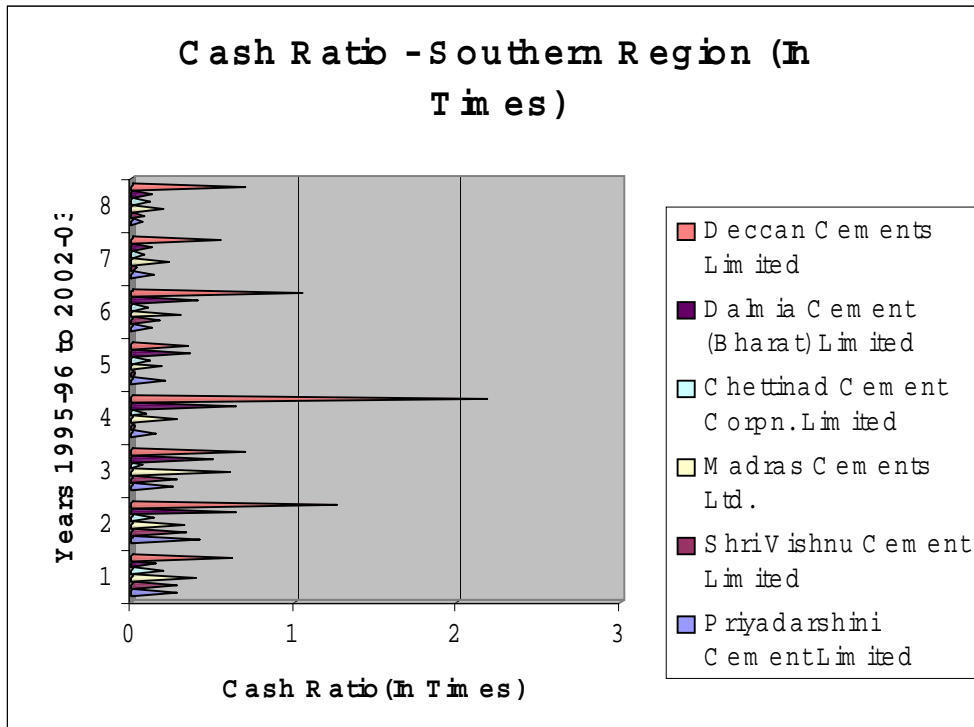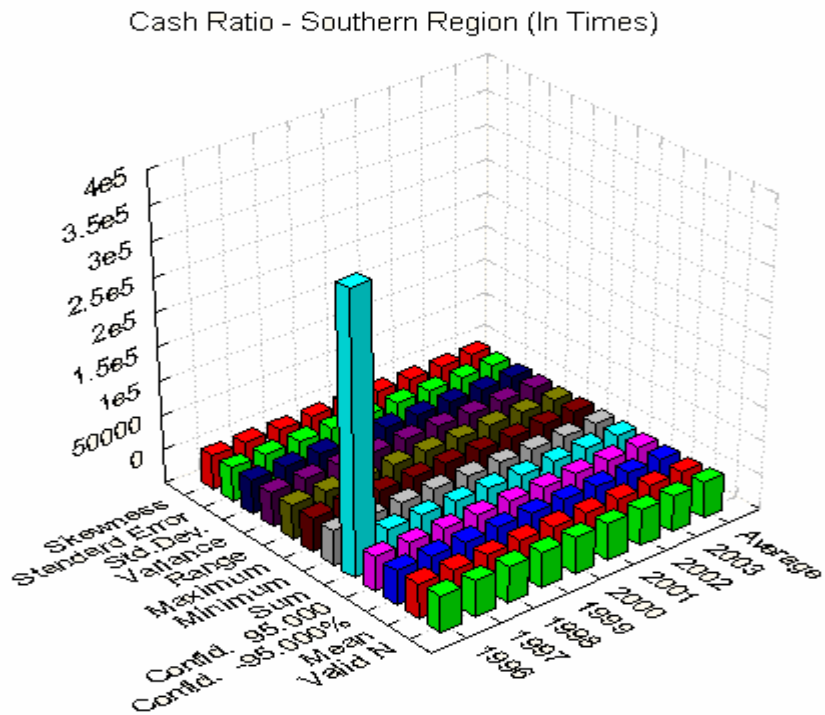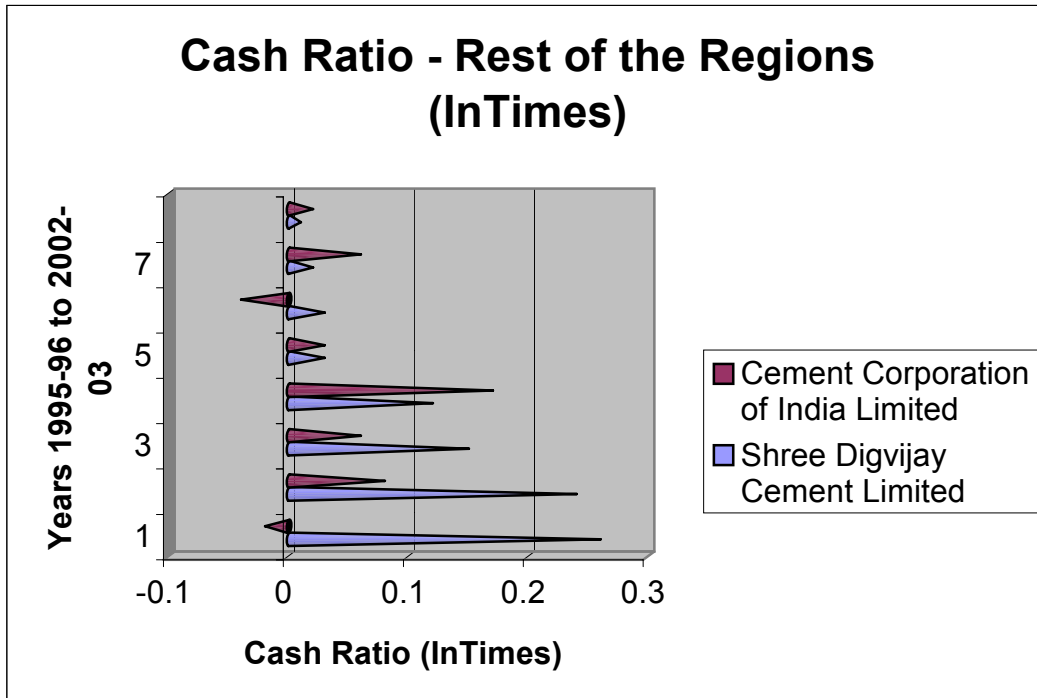
Chart No. 4.3 (C)

Chart No. 4.3 (CC)

Chart No. 4.3 (D)

Cash Ratio - Southern Region (In Times)

Chart No. 4.3 (DD)

Cash Ratio - Southern Region (In Times)

Chart No. 4.3 (E)

Cash Ratio - Rest of the Regions (InTimes)

Chart No. 4.3 (EE)

Cash Ratio - Rest of The Regions (In Times)

Cash Ratio – Anova Test ► Chi 2 – Test, T(Student) – Test, Z – Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=student(x,1)

Probability Distribution Function
p=1-istudent(x,1)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)
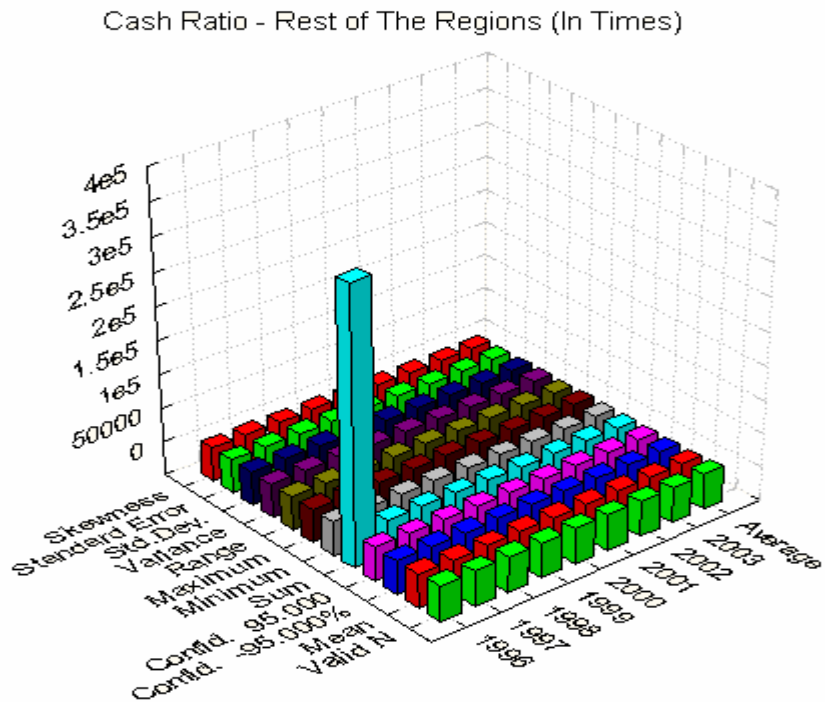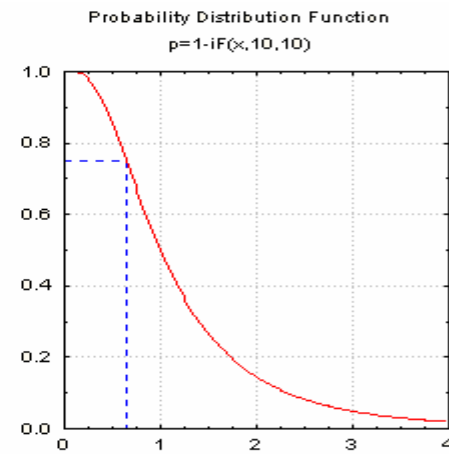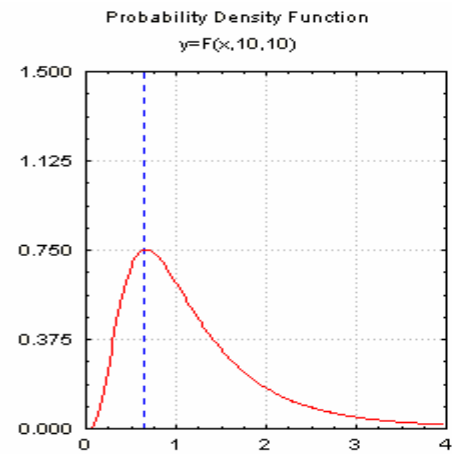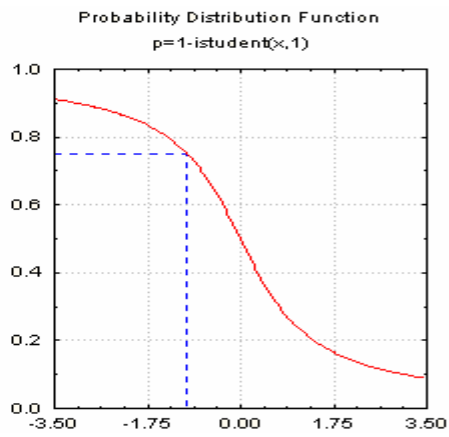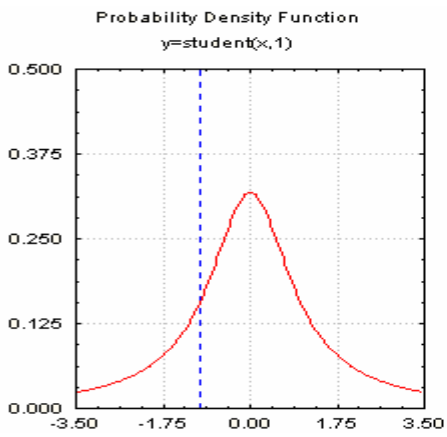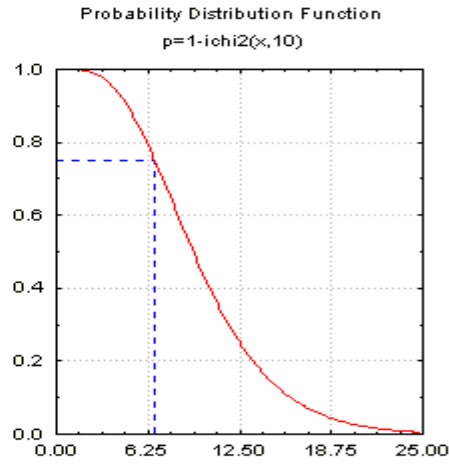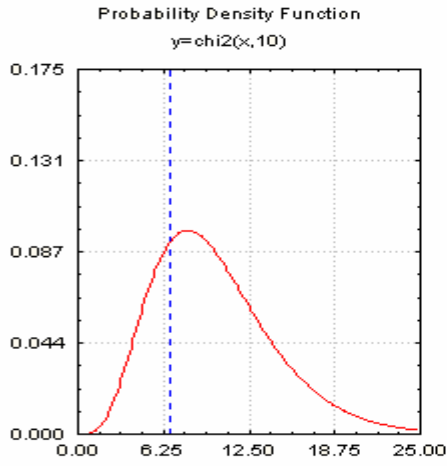
(4)   INTERVAL MEASURE RATIO :

Interval Measure is a ratio which assesses a firm's ability to meet its regular cash expenses. This ratio relates liquid assets to average daily operating cash outflows. The daily operating expenses will be equal to cost of goods sold plus selling, administrative and general expenses less depreciation divided by number of days in the year.

Interval Measure = Current Assets – Inventory / Average

daily operating expenses.

Table 4.4 depicts the overall position of interval measure in cement companies under study :

TABLE NO. 4.4 INTERVAL MEASURE RATIO (RS.CRORES)
Cement Industry under study (1995-96 to 2002-03)

	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	averge
Eastern Region									
OCL India Limited	11.11	16.49	3.7	16.28	19.22	9.73	11.82	13.28	12.70
Damodhar Cement & Slag Ltd.	0	0	0	0	0	0	16.74	5.16	2.73
Ambuja Cement Eastern Limited	6.48	5.61	4.9	-37.2	5.86	5.6	3.46	12.52	0.90
Birla Corporation Ltd.	14.45	4.76	5.2	9.34	4.95	12	10.21	7.85	8.59
YEARLY AVERAGE	**8.01**	**6.71**	**3.45**	**-2.89**	**7.50**	**6.83**	**10.55**	**9.70**	**6.23**
WESTERN REGION									
Saurashtra Cement Limited	19.18	28.24	14.81	29.53	18.39	23.52	22.48	12.03	21.02
Gujarat Ambuja Cement Ltd	26.68	35.75	27.66	31.86	38.6	34.45	31.92	15.98	30.36
Gujarat Sidhee Cement Ltd.	30.08	25.57	-0.4	-4.63	-8.04	-9.17	-1.97	1.32	4.09
YEARLY AVERAGE	**25.31**	**29.85**	**14.02**	**18.92**	**16.31**	**16.26**	**17.47**	**9.77**	**18.49**
Northern Region									
Shree Cement Limited	0	21.75	23.18	18.85	17.36	9.84	0	19.77	13.84
Associated Cement Cos. Ltd.	14.12	10.32	3.64	13.98	10.71	15.4	20.25	15.16	12.94
	7.06	16.03	13.41	16.41	14.03	12.62	10.12	17.46	
YEARLY AVERAGE	**7.06**	**16.03**	**13.41**	**16.41**	**14.03**	**12.62**	**10.12**	**17.46**	**13.39**
Southern Region									
Priyadarshini Cement Limited	0	26.57	24.36	24.7	22.86	20.46	22.83	13.98	19.47
Shri Vishnu Cement Limited	24.06	20.22	20.58	16.62	-5.6	13.97	24.04	8.45	15.29
Madras Cements Ltd.	28.06	33.39	30.71	29.33	25.47	28.44	28.26	23.57	28.40
Chettinad Cement Corpn. Limited	29.72	31.73	34.44	31.82	30.23	23.53	24.3	24.13	28.73
Dalmia Cement (Bharat) Limited	10.88	23.94	22.69	15.71	15.1	16.22	23.97	24.4	19.11
Deccan Cements Limited	28.6	26.73	24.45	21.25	16.99	18.55	20	17.83	21.8
YEARLY AVERAGE	**20.22**	**27.09**	**26.20**	**23.23**	**17.50**	**20.19**	**23.9**	**18.72**	**22.13**
Rest of Region									
Shree Digvijay Cement Limited	0	7.51	14.07	8.16	1.68	0.85	26.6	13.35	9.02
Cement Corporation of India Limited	0	0	0	0	0	0	0	0	0
YEARLY AVERAGE	**0**	**3.75**	**7.03**	**4.08**	**0.84**	**0.42**	**13.3**	**6.67**	**4.51**

Source : Computed from the annual reports and accounts of the

respective Companies from March-1996 to March-2003.

On the basis of the table 4.4 it can be said that the Interval Measure of **_Eastern Region_** fluctuated from March-1993 to March-2003. The Interval measure ratio in Eastern region witnessed decreasing trend in first four years of the period under study. It was Rs.8.01 crores in March-1993, which stopped at Rs.-2.89 crores in March-1999. In March-2003 the ratio was Rs.9.70 crores. The average interval measure ratio of this region was Rs.6.23 crores.

In **_Western Region_**, the Interval Measure witnessed a fluctuating trend during the study period. The ratio varied between Rs.9.77 crores in March-2003 and Rs.29.95 crores in March-1997. The average ratio of this region was Rs.18.49 crores. The Interval Measure ratio of Gujarat Ambuja Cement Ltd. was always more than standard norms. The Interval measure ratio of Suarashtra Cement Ltd. and Gujarat Shidhee Cement Ltd. were Rs.21.02 crores and Rs.4.09 crores respectively.

The Interval Measure ratio in the **_Northern Region_** has witnessed a fluctuating trend during the entire study period. It was Rs.7.06 crores in March-1996 and reached at Rs.16.03 crores in March-1997, then after it declined and reached at Rs.13.41 crores in March-1998. The ratio varied between Rs.7.06 crores in March-1996 and Rs.17.46 crores in March-2003. The average ratio of this region was Rs.18.49 crores.

Table 4.4 indicated a fluctuating trend in the Interval Measure ratio of **Southern Region**. During the period under study the Interval measure ratio of this region varied from Rs.17.50 crores in March-2000 to Rs.27.09 crores in March-1997. The Interval Measure ratio of this region was higher than average of other regions.

In **Rest of the Regions** the Interval Measure ratio registered poor and fluctuating tendency during the period of study. Similarly it varied from Rs.0.0 crores to Rs.13.3 crores. The average ratio of this region was Rs.40.51 crores. The Interval Measure ratio of this region was registered a increasing trend in first three years of study period. It was Rs.0.0 in March-1996 and reached Rs.7.03 crores in March-1998, then after it declined and reached at Rs.0.42 crores in March-2001. Finally in March-2003 it stood with Rs.6.67 crores showed poor Interval measure position.

CHART NO. 4.4 :

In chart no.4.4 the Interval measure obtained by each company in the all regions are shown in the graph of A,B,C,D,E and Anova-Test.

Chart No. 4.4 (A)

Interval Measure Ratio-Eastern Region(Rs. Crores)

Years 1995-96 to 2002-03

Legend:
- OCL India Limited
- Damodhar Cement & Slag Ltd.
- Ambuja Cement Eastern Limited
- Birla Corporation Ltd.

Chart No. 4.4 [AA]

Interval Measure Ratio - Eastern Region (Rs. Crores)

CHART NO 4.4 [B]

Interval Measure Ratio-Western Region (Rs. Crores)

Years 1995-96 to 2002-03

Legend: Saurashtra Cement Limited; Gujarat Ambuja Cement Ltd; Gujarat Sidhee Cement Ltd.

Chart No. 4.4[BB]

Interval Measure Ratio - Western Region (Rs. Crores)

CHART NO 4.4 [C]

Interval Measure Ratio - Northern Region (Rs. Crores)
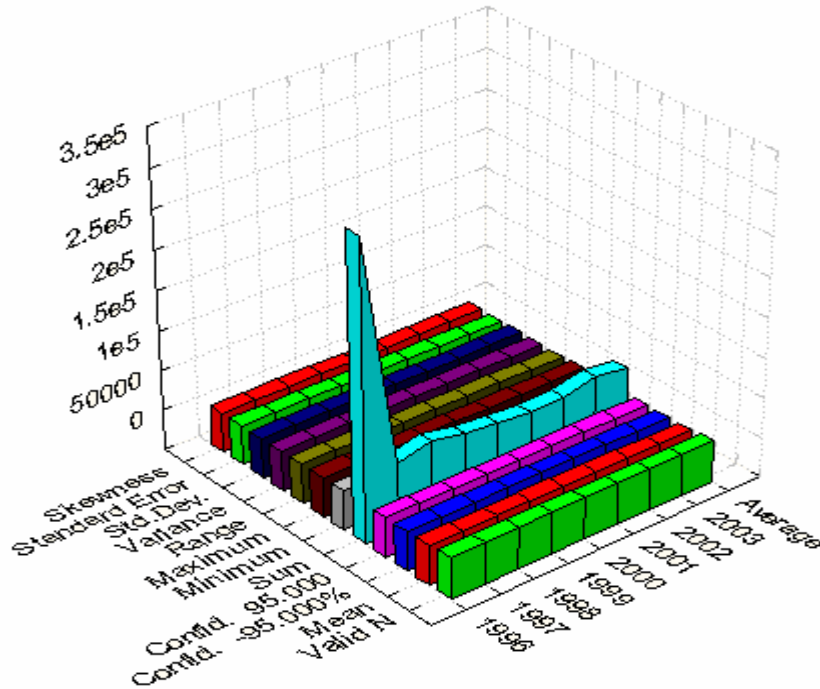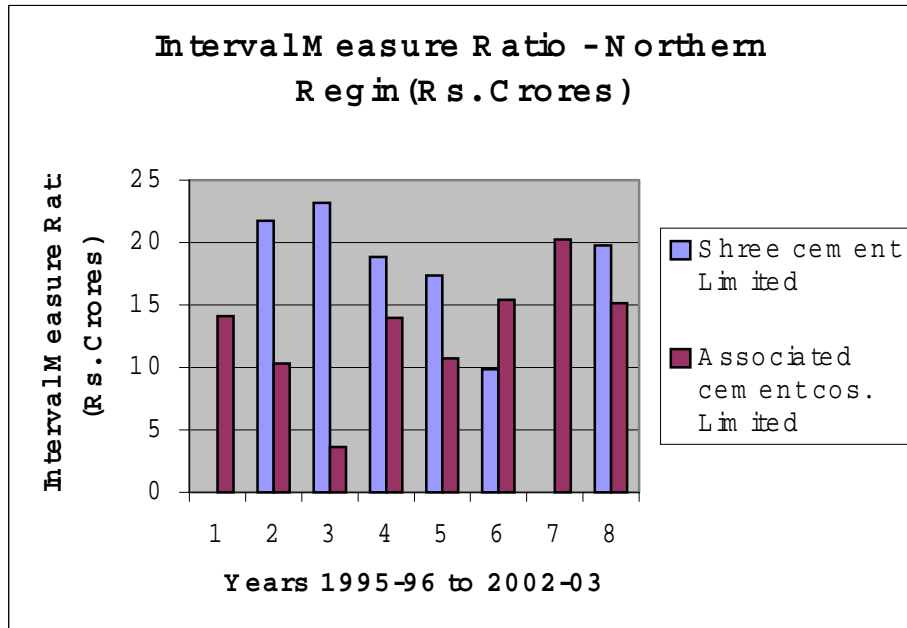
Chart No. 4.4[CC]

Interval Measure Ratio - Northern Region (Rs. Crores)

CHARTNO. 4.4.[D]

Interval Measure Ratio- Southern Region (Rs. Crores)

Years 1995-96 to 2002-03

Legend:
- Priyadarshini Cement Limited
- Shri Vishnu Cement Limited
- Madras Cements Ltd.
- Chettinad Cement Corpn. Limited
- Dalmia Cement (Bharat) Limited
- Deccan Cements Limited

CHART NO. 4.4. [D.D]

Interval Measure Ratio - Southern Region (Rs. Crores)

CHART NO. 4.4. [E]

Interval Measure Ratio - Rest of the Regions (Rs. Crores)
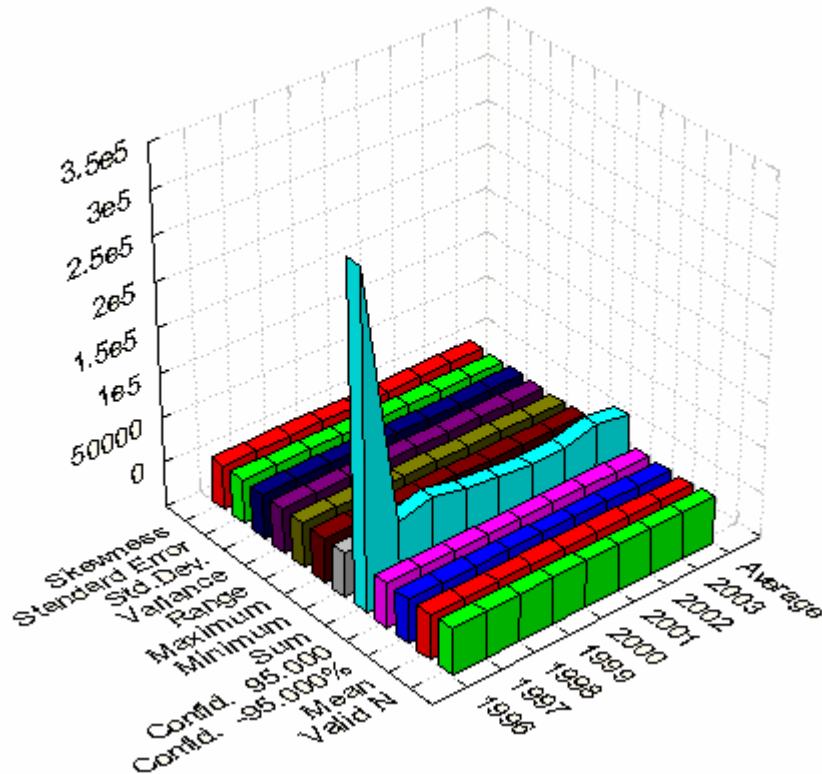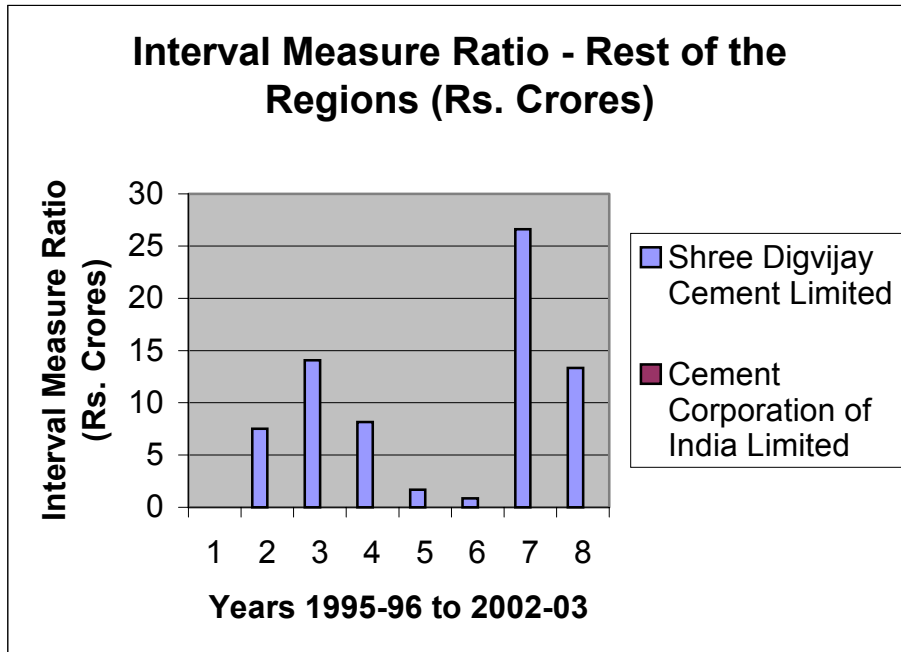
CHART NO. 4.4. [EE]

Interval Measure Ratio - Rest of the Regions (Rs. Crores)
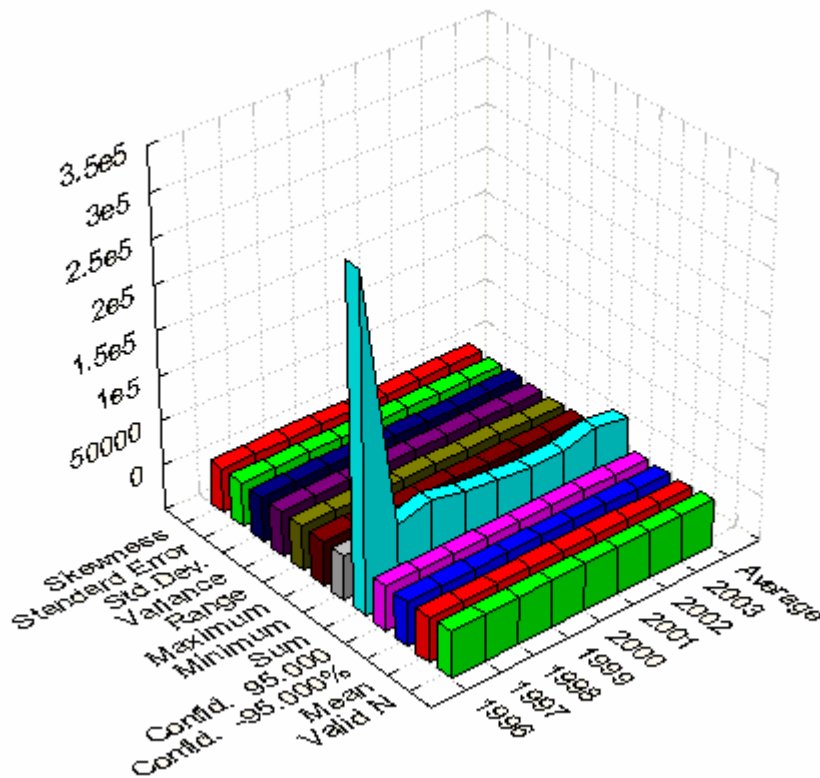
Interval Measure Ratio – Anova Test ► Chi 2 – Test, F (Student) – Test, Z (Normal) – Test :

Probability Density Function
y=chi2(x,10)

Probability Distribution Function
p=1-ichi2(x,10)

Probability Density Function
y=F(x,10,10)

Probability Distribution Function
p=1-iF(x,10,10)

Probability Density Function
y=normal(x,0,1)

Probability Distribution Function
p=1-inormal(x,0,1)
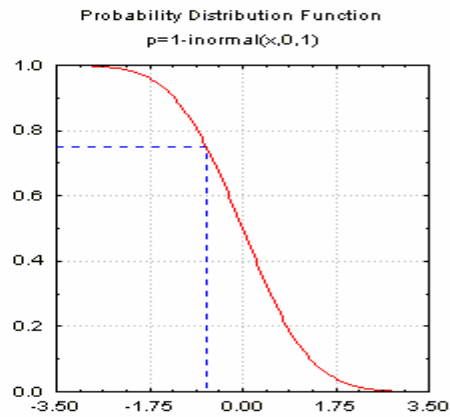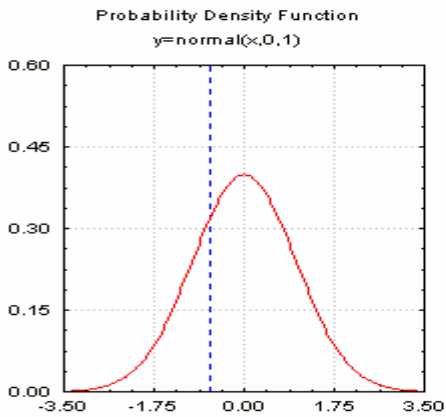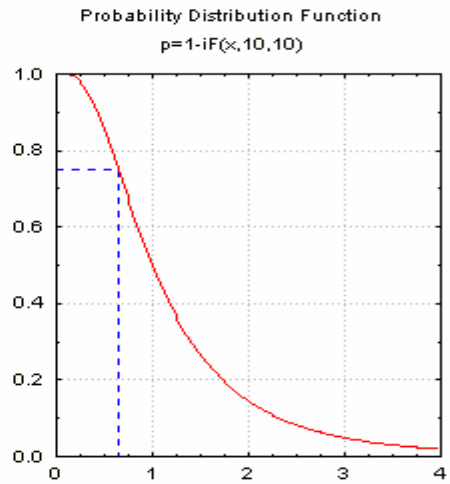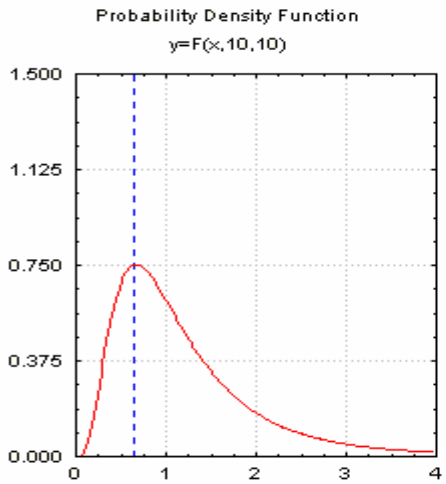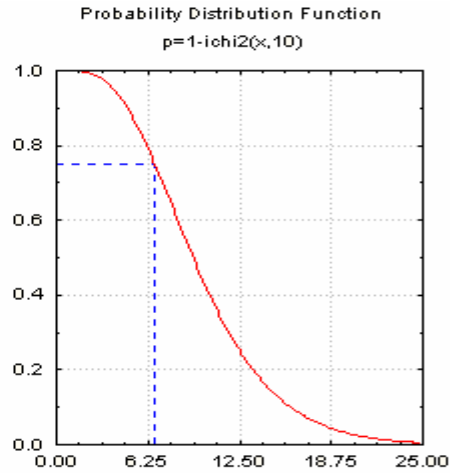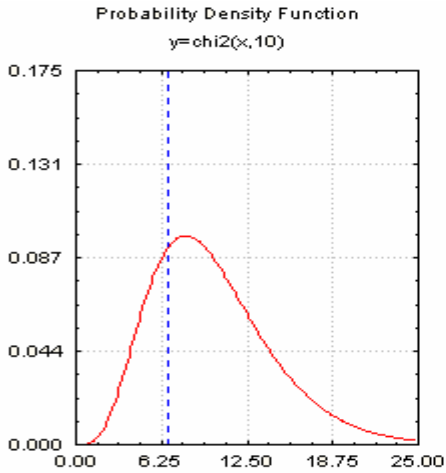
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CHAPTER-5

PROFITABILITY VIS-A-VIS LIQUIDITY

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5.1. INTRODUCTION :

Liquidity and profitability are the two vital aspects of business life. Inadequate and excess working capital is the two extreme on the continuum of liquidity management. Inadequate working capital results in the risk of inability in meeting payments, schedules, while excess working capital adversely affects the profitability. A sound and systematic approach to the working capital management should ensure trade off between liquidity and profitability. Managerial decisions relating to cash, receivable, inventory and marketable securities are ultimately reflected in liquidity risk and profitability and in turn in the value of the firm.

5.2. PROFITABILITY VIS-À-VIS LIQUIDITY :

Working capital is related to liquidity. Liquidity and profitability are two important and major aspects of business life. No company can survive, if it has no liquidity. A company may exist without making profits but can not survive without liquidity. A company not making profits may be treated as a sick unit, but one having no liquidity, may soon meet with its downfall and ultimately closed down. So there is need of close relationship between liquidity and profitability, but they should be separately recognized and

managed. In this context the interaction between liquidity and profitability is shown in the following 2x matrix

CHART

		Liquidity	Liquidity
High	Profitability	Cell - 1	Cell - 2
Low	Profitability	Cell - 3	Cell - 4
		High	Low

CELL- 1

The strongest companies will be located in cell -1 where both profitability and liquidity are high. And it good performance of unit.

CELL- 2

The companies which are in serious position will be located in cell-2 where profitability is high but liquidity is low, it shows the shortage of fund for payment. So it needs to improve working capital management.

CELL-3

The companies which have high liquidity and low profitability are considered in a better financial condition.

CELL- 4

The companies which are located in cell-4 are unsuccessful and corporate failure is imminent. Because of low liquidity and low profitability, such firm can't survive.

The units, which are strongest, located in cell-1, in which both profitability and liquidity are being achieved. While firms cannot survive, which are in Cell-4 because in this position both profitability and liquidity are low. A question does arise that between cell-2 and Cell3 which condition is preferable. The answer is that being located in Cell-2 poses a more serious threat to the enterprise. Thus if the company is high liquid through low profitable, it will generally be in a position to revise its strategy. If the company is high profitable but low liquid that may find that it is forced to be out of business before it gets the change to correct the problem. So working capital management has thus become basic and broad measures of judging the performance of business firm.

(I) Analysis of ROI Ratio & Current Ratio :

Table 5.1 indicates the relation between ROI and Current Ratio of cement industry under study :

TABLE NO 5.1
A COMPARATIVE ANAYSIS OF ROI & CURRENT RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF ROI RATIO (RS. CRORES)	AVERAGE OF CURRENT RATIO (IN TIMES)
Eastern Region		
OCL India Limited	41.365	1.645
Damodhar Cement & Slag Ltd.	8.415	0.51125
Ambuja Cement Eastern Limited	30.44	0.64125
Birla Corporation Ltd.	68.09	1.21375
YEARLY AVERAGE	**37.0775**	**1.0028125**
Western Region		
Saurashtra Cement Limited	22.70625	1.00125
Gujarat Ambuja Cement Ltd	396.08625	1.51
Gujarat Sidhee Cement Ltd.	22.92125	1.0625
YEARLY AVERAGE	**147.2379167**	**1.19125**
Northern Region		
Shree Cement Limited	72.025	1.615
Associated Cement Cos. Ltd.	345.63	0.87625
YEARLY AVERAGE	**208.8275**	**1.245625**
Southern Region		
Priyadarshini Cement Limited	32.95625	1.59875
Shri Vishnu Cement Limited	15.375	1.4075
Madras Cements Ltd.	155.74625	1.5475
Chettinad Cement Corpn. Limited	61.40375	1.065
Dalmia Cement (Bharat) Limited	77.93	2.0825
Deccan Cements Limited	12.8	2.38
YEARLY AVERAGE	**59.36854167**	**1.680208333**
Rest of Region		
Shree Digvijay Cement Limited	2.8225	0.955
Cement Corporation of India Limited	-22.3825	0.26375
YEARLY AVERAGE	**-9.78**	**0.609375**

Ta**ble No.5.1** shows average of ROI in crores whereas average current ratio is shown in times. when we compare them both it shows the direct relation between the two. It means if there is increase in profit or loss, there is growth in the current ratio. Its discussion is as under.

In the **Eastern Region** the average ROI shown as Rs.37.07crores. As against it the current ratio is shown as 1.00 in times.

The average ROI of the **western Region** is Rs.147.23crores and the current ratio is 1.19 times.
In the **Northern Region** the profit is Rs.208.82 crores. As against it, current Ratio is 1.24 times.

In the **Southern Region**, its profit is as shown as Rs.59.36crores. As against it, its current ratio shows 1.68 in times.

The companies of **Rest of The Regions** show average loss, which is Rs. –9.78crores. Whereas its Times Ratio is reduced to 0.69% so while discussing ROI , it can be its times current ratio increases.

(II) Analysis of ROI Ratio & Quick Ratio :

Table 5.2 shows the relation between ROI Ratio & Quick Ratio of cement industry under the study period 1995-'96 to 2002-'03 :

TABLE NO 5.2
A COMPARATIVE ANAYSIS OF ROI RATIO & QUICK RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF ROI RATIO (RS. CRORES)	AVERAGE OF QUICK RATIO (IN TIMES)
Eastern Region		
OCL India Limited	41.365	0.62125
Damodhar Cement & Slag Ltd.	8.415	0.00375
Ambuja Cement Eastern Limited	30.44	0.2325
Birla Corporation Ltd.	68.09	0.41
YEARLY AVERAGE	**37.0775**	**0.316875**
Western Region		
Saurashtra Cement Limited	22.70625	0.45
Gujarat Ambuja Cement Ltd	396.08625	0.58
Gujarat Sidhee Cement Ltd.	22.92125	0.375
YEARLY AVERAGE	**147.2379167**	**0.468333333**
Northern Region		
Shree Cement Limited	72.025	0.63
Associated Cement Cos. Ltd.	345.63	0.23375
YEARLY AVERAGE	**208.8275**	**0.431875**
Southern Region		
Priyadarshini Cement Limited	32.95625	0.53875
Shri Vishnu Cement Limited	15.375	0.44875
Madras Cements Ltd.	155.74625	0.48875
Chettinad Cement Corpn. Limited	61.40375	0.23875
Dalmia Cement (Bharat) Limited	77.93	0.56625
Deccan Cements Limited	12.8	1.29375
YEARLY AVERAGE	**59.36854167**	**0.595833333**
Rest of Region		
Shree Digvijay Cement Limited	2.8225	0.34125
Cement Corporation of India Limited	-22.3825	0.06625
YEARLY AVERAGE	**-9.78**	**0.20375**

In Table No5.2 while discussing the ROI and Quick Ratio, it can be said that in the **Eastern Region**, the yearly average is seen as Rs.37.07 crores, where as Quick Ratio is 0.31%.

In the **Western Region,** as against Rs.147.23 crores the Quick Ratio is 0.46%.

In the **Northern Region,** as against Rs.208.82 crores, the Quick Ratio is 0.46%.

In the **Southern Region** as against the ROI of Rs.59.36 crores, the Quick Ratio is 0.59%

In *The Rest of the regions* the companies show average loss, which is Rs. -9.78 crores whereas its, Quick Ratio is only 0.20%

(III) Analysis of ROI Ratio & Cash Ratio :

Table 5.3 represent the average of ROI Ratio & average of Cash Ratio of the respective companies from 1995-'96 to 2002-'03 :

TABLE NO 5.3

A COMPARATIVE ANAYISIS OF ROI RATIO & CASH RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF CASH RATIO (Rs. Crores)	AVERAGE OF ROI RATIO (Rs. Crores)
Eastern Region		
OCL India Limited	0.10625	41.365
Damodhar Cement & Slag Ltd.	0.00375	8.415
Ambuja Cement Eastern Limited	0.05	30.44
Birla Corporation Ltd.	0.2325	68.09
YEARLY AVERAGE	**0.098125**	**37.0775**
Western Region		
Saurashtra Cement Limited	0.25	22.70625
Gujarat Ambuja Cement Ltd	0.5	396.08625
Gujarat Sidhee Cement Ltd.	0.15375	22.92125
YEARLY AVERAGE	**0.30125**	**147.2379167**
Northern Region		
Shree Cement Limited	0.29	72.025
Associated Cement Cos. Ltd.	0.0825	345.63
YEARLY AVERAGE	**0.191428571**	**208.8275**
Southern Region		
Priyadarshini Cement Limited	0.19875	32.95625
Shri Vishnu Cement Limited	0.15125	15.375
Madras Cements Ltd.	0.31125	155.74625
Chettinad Cement Corpn. Limited	0.10875	61.40375
Dalmia Cement (Bharat) Limited	0.365	77.93
Deccan Cements Limited	0.91875	12.8
YEARLY AVERAGE	**0.342291667**	**59.36854167**
Rest of Region		
Shree Digvijay Cement Limited	0.1075	2.8225
Cement Corporation of India Limited	0.045	-22.3825
YEARLY AVERAGE	**0.07625**	**-9.78**

Table No.5.3. A Comparative Analysis of ROI and cash Ratio is shown in Table5.3, cash to current liabilities shows in Rs.crores. On its basis, according to the principle of accounts, if the company desires to have cash more, the profit will be reduced and if it desired the cash as less, the possibility of the profit will be more.

In the Western Region, **Saurashtra Cement Ltd.**, **Gujarat Ambuja Cement Ltd.**, **Gujarat Siddhi Cement Ltd.**, - the average ROI was Rs.147.23croreas. whereas its Cash Ratio is Rs. 0.30 crores.

In the **Northern Region**, high profit rate is seen; its ROI is Rs.208.82crores whereas its Cash Ratio is Rs.0.19crores. This shows that if the profit is more the cash is less.

In the **Southern Region,** the ROI seen as Rs.59.36 crores, whereas, its Cash Ratio is worth Rs.0.34 crores.

In **Rest of The Regions** is a unit that shows loss in each zone. Its loss seen in crores is Rs.-9.78 crores. As against it, its Cash Ratio is seen as Rs. 0.7 crores. In short, while discussing each & every zone it can be said that if the companies have more profit, their Cash Ratio is also more. Therefore every company should show more and more profit.

Here one does not see profitability vis-à-vis a liquidity but one can see profitability equal to liquidity. Which means if, the profit is more, the liquidity is also more.

This can be proved while discussing cash with profit.

(IV) Analysis of ROI Ratio & Interval Measure Ratio :

Table 5.4 indicates the comparative analysis of ROI Ratio & Interval Measure Ratio of cement industry under study:

TABLE NO 5.4
A COMPARATIVE ANALYSIS OF ROI RATIO & INTERVAL MEASURE RATIO (1995-96 TO 2002-03)

	AVERAGE OF INTERVAL MEASURE RATIO (RS.CRORES)	AVERAGE OF ROI RATIO (RS. CRORES)
Eastern Region		
OCL India Limited	12.70375	41.365
Damodhar Cement & Slag Ltd.	2.7375	8.415
Ambuja Cement Eastern Limited	0.90375	30.44
Birla Corporation Ltd.	8.595	68.09
YEARLY AVERAGE	**6.235**	**37.0775**
Western Region		
Saurashtra Cement Limited	21.0225	22.70625
Gujarat Ambuja Cement Ltd	30.3625	396.08625
Gujarat Sidhee Cement Ltd.	4.095	22.92125
YEARLY AVERAGE	**18.49333333**	**147.2379167**
Northern Region		
Shree Cement Limited	13.84375	72.025
Associated Cement Cos. Ltd.	12.9475	345.63
YERLY AVERAGE	**13.395625**	**208.8275**
Southern Region		
Priyadarshini Cement Limited	19.47	32.95625
Shri Vishnu Cement Limited	15.2925	15.375
Madras Cements Ltd.	28.40375	155.74625
Chettinad Cement Corpn. Limited	28.7375	61.40375
Dalmia Cement (Bharat) Limited	19.11375	77.93
Deccan Cements Limited	21.8	12.8
YEARLY AVERAGE	**22.13625**	**59.36854167**
Rest of Region		
Shree Digvijay Cement Limited	9.0275	2.8225
Cement Corporation of India Limited	0	-22.3825
YEARLY AVERAGE	**4.51375**	**-9.78**

In table No.5.4 the average ROI of the ***Eastern Region*** was Rs. 37.07crores whereas its Interval Measure was Rs. 6.23 crores.

In the **Western Region** its ROI is Rs.147.23 crores, whereas its Interval measure is Rs.18.49 crores.

In the **Northern Region**, this region getting yearly average of Rs.208.82 crores, has its interval measure worth Rs.13.39 crores.

In the **Southern Region**, its average ROI is Rs.59.36 crores, and its interval measures is Rs.22.13 crores.

In **Rest of The Regions** its loss is Rs.–9.78 crores and its Interval measure is Rs.4.57 crores.

While discussing all the four proportions together ROI in liquidity, we can say that ROI depends on cash and it depends on profit. If the proportion of profit is more, the proportion of liquidity in this relation is more.

(V) Analysis of Operating Profit Ratio & Current Ratio :

Table 5.5 represent the average of Operating profit ratio and average of current ratio of the respective companies from 1995-'96 to 2002-'03 :

TABLE NO 5.5
A COMPARATIVE ANALYSIS OF OPERATING PROFIT RATIO & CUREENT RATIO
(1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF OPERATING PROFIT RATIO (RS.CRORES)	AVERAGE OF CURRENT RATIO (IN TIMES)
Eastern Region		
OCL India Limited	17.2675	1.645
Damodhar Cement & Slag Ltd.	0.055	0.51125
Ambuja Cement Eastern Limited	-22.3975	0.64125
Birla Corporation Ltd.	6.67375	1.21375
YEARLY AVERAGE	**0.3996875**	**1.0028125**
Western Region		
Saurashtra Cement Limited	-0.7725	1.00125
Gujarat Ambuja Cement Ltd	222.29375	1.51
Gujarat Sidhee Cement Ltd.	-16.03375	1.0625
YEARLY AVERAGE	**68.49583333**	**1.19125**
Northern Region		
Shree Cement Limited	35.66375	1.615
Associated Cement Cos. Ltd.	122.7025	0.87625
YEARLY AVERAGE	**79.183125**	**1.245625**
Southern Region		
Priyadarshini Cement Limited	21.30375	1.59875
Shri Vishnu Cement Limited	8.2175	1.4075
Madras Cements Ltd.	106.33	1.5475
Chettinad Cement Corpn. Limited	33.47125	1.065
Dalmia Cement (Bharat) Limited	42.57375	2.0825
Deccan Cements Limited	8.40125	2.38
YEARLY AVERAGE	**36.71625**	**1.680208333**
Rest of Region		
Shree Digvijay Cement Limited	-15.65375	0.955
Cement Corporation of India Limited	-117.31	0.26375
YEARLY AVERAGE	**-66.481875**	**0.609375**

Table No.5.5 A Comparative Analysis of average operating profit with its current Ratio:

The operating profit of **Eastern Region** is Rs.0.39 crores, and average Current Ratio is 1.00 times.

In the **Western Region**, its yearly average of operating profit is Rs.68.49 crores, and its Current Ratio is 1.00.

In the ***Northern Region*** the operating profit is Rs.79.18 crores and Current Ratio is 1.24 times.

In the **Southern Region**, the operating profit is in Rs. crores, yearly average is Rs.36.71 crores, and Current Ratio is 1.68 times which is maximum.

Rest of The Regions shows loss. Worth Rs.-66.48 crores and its current Ratio is 0.60 times, which is minimum.

(VI) Analysis of Operating Profit Ratio & Quick Ratio :

Table 5.6 shows the relation between Operating Profit Ratio and Quick Ratio of respective companies from 1995-'96 to 2002-'03 :

TABLE NO 5.6
A COMPARATIVE ANALYSIS OF OPERATING PROFIT RATIO & QUICK RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF OPERATING PROFIT RATIO (RS.CRORES)	AVERAGE OF QUICK RATIO (IN TIMES)
Eastern Region		
OCL India Limited	17.2675	0.62125
Damodhar Cement & Slag Ltd.	0.055	0.00375
Ambuja Cement Eastern Limited	-22.3975	0.2325
Birla Corporation Ltd.	6.67375	0.41
YEARLY AVERAGE	**0.3996875**	**0.316875**
Western Region		
Saurashtra Cement Limited	-0.7725	0.45
Gujarat Ambuja Cement Ltd	222.29375	0.58
Gujarat Sidhee Cement Ltd.	-16.03375	0.375
YEARLY AVERAGE	**68.49583333**	**0.468333333**
Northern Region		
Shree Cement Limited	35.66375	0.63
Associated Cement Cos. Ltd.	122.7025	0.23375
YEARLY AVERAGE	**79.183125**	**0.431875**
Southern Region		
Priyadarshini Cement Limited	21.30375	0.53875
Shri Vishnu Cement Limited	8.2175	0.44875
Madras Cements Ltd.	106.33	0.48875
Chettinad Cement Corpn. Limited	33.47125	0.23875
Dalmia Cement (Bharat) Limited	42.57375	0.56625
Deccan Cements Limited	8.40125	1.29375
YEARLY AVERAGE	**36.71625**	**0.595833333**
Rest of Region		
Shree Digvijay Cement Limited	-15.65375	0.34125
Cement Corporation of India Limited	-117.31	0.06625
YEARLY AVERAGE	**-66.481875**	**0.20375**

Table No.5.6- This table shows the comparative analysis of average operating profit (Rs.Crores) and Quick Ratio.

In the **Eastern Region** its yearly average from 1996 to 2003 shows worth Rs.0.39 crores. As against it average of Quick Ratio is 0.31 times.

In the **Western Region**, its operating Profit Ratio is worth Rs.68.49 crores, and the Quick Ratio is 0.46 times.

In the **Northern region**, its operating Profit Ratio is Rs.79.18 crores. Whereas Quick Ratio is only 0.43 times.

In the **Southern Region** if we see the average from March 1996 to March 2003, it is Rs.36.71 crores. Whereas its Quick Ratio is 0.59 times.

In the **Rest of The regions,** both the companies selected from the region, show loss their proportion of Operating Ratio is Rs.–66.48 crores whereas their Quick Ratio is –0.20 times.

Seeing the above table it can be said that, if the operating profit is high the Quick Ratio is also high and the operating profit is dependent on gross profit. It means, if the gross profit is high the operating profit is also high. While discussing the profitability, vis-à-vis, it can be said that, there is direct

relation between operating profit and Quick Ratio. It means, if the operating profit is high, the Quick Ratio is also high and if the operating profit is low the Quick Ratio is proportionately low. That is why, it is necessary that we should take the base of number of the companies.

(VII)   Analysis of Operating Profit Ratio & Cash Ratio :

Table 5.7 shows the comparative analysis of Operating Profit Ratio & Cash Ratio of selected companies under the study – 1995-'96 to 2002-'03 :

TABLE NO 5.7
A COMPARATIVE ANALYSIS OF OPERATING PROFIT RATIO & CASH RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF OPERATING PROFIT RATIO (RS.CRORES)	AVERAGE OF CASH RATIO (IN TIMES)
Eastern Region		
OCL India Limited	17.2675	0.10625
Damodhar Cement & Slag Ltd.	0.055	0.00375
Ambuja Cement Eastern Limited	-22.3975	0.05
Birla Corporation Ltd.	6.67375	0.2325
YEARLY AVERAGE	**0.3996875**	**0.098125**
Western Region		
Saurashtra Cement Limited	-0.7725	0.25
Gujarat Ambuja Cement Ltd	222.29375	0.5
Gujarat Sidhee Cement Ltd.	-16.03375	0.15375
YEARLY AVERAGE	**68.49583333**	**0.30125**
Northern Region		
Shree Cement Limited	35.66375	0.29
Associated Cement Cos. Ltd.	122.7025	0.0825
YEARLY AVERAGE	**79.183125**	**0.191428571**
Southern Region		
Priyadarshini Cement Limited	21.30375	0.19875
Shri Vishnu Cement Limited	8.2175	0.15125
Madras Cements Ltd.	106.33	0.31125
Chettinad Cement Corpn. Limited	33.47125	0.10875
Dalmia Cement (Bharat) Limited	42.57375	0.365
Deccan Cements Limited	8.40125	0.91875
YEARLY AVERAGE	**36.71625**	**0.342291667**
Rest of Region		
Cement Corporation of India imited	-117.31	0.045
YEARLY AVERAGE	**-66.481875**	**0.07625**

Table No.5.7 shows the Comparative Analysis of average operating profit and average of cash liabilities Ratio. This thing shows the maximum relation with the proportion of operating profit and cash liabilities. Here the profit of the producer and liquidity depends on how much profit or liquidity he chooses. According to the principle of accounts there is opposite relation between cash and operating profit. It means, if the Operating Ratio is high, its liquidity is low.

Here let us discuss, what kind of situation exists in **Table No.5.7.**

In the **Eastern Region** the yearly average of operating profit is Rs.0.39 crores whereas against it, the cash ratio is only 0.09 times.

If we discuss, the **Western region,** its yearly average of operating Ratio is Rs.68.49 crores. Against it, the cash ratio shows 0.30 times.

If we discuss, the **Northern Region,** its operating profit is Rs.79.18 crores, whereas against it, the proportion of liquidity is only 0.19 times.

If we take the **Southern Region;** the yearly Operating Profit average from March'96 to March'03 is seen as Rs.36.71crores; but its, cash ratio is only 0.34 times.

In **Rest of The Regions** the proportion of loss is Rs.–66.48 crores. It means both the companies of this region suffer average loss. Its cash and liability is only 0.07 times, which is very low.

In short, all the companies give importance to profitability but give a very better importance to liquidity. Each and every company tries to get more and more profit, which they choose at the expense of liquidity.

(VIII) Analysis of Operating Profit Ratio & Interval Measure Ratio :

Table 5.8 indicates the comparative analysis of Operating Profit Ratio & Interval Measure Ratio of selected cement companies under the study period :

TABLE NO 5.8 A COMPARATIVE ANALYSIS OF OPERATING PROFIT RATIO & INTERVAL MEASURE RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF OPERATING PROFIT RATIO (RS.CRORES)	AVERAGE OF INTERVAL MEASURE RATIO (RS.CRORES)
Eastern Region		
OCL India Limited	17.2675	12.70375
Damodhar Cement & Slag Ltd.	0.055	2.7375
Ambuja Cement Eastern Limited	-22.3975	0.90375
Birla Corporation Ltd.	6.67375	8.595
YEARLY AVERAGE	**0.3996875**	**6.235**
Western Region		
Saurashtra Cement Limited	-0.7725	21.0225
Gujarat Ambuja Cement Ltd	222.29375	30.3625
Gujarat Sidhee Cement Ltd.	-16.03375	4.095
YEARLY AVERAGE	**68.49583333**	**18.49333333**
Northern Region		
Shree Cement Limited	35.66375	13.84375
Associated Cement Cos. Ltd.	122.7025	12.9475
YEARLY AVERAGE	**79.183125**	**13.395625**
Southern Region		
Priyadarshini Cement Limited	21.30375	19.47
Shri Vishnu Cement Limited	8.2175	15.2925
Madras Cements Ltd.	106.33	28.40375
Chettinad Cement Corpn. Limited	33.47125	28.7375
Dalmia Cement (Bharat) Limited	42.57375	19.11375
Deccan Cements Limited	8.40125	21.8
YEARLY AVERAGE	**36.71625**	**22.13625**
Rest of Region		
Shree Digvijay Cement Limited	-15.65375	9.0275
Cement Corporation of India Limited	-117.31	0
YEARLY AVERAGE	**-66.481875**	**4.51375**

Table No.5.8 shows comparative study of the operating profit and interval measure in crores.

In the **Eastern Region**, the operating profit is Rs.0.39 crores, and interval measure is worth Rs.6.23 crores.

In the **Western Region** the operating profit ratio is Rs.68.49 crores, and interval measure is worth Rs.18.49 crores.

In the **Northern Region**, the operating profit is worth Rs.79.18 crores & interval measure is worth Rs.13.39 crores.

In the **Southern Region** the operating profit is worth Rs.36.71crores & interval measure is worth Rs.22.13 crores.

In the **Rest of the Region** it can be said that, the proportion of loss in this region is the highest i.e. it is Rs.-66.48 crores, against it, the interval measure is Rs.4.51 crores.

In short, discussing the operating profit & all the proportions of its liquidity with base, it can be said that, in each company the liquidity depends on the proportion of its profit, whose basic support is gross profit.

Depending upon operating profit it can be compared that, the company gives less importance to liquidity and more and more importance to profitability.

(IX) Analysis of Net Profit Ratio & Current Ratio :

Table 5.9 despites the comparative position of Net Profit Ratio & Current Ratio of selected cement companies under study :

TABLE NO 5.9 A COMPARATIVE ANALYSIS OF NET PROFIT RATIO & CURRENT RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF NET PROFIT RATIO (RS.CRORES)	AVERAGE OF CURRENT RATIO (IN TIMES)
Eastern Region		
OCL India Limited	9.29375	1.645
Damodhar Cement & Slag Ltd.	2.94125	0.51125
Ambuja Cement Eastern Limited	-13.49625	0.64125
Birla Corporation Ltd.	-12.915	1.21375
YEARLY AVERAGE	**-3.5440625**	**1.0028125**
Western Region		
Saurashtra Cement Limited	-15.84375	1.00125
Gujarat Ambuja Cement Ltd	181.66	1.51
Gujarat Sidhee Cement Ltd.	-7.11375	1.0625
YEARLY AVERAGE	**52.90083333**	**1.19125**
Northern Region		
Shree Cement Limited	16.24375	1.615
Associated Cement Cos. Ltd.	75.17125	0.87625
YEARLY AVERAGE	**45.7075**	**1.245625**
Southern Region		
Priyadarshini Cement Limited	6.93875	1.59875
Shri Vishnu Cement Limited	1.81625	1.4075
Madras Cements Ltd.	43.725	1.5475
Chettinad Cement Corpn. Limited	8.44	1.065
Dalmia Cement (Bharat) Limited	26.1125	2.0825
Deccan Cements Limited	5.53875	2.38
YEARLY AVERAGE	**15.42854167**	**1.680208333**
Rest of Region		
Shree Digvijay Cement Limited	-26.09125	0.955
Cement Corporation of India Limited	-165.745	0.26375
YEARLY AVERAGE	**-95.918125**	**0.609375**

While we discussing the Table No.5.9 it can be said that, in the ***Eastern Region***, subtracting other taxes, bonus etc., & thinking about net profit afterwards, the profitability which appears in operating profit & gross profit previously, that profitability appears in loss in net profit. The proportion of which is Rs.– 3.54 crores. Against it, its current Ratio according to times is 1.00.

If we take the **Western Region**, in all the three companies of this region the average profit is Rs.52.90 crores, against it, its current Ratio is 1.19 times.

In the **Northern Region,** the Net profit of this region is Rs.45.70 crores, whereas its current Ratio is 1.24 Times.

In the **Southern Region**, its Net profit is Rs.15.42 crores whereas its current Ratio is 1.68 times.

In the **Rest of the Regions**, previously loss was shown in the gross profit and operating profit. Subtracting various taxes and other expenses there is increase in loss in there companies than before. The proportion is Rs.– 95.91 corres. Against it, its current Ratio is 0.60 times.

If we take all these five regions, the Northern, the western and the Southern regions show profit whereas two regions show loss in reference to Net Profit.

(X) Analysis of Net Profit Ratio & Quick Ratio :

Table 5.10 clears the position regarding the Net Profit Ratio &
Quick Ratio in the selected units of cement industry :

TABLE NO 5.10 A COMPARATIVE ANALYSIS OF NET PROFIT RATIO & QUICK RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF NET PROFIT RATIO (Rs.CRORES)	AVERAGE OF QUICK RATIO (IN TIMES)
Eastern Region		
OCL India Limited	9.29375	0.62125
Damodhar Cement & Slag Ltd.	2.94125	0.00375
Ambuja Cement Eastern Limited	-13.49625	0.2325
Birla Corporation Ltd.	-12.915	0.41
YEARLY AVERAGE	**-3.5440625**	**0.316875**
Western Region		
Saurashtra Cement Limited	-15.84375	0.45
Gujarat Ambuja Cement Ltd	181.66	0.58
Gujarat Sidhee Cement Ltd.	-7.11375	0.375
YEARLY AVERAGE	**52.90083333**	**0.468333333**
Northern Region		
Shree Cement Limited	16.24375	0.63
Associated Cement Cos. Ltd.	75.17125	0.23375
YEARLY AVERAGE	**45.7075**	**0.431875**
Southern Region		
Priyadarshini Cement Limited	6.93875	0.53875
Shri Vishnu Cement Limited	1.81625	0.44875
Madras Cements Ltd.	43.725	0.48875
Chettinad Cement Corpn. Limited	8.44	0.23875
Dalmia Cement (Bharat) Limited	26.1125	0.56625
Deccan Cements Limited	5.53875	1.29375
YEARLY AVERAGE	**15.42854167**	**0.595833333**
Rest of Region		
Shree Digvijay Cement Limited	-26.09125	0.34125
Cement Corporation of India Limited	-165.745	0.06625
YEARLY AVERAGE	**-95.918125**	**0.20375**

Referring to Table No.5.10 it can be said that if we discuss about the Net Profit its yearly average, in the **_Eastern Region_**, was Rs.– 3.54 crores shows loss whereas its Quick Ratio is 0.31 times.

In the **_Western Region_**, yearly average of Net Profit, because of Ambuja Cement Ltd. is Rs.52.90 crores whereas its Quick Ratio is 0.48 times.

In the **_Northern Region_** its Net Profit is Rs.45.70 crores whereas its Quick Ratio is 0.43 times.

In the **_Southern Region_** its yearly average net profit is Rs.14.52 crores whereas its Quick Ratio is 0.59 times.

The Average loss of **_Rest of The Regions_** is Rs.– 95.91crores, and its Quick Ratio is 0.20 times.

(XI) Analysis of Net Profit Ratio & Cash Ratio :

Table 5.11 shows the comparative analysis of Net Profit Ratio & Cash Ratio in the selected unit of cement industry :

TABLE NO 5.11 A COMPARATIVE ANALYSIS OF NET PROFIT RATIO & CASH RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF NET PROFIT RATIO (Rs.CRORES)	AVERAGE OF CASH RATIO (IN TIMES)
Eastern Region		
OCL India Limited	9.29375	0.10625
Damodhar Cement & Slag Ltd.	2.94125	0.00375
Ambuja Cement Eastern Limited	-13.49625	0.05
Birla Corporation Ltd.	-12.915	0.2325
YEARLY AVERAGE	**-3.5440625**	**0.098125**
Western Region		
Saurashtra Cement Limited	-15.84375	0.25
Gujarat Ambuja Cement Ltd	181.66	0.5
Gujarat Sidhee Cement Ltd.	-7.11375	0.15375
YEARLY AVERAGE	**52.90083333**	**0.30125**
Northern Region		
Shree Cement Limited	16.24375	0.29
Associated Cement Cos. Ltd.	75.17125	0.0825
		0.191428571
YEARLY AVERAGE	**45.7075**	
Southern Region		
Priyadarshini Cement Limited	6.93875	0.19875
Shri Vishnu Cement Limited	1.81625	0.15125
Madras Cements Ltd.	43.725	0.31125
Chettinad Cement Corpn. Limited	8.44	0.10875
Dalmia Cement (Bharat) Limited	26.1125	0.365
Deccan Cements Limited	5.53875	0.91875
YEARLY AVERAGE	**15.42854167**	**0.342291667**
Rest of Region		
Shree Digvijay Cement Limited	-26.09125	0.1075
Cement Corporation of India Limited	-165.745	0.045
YEARLY AVERAGE	**-95.918125**	**0.07625**

In the Table No.5.11, there is a comparison between Net Profit and cash liabilities, so that reality about each of the companies can be seen, success of a company by knowing its Net Profit and through Net Profit only companies liability can be known. It means in order to get profitability Vis-à-vis liquidity the comparison between Net Profit Vis-à-vis

Cash and liabilities is essential.

If we discuss about the **Eastern Region,** the Net Profit average is Rs.–3.54 crores, against it, Cash and liabilities are merely 0.09 times. This proportion is all most nil.

In the **Western Region**, its Net Profit is Rs.52.90 crores whereas its Cash and liabilities are 0.30 times.

In the **Northern Region,** average Net Profit is Rs.15.42 crores whereas its cash and liabilities are 0.32 times.

In the **Southern Region** from March 1996 to March 2003 the yearly average of Net Profit is Rs.15.42 crores whereas its liquidity is 0.34 times.

If we take ***Rest of the Regions***, its loss is Rs.–95.91crores whereas its cash ratio is only 0.07 times.

By Discussing, the proportion of Net Profit and cash it can be said that liquidity depends on the profit of the company. The Region in which proportion of profit is more, that Region can keep more liquidity and the region in which the profit is less, that region selects liquidity in less proportion.

(XII) Analysis of Net Profit Ratio & Interval Measure Ratio :

Table 5.12 clears the position regarding the Net Profit Ratio & Interval Measure Ratio in the selected units of cement industry :

TABLE NO 5.12 A COMPARATIVE ANALYSIS OF NET PROFIT RATIO & INTERVAL MEASURE RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF NET PROFIT RATIO (RS.CRORES)	AVERAGE OF INTERVAL MEASURE RATIO (RS.CRORES)
Eastern Region		
OCL India Limited	9.29375	12.70375
Damodhar Cement & Slag Ltd.	2.94125	2.7375
Ambuja Cement Eastern Limited	-13.49625	0.90375
Birla Corporation Ltd.	-12.915	8.595
YEARLY AVERAGE	**-3.5440625**	**6.235**
Western Region		
Saurashtra Cement Limited	-15.84375	21.0225
Gujarat Ambuja Cement Ltd	181.66	30.3625
Gujarat Sidhee Cement Ltd.	-7.11375	4.095
YEARLY AVERAGE	**52.90083333**	**18.49333333**
Northern Region		
Shree Cement Limited	16.24375	13.84375
Associated Cement Cos. Ltd.	75.17125	12.9475
YEARLY AVERAGE	**45.7075**	**13.395625**
Southern Region		
Priyadarshini Cement Limited	6.93875	19.47
Shri Vishnu Cement Limited	1.81625	15.2925
Madras Cements Ltd.	43.725	28.40375
Chettinad Cement Corpn. Limited	8.44	28.7375
Dalmia Cement (Bharat) Limited	26.1125	19.11375
Deccan Cements Limited	5.53875	21.8
YEARLY AVERAGE	**15.42854167**	**22.13625**
Rest of Region		
Shree Digvijay Cement Limited	-26.09125	9.0275
Cement Corporation of India Limited	-165.745	0
YEARLY AVERAGE	**-95.918125**	**4.51375**

Table No.5.12 Shows Comparative Analysis of Net Profit and Average of Interval Measure between 1996 to 2003.

In the ***Eastern Region***, its yearly average of Net Profit is Rs.–3.54 crores, whereas its average Interval Measure is worth Rs.6.23 crores.

In the ***Western Region***, its Net profit in average is Rs.52.90 crores, against it, Internal Measure is Rs.18.49 crores.

In the ***Northern Region***, its yearly average shows the Net Profit worth Rs.45.70 crores, and its Interval Measure is Rs.13.39 crores.

In the ***Southern Region***, average profit is Rs.15.42 crores, and its Interval Measure is worth Rs.22.13 crores.

In the **Rest of the Regions,** In this region the loss of Rs.–95.91 crores is seen, and its Interval Measure is Rs.4.51 crores. In short, while talking about Table No.5.12 it can be said that, the increase in the proportion of profit is in the same proportion as increase in average Interval Measure. So here also there is a direct relation between Net Profit and Interval Measure.

(XIII) Analysis of Return On Net Capital Employed &
Current Ratio :

Table 5.13 despites the comparative position of Return on Net
Capital Employed & Current position of selected cement
companies under the study :

TABLE NO 5.13 A COMPARATIVE ANALYSIS OF RETURN ON NET CAPITAL EMPLOYED & CURRENT
RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF RETURN ON NET CAPITAL EMPLOYED (%)	AVERAGE OF CURRENT RATIO (IN TIMES)
Eastern Region		
OCL India Limited	14.085	1.645
Damodhar Cement & Slag Ltd.	110.13	0.51125
Ambuja Cement Eastern Limited	68.05375	0.64125
Birla Corporation Ltd.	6.64375	1.21375
YEARLY AVERAGE	**49.728125**	**1.0028125**
Western Region		
Saurashtra Cement Limited	5.835	1.00125
Gujarat Ambuja Cement Ltd	13.58375	1.51
Gujarat Sidhee Cement Ltd.	-9.1	1.0625
YEARLY AVERAGE	**3.439583333**	**1.19125**
Northern Region		
Shree Cement Limited	16.54	1.615
Associated Cement Cos. Ltd.	12.045	0.87625
YEARLY AVERAGE	**14.2925**	**1.245625**
Southern Region		
Priyadarshini Cement Limited	32.20875	1.59875
Shri Vishnu Cement Limited	16.07375	1.4075
Madras Cements Ltd.	16.6575	1.5475
Chettinad Cement Corpn. Limited	15.54625	1.065
Dalmia Cement (Bharat) Limited	16.1075	2.0825
Deccan Cements Limited	15.88875	2.38
YEARLY AVERAGE	**18.74708333**	**1.680208333**
Rest of Region		
Shree Digvijay Cement Limited	-2.0875	0.955
Cement Corporation of India Limited	-84.73375	0.26375
YEARLY AVERAGE	**-43.410625**	**0.609375**

Table no.5.13 represents in the **Eastern Region**, its return on net capital employed is 49.72% whereas against it, its current ratio in times is only 1.00.

In the **Western Region,** the yearly average of Return on Net Capital Employed is very low. In percentage, it is 3.43%. Its current Ratio is 1.19 times.

In the **Northern Region,** Return on net capital employed is 14.29%, against it, Current Ratio is 1.24 times.

In the **Southern Region,** Return on net capital employed is 18.74% and Current Ratio is 1.68 times.

In the **Rest of The Regions,** Return on net capital employed is – 43.41%, against it, Current Ratio is 0.60 times.

In short, the maximum return on net capital employed is in the Eastern Region, whereas negative result is seen in the Rest of the Regions.

(XIV)   Analysis of Return on Net Capital Employed & Quick Ratio :

Table 5.14 shows the comparative analysis of Return on Net Capital Employed & Quick Ratio in the selected units of cement industry.

TABLE NO 5.14 A COMPARATIVE ANALYSIS OF RETURN ON NET CAPITAL EMPLOYED & QUICK RATIO (1995-96 TO 2002-03)

COMPANY NAME	AVERAGE OF RETURN ON NET CAPITAL EMPLOYED (%)	AVERAGE OF QUICK RATIO (IN TIMES)
Eastern Region		
OCL India Limited	14.085	0.62125
Damodhar Cement & Slag Ltd.	110.13	0.00375
Ambuja Cement Eastern Limited	68.05375	0.2325
Birla Corporation Ltd.	6.64375	0.41
YEARLY AVERAGE	**49.728125**	**0.316875**
Western Region		
Saurashtra Cement Limited	5.835	0.45
Gujarat Ambuja Cement Ltd	13.58375	0.58
Gujarat Sidhee Cement Ltd.	-9.1	0.375
YEARLY AVERAGE	**3.439583333**	**0.468333333**
Northern Region		
Shree Cement Limited	16.54	0.63
Associated Cement Cos. Ltd.	12.045	0.23375
YEARLY AVERAGE	**14.2925**	**0.431875**
Southern Region		
Priyadarshini Cement Limited	32.20875	0.53875
Shri Vishnu Cement Limited	16.07375	0.44875
Madras Cements Ltd.	16.6575	0.48875
Chettinad Cement Corpn. Limited	15.54625	0.23875
Dalmia Cement (Bharat) Limited	16.1075	0.56625
Deccan Cements Limited	15.88875	1.29375
YEARLY AVERAGE	**18.74708333**	**0.595833333**
Rest of Region		
Shree Digvijay Cement Limited	-2.0875	0.34125
Cement Corporation of India Limited	-84.73375	0.06625
YEARLY AVERAGE	**-43.410625**	**0.20375**

Table 5.14 indicates that, In the **_Eastern Region_**, yearly average of Return on Net Capital Employed is 49.72%, against it, Quick Ratio is 0.31 times.

In the **_Western Region_**, against 3.43%, the Quick Ratio is 0.31 times.

In the **_Northern Region_**, the Return on net capital employed is 14.29%. Whereas, its Quick Ratio is 0.43 times.

In the **_Southern Region_**, Return on net capital employed is 16.74%. Against it, its Quick Ratio is 0.59 times.

In the **_Rest of the Region_**s, both the companies have been running in loss, so the average return on net capital employed is – 43.10%.

The return on net capital employed is more appropriate for evaluating the efficiency of internal management. Liquid ratio establishes a relationship between quick or liquid assets and current liabilities.

(XV) Analysis of Return on Net Capital Employed & Cash Ratio :

Table 5.15 clears the comparative position of the Return on Net Capital Employed & Cash Ratio of selected cement companies under the study period 1995-'96 to 2002-'03 :

TABLE NO 5.15 A COMPARATIVE ANALYSIS OF RETURN ON NET CAPITAL EMPLOYED & CASH RATIO (1995-96 TO 2002-03)

	AVERAGE OF RETURN ON NET CAPITAL EMPLOYED (%)	AVERAGE OF CASH RATIO (IN TIMES)
Eastern Region		
OCL India Limited	14.085	0.10625
Damodhar Cement & Slag Ltd.	110.13	0.00375
Ambuja Cement Eastern Limited	68.05375	0.05
Birla Corporation Ltd.	6.64375	0.2325
YEARLY AVERAGE	**49.728125**	**0.098125**
Western Region		
Saurashtra Cement Limited	5.835	0.25
Gujarat Ambuja Cement Ltd	13.58375	0.5
Gujarat Sidhee Cement Ltd.	-9.1	0.15375
YEARLY AVERAGE	**3.439583333**	**0.30125**
Northern Region		
Shree Cement Limited	16.54	0.29
Associated Cement Cos. Ltd.	12.045	0.0825
YEARLY AVERAGE	**14.2925**	**0.191428571**
Southern Region		
Priyadarshini Cement Limited	32.20875	0.19875
Shri Vishnu Cement Limited	16.07375	0.15125
Madras Cements Ltd.	16.6575	0.31125
Chettinad Cement Corpn. Limited	15.54625	0.10875
Dalmia Cement (Bharat) Limited	16.1075	0.365
Deccan Cements Limited	15.88875	0.91875
YEARLY AVERAGE	**18.74708333**	**0.342291667**
Rest of Region		
Shree Digvijay Cement Limited	-2.0875	0.1075
Cement Corporation of India Limited	-84.73375	0.045
YEARLY AVERAGE	**-43.410625**	**0.07625**

Table No.5.15 shows Return on net capital employed (%) and cash ratio in times. According to it, companies of the Eastern Region get Return on Net Capital employed in yearly average worth 49.72% whereas cash ratio is 0.09 times.

In the **Western Region**, its Return on net capital employed is 3.43% whereas cash ratio is 0.30 times.

In the **Northern Region,** its Return on net capital employed is 14.29% and cash ratio is 0.19 times.

In the **Southern Region**, its Return on net capital employed is 18.7% whereas its cash ratio is 0.34 times.

In the **Rest of the Region,** the Return on net capital employed in yearly average is – 43.41% whereas its cash ratio is 0.07 times.

(XVI)   Analysis of Return on Net Capital Employed
& Interval Measure Ratio :

Table 5.16 indicates the comparative analysis of Return on Net Capital Employed & Interval Measure ratio of selected cement units under the study :

TABLE NO 5.16 A COMPARATIVE ANALYSIS OF RETURN ON NET CAPITAL EMPLOYED & INTERVAL MEASURE RESIO (1995-96 TO 2002-03)

	AVERAGE OF RETURN ON NET CAPITAL EMPLOYED (%)	AVERAGE OF INTERVAL MEASURE (RS.CRORES)
Eastern Region		
OCL India Limited	14.085	12.70375
Damodhar Cement & Slag Ltd.	110.13	2.7375
Ambuja Cement Eastern Limited	68.05375	0.90375
Birla Corporation Ltd.	6.64375	8.595
YEARLY AVERAGE	**49.728125**	**6.235**
Western Region		
Saurashtra Cement Limited	5.835	21.0225
Gujarat Ambuja Cement Ltd	13.58375	30.3625
Gujarat Sidhee Cement Ltd.	-9.1	4.095
YEARLY AVERAGE	**3.439583333**	**18.49333333**
Northern Region		
Shree Cement Limited	16.54	13.84375
Associated Cement Cos. Ltd.	12.045	12.9475
YEARLY AVERAGE	**14.2925**	**13.395625**
Southern Region		
Priyadarshini Cement Limited	32.20875	19.47
Shri Vishnu Cement Limited	16.07375	15.2925
Madras Cements Ltd.	16.6575	28.40375
Chettinad Cement Corpn. Limited	15.54625	28.7375
Dalmia Cement (Bharat) Limited	16.1075	19.11375
Deccan Cements Limited	15.88875	21.8
YEARLY AVERAGE	**18.74708333**	**22.13625**
Rest of Region		
Shree Digvijay Cement Limited	-2.0875	9.0275
Cement Corporation of India Limited	-84.73375	0
YEARLY AVERAGE	**-43.410625**	**4.51375**

Table No.5.16 indicates that in the ***Eastern Region***, Its Return on Net Capital Employed is 49.72% and its Interval Measure is Rs.6.23 crores.

In the ***Western Region*** Return on Net Capital Employed is 3.49% & Interval Measure is Rs.18.49 crores.

In the ***Northern Region***, Return on Net Capital Employed is 14.29% & Interval Measure is Rs.13.39 crores.

In the ***Southern Region***, the Return on Net Capital employed is 18.74% & Interval Measure is Rs.22.13 crores.

In the ***Rest of the Regions***, Return on Net Capital employed is – 43.41% and the Interval Measure is Rs.4.51 crores.

SUMMARY

A comparative Analysis of ROI Ratio and Current Ratio whereas its Current Ratio is reduced to 0.60% so while discussing the ROI and loss, it can be said that its time current ratio increases.

A comparative Analysis of ROI Ratio and Quick Ratio, while discussing the ROI and Quick Ratio, it can be said that in the Eastern Region, the yearly average is seen as Rs.37.07crores, whereas Quick Ratio (%) is 0.31 times.

In the Western Region, as against Rs.147.23 crores the Quick Ratio is 0.46 times.

In the Northern Region, as against Rs.208.82 crores, the Quick Ratio is 0.46 tiems.

In the Southern Region as against the ROI Rs.59.36 crores, the Quick Ratio is 0.59 times.

In The Rest of the Regions, the Quick Ratio is only 0.20 times.

A Comparative Analysis of ROI and Cash Ratio, its loss seen in crores is Rs. -9.78 crores. As against it, its cash liability is seen as Rs.0.7crores. In short, while discussing each & every

region it can be said that if the companies have more profit, their cash liability is also more. Here one does not see profitability vis-à-vis a liquidity but one can see profitability equal to liquidity, means, if the profit is more the liquidity is also more.

A Comparative Analysis of ROI & Interval Measure Ratio, while discussing all the four proportions together we can say that ROI depends on cash and it depends on profit. If the proportion of profit is more, the proportion of liquidity in this relation is also more.

A Comparative Analysis of average operating profit with its current Ratio, the operating profit of Eastern Region is Rs.0.39 crores, and the average of Current Ratio is 1.00 times.

In the Western Region, its yearly average of operating profit is Rs.68.49 crores, and its Current Ratio is 1.00 times.

In the Northern Region, the operating profit is in crores, yearly average is Rs.36.71 crores, and Current Ratio is 1.68 times, which is maximum.

Rest of Region shows loss, worth Rs.-66.48 crores and its current Ratio is 0.60 times, which is minimum. This can be proved while discussing cash with profit.

A comparative analysis of average operating profit and Quick Ratio, seeing it can be said that if the operating profit is high the Quick Ratio is also high and the operating profit is dependent on gross profit. It means, if the gross profit is high the operating profit is also high. While discussing the profitability, vis-à-vis, it can be said that there is direct relation between operating profit and Quick Ratio. It means, if the operating profit is high, the Quick Ratio is also high and if the operating profit is low the Quick Ratio is proportionately low. That is why, it is necessary that, we should take the base of number of the companies in both these sections.

A Comparative Analysis of average operating profit and average of cash ratio, the companies of the four regions give importance to profitability but give a very better importance to liquidity, each and every company tries to get more and more profit, which they choose at the expense of liquidity.

A comparative Analysis of average operating profit & average for Interval Measure depending on its operating profit can be compared that the company gives less importance to liquidity and more and more importance to profitability.

A Comparative Analysis of Net profit ratio and average of current Ratio of all these five regions, Northern, western and Southern regions show profit whereas two regions show loss in reference to Net Profit.

A Comparative Analysis of Net Profit average and average of Quick Ratio it can be said that if we discuss about Net Profit its yearly average, in the Eastern Region Rs.– 3.54 crores shows loss whereas its Quick Ratio is 0.31 times.

In the Western Region, yearly average of its Net Profit because of Ambuja Cement Ltd, is Rs. 52.90 crores whereas its Quick Ratio is 0.48 times.

In the Northern Region its Net Profit is Rs. 45.70 crores whereas its Quick Ratio is 0.43 times.

In the Southern Region its yearly average of profit is Rs. 14.52 crores where as its Quick Ratio is 0.59 times.

The Average loss of Rest of Region is Rs. – 95.91 crores, and its Quick Ratio is 0.20 times.

A Comparative Analysis of Net Profit average Rs.crores and average of Cash Ratio, by discussing the proportion of Net

Profit and Cash Ratio, it can be said that, liquidity depends on the profit of the company. The Region in which proportion of profit is more, that Region can keep more liquidity and the region in which the profit is less, that region selects liquidity in less proportion.

Comparative Analysis of Net Profit and Average Interval Measure, it can be said that the increase in the proportion of profit is in the same proportion as increase in average internal profit. So here, also there is a direct relation between Net Profit and Interval Measure.

Return on Net Capital Employed (%) and Cash Ratio, of the Eastern Region gets Return on Net Capital Employed in yearly average worth 49.72% whereas Cash Ratio is 0.09 times.

The return on Net Capital Employed and average of Interval Measure in the Eastern Region, Its Return on Net Capital Employed is 49.72% and its Interval Measure is Rs. 6.23crores.

In the Western Region Return on Net Capital Employed is 3.49% & Interval Measure is Rs. 18.49crores.

In the Northern Region, Return on Net Capital Employed is 14.29% & Interval Measure is Rs.13.39crores.

In the Southern Region, the Return on Net Capital Employed is 18.74% & Interval Measure is Rs. 22.13crores.

In the Rest of the Regions, Return on net capital employed is – 43.41% and the Interval Measure is Rs. 4.51crores.

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CHAPTER 6

SUMMARY, FINDINGS AND SUGGESTIONS

Chapter 1 : Profile Of The Cement Industry In India *:*

Telecommunication, petroleum, coal, fertilizer, iron, steel and cement etc. are the key infrastructure sectors of India. Cement industry is also plays a significant role, in the rapid growth and development of a country because cement is a fundamental requirement of all construction activities. Cement is used in housing, dams, bridges, industrial construction, roads etc, so cement is basic material which is used in all types of construction.

In the growth of Indian manufacturing industries, egalitarian considerations or nation, building objectives have had limited attraction as objectives for industrialization. It was mainly the profit-centre that have determine their proliferation and continues to do so even after intendance, expect for what the public sector has been doing but not with much consideration for productivity or profitability.

These observations apply not only in jute and textiles or iron and steel, but also in cement, automobiles, sugar and even perhaps the paper industries, particularly in the respect of the private sector leviathan.

The impact of economic factors like the supply of raw materials, cost of labour, cost of infrastructure and economic of location have all determine the growth and development of Indian industries but one major factor has always been the profit incentive.

In old days, various types of building materials were used for construction of public historical and religious buildings sand, stone and in the special case; marbles were used for this purpose. The house of ordinary citizens were usually made of mud and thin bricks. In few cases lime and pazzolona were used for getting beautiful finishing for the interior surface. There were very good builders and mesons who have created temples, buildings and bathing ghats thousand of years ago, still they are famous for their work and shape.

However, slowly and gradually cement and new types of material developed in Europe. In 1824 an English man Joseph Aspadin, patented on artificial made by calcination of an argillaceous limestone known as Portland cement. Because concrete made from it resembled a famous building stone obtained from the ISLE of Portland near England. This was the beginning of Portland cement industry as we know today.

Cement is a powdered material with water forms a paste that hardens slowly. It is made by sintering a mixture of various

raw materials. The main raw material composed in the mixture is calcium carbonates as limestone and other alumina, silicates as clay or shale. During the sintering process chemical reaction takes place, produces nodules, called clinkers which consists of calcium silicates and aluminates when the clinker is pulverized with a small amount of gypsum as a reader the resulting powder is called Portland cement.

Cement is basic material for all types of construction works and it is widely used in construction from smallest building to largest structures like dams, irrigation works, bridge, industrial complex etc. In short, it can be said that cement as well as steel are sinequa-non for that development of construction activities in the country.

Cement industry is one of the key industries in India. It plays a dominant role in the national economy. Form the point of view of economic development of the country, Cement industry ranks second very next to the Iron and steel industry. Cement is indispensable in building and construction works. The production and consumption of cement to a large extent, indicates a country's progress. In a developing country like India the need for a well established cement industry is of paramount importance.

Chapter 2 : Research Methodology :

The title of the problem of the subject of this study is "A *Comparative Analysis of profitability vis-a-vis liquidity performance in cement industry of India.*"

The cement industry plays a vital role in the growth and development of a country as it provides required infra-structure for economic development of the country. In our country, a large population lives in villages. Roads, buildings and other infrastructure provide means for the enlistment of the economic level of a vast rural population. Unfortunately, the past setup of leading cement units was unable to meet the rising demand of cement in comparison with their counter parts in the other countries. Therefore, it is assumed that in the factor which are obstruction the profitability vis – a - vis liquidity position of cement units could manage properly then units would come out with a better working result.

This study based on the secondary data derived from annual published reports of selected cement companies or computer data. Various researchers have been conducted under Accountancy, Commerce, Management, Economics etc. faculty of Saurashtra University. However, no research has been conducted,

"A *Comparative Analysis of profitability vis-a-vis liquidity performance in cement industry* of *India."* Thus this study would be an original contribution to the problem of the study in unique every respect.

PROBLEM IDENTIFICATION :-

Cement is one of the most important industries in Indian economy. It has played a vital role in the development of country. First cement factory was established in 1904 at Porbandar. (The birthplace of Mahatma Gandhi, in Gujarat) However, during the last four decades the industry has achieved substantial progress. India is the forth largest country in the world at present. Financial soundness of business enterprise largely depending upon the profitability can be achieved after control over the cost of production like cost of raw material consumed, excise duty, power and fuel cost, interes burdon, administrative expense, selling and distribution expense etc. that have been increased heavily on the other hand selling price of the cement is decreased in this circumstance to keep the progress of business enterprises. It is very essential for management. In present environment to achieve the profit trends to introduce various cost control techniques over expenditures and maximum output.

Another problem of industry is shortage of electricity supply and heavy electric charges. It is also making effect on cost of

production and financial position. The objectives of final analyst are as (1) external and (2) internal. An external analyst has to depend upon the published information of financial Statements, which are not on lightening themselves. While internal analysts know every thing regarding, the information provided in financial statements.

Study of financial statement analysis is always made objectively. Generally, external analysts use information as per their requirements. Financier would like to know profitability. Management would be interested in the operational efficiency and profitability. Position of the management profitability vis-à-vis liquidity also balances in the portfolio. But if the management likes profitability, Liquidity is less and the Liquidity is like the profitability is less. The various stock holders of business enterprises like management, investors, bankers, financial institutions, creditors, employees, government, economist, prospective investors etc, look at sound financial position of the business enterprise.

THE RESEARCH METHODOLOGY :-

(I) THE PROBLEM:-

The title of the study is *A comparative analysis of profitability vis-à-vis liquidity performance in cement industry of India.*

(II) OBJECTIVES OF THE STUDY:-

(1) To analysis the profitability.
(2) To examine the liquidity position and analyses of liquidity.
(3) To analysis profitability vis-à-vis liquidity.
(4) To make suggestions of profitability and liquidity for financial soundness.

(III) HYPOTHESIS:-

(1) There is no any significant difference between Profitability Trends of Cement Industry of India.
(2) There is no any significance difference in Liquidity Trends of Cement Industry of India.

(IV) DATA COLLECTION:-

The main source of data used for the study was secondary, drawn from the annual profit & loss account and balance sheet figures as found in annual reports of the selected units. The other data source is ***ProweSS database & capitalline*** software, from CMIE, Mumbai. And opinions expressed in commercial journals, magazines, news papers, Accounting literature, various journals on cement viz. cement industry annual Review, world cement, cement abstracts etc. have been also used in this study.

(V) PERIOD OF THE STUDY:-

The profitability and liquidity study is made for a period of 8 years from 1995-96 to 2002-03.

(VI) UNIVERSE OF THE STUDY:-

The universe of the study consists of all the limited companies working in India and listed in stock exchange of India.

(VII) SAMPLING DESIGN:-

There are about 125 such companies which are working in India data available of 79 companies. Researcher has selected 17 Companies as the sample for this study. The sample has been selected considering following factors.

* Data for the entire period of the study from 1995-96- 2002-03.

* For the purpose of analyses all the selected companies have been classified in to five regions – Eastern region, Western region, Northern region, Southern region, and Rest of region.

* Allocation of the state in regions has been made according to CMA criteria.

* Companies have been classified into various regions according to the location of plant in the state.

* Those companies plant have been located in the more then one region they have put in   rest of region.

(VIII) NAMES OF THE COMPANIES:-

(A) Eastern Region

 (i) OCL India Limited

(ii) Damodhar Cement & Slag Limited

(iii) Ambuja Cement Eastern Limited

(iv) Birla Corporation Ltd.

(B) Western Region

(i)   Saurashtra Cement Limited

(ii) Gujarat Ambuja Cement Ltd

(iii) Gujarat Sidhee Cement Ltd.

(C) Northern Region

(i) Shree Cement Limited

(ii) Associated Cement Cos. Ltd.

(D) Southern Region

(i) Priyadarshini Cement Limited

(ii) Shri Vishnu Cement Limited

(iii) Madras Cements Ltd.

(iv) Chettinad Cement Corp. Limited

(v) Dalmia Cement (Bharat) Limited

(vi) Deccan Cements Limited

(E) Rest of The Regions

(i) Shree Digvijay Cement Limited

(ii) Cement Corporation of India Limited

(IX) TOOLS AND TECHNIQUES FOR ANALYSIS OF FINANCIAL STATEMENTS:-

1   Ratio Analysis

2   Common-Size statements

3   Trend Analysis

4   Comparative statements Analysis

5   ANOVA Test

6   Analysis of Time Series

7   Diagrammatic and Graphic Analysis

LIMITATIONS OF THE STUDY:-

(1) This study based on secondary data taken from published annual reports and accounts of selected companies and as such its finding depends entirely on such data.

(2) There are different methods to measure the profitability and liquidity of an industry in this connection views of experts differ from one- another.

CHAPTER PLAN:-

CHAPTER-1

PROFILE OF THE CEMENT INDUSTRY IN INDIA

CHAPTER-2

RESEARCH METHODOLOGY

CHAPTER-3

ANALYSIS OF PROFITABILITY

CHAPTER-4

ANALYSIS OF LIQUIDITY

CHAPTER-5

PROFITABILITY VIS-À-VIS LIQUIDITY

CHAPTER-6

SUMMARY, FINDINGS AND SUGGESTIONS

Chapter 3 : Analysis of Profitability

Profit is the legitimate object of our society and prima facie object of every business. It is barometer of the success of business. Profit is the pivot around which revolve the various activities of business. In the opinion of R.E.V. Duck and F.R.J. Jervis, " Perhaps the most important reason for keeping accounts as far as management of the business is concerned that the information contained in them provides the means of measuring the progress of a business, of testing it's pulse and at indicating when and where remedial action, if necessary, shall be taken".

The survival of any business depends upon it's earning capacity. Thus, if an enterprise fails to make profit, capital invested is eroded and if this situation prolongs, the enterprise ultimately ceases to exist. In fact, profit is the soul of business without which it is lifeless. Indeed, the efficiency of a business concern is measured by the amount of profits earned. The larger the profits the more efficient and profitable the business is demand to be. According to R. R. Gilchrist, the profit is the ultimate measure of effectiveness, profitable company is likely to offer not only security of employment but also promotion prospects, job opportunities and the intense

personnel motivation that comes from being associated with success.

Profitability means the profit earning ability of the enterprise, and the capacity of management to generate surplus in the process of business operations.   It is overall measure of efficiency.

Profitability is distinguished from "profits". Profits refer to the absolute quantum of profits. Where as the profitability refers to the ability to earn profits.

PRODUCTIVITY AND PROFITABILITY:-

The performance of business firm can be evaluated or measured from a number of perspectives, and there are various quantitative as well as qualitative criteria that can be employed for this purpose. Productivity and profitability are the two separate device for the measurement of over all efficiency of a business firm.

Productivity is defined as the ratio of outputs to inputs, outputs in the form of products or services and input are the resources which are put in to convert into outputs. It is the quality or state of being productive. It is a concept that guides the management of production system and measures its

success. It is the quality that indicates how efficiency the material, the labour, the capital and the energy can be utilized Measurement and analysis of productivity can help to identify area for corrective actions towards planning of business firm.

 IMPORTANCE OF PROFITABILITY:-

Profit is a very good indicator of business performance, but the real standard of performance of a business firm cannot be judged by the absolute size of its periodic profit. For that profitability is a good device, which represent the earning of a business firm. Modern management is engaged in the task of maximizing the profit and wealth. The efficiency of management is measured by the profitability of the business; the greater is the profitability of the business, the more will be efficiency.

"An analysis of the profitability reveals as to haw the position of profit stands as a result of total transactions made during the year. It need not be stressed that profitability is analysed through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share holders of business firm.   The management of business firm has to take some crucial managerial decision like further expansion, raising of

additional finance and problem of bonus and dividend payment etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management cans evaluate the operational efficiency of the business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share holders are equally interested in the profitability of the company. The share holders of a business firm cannot be judged by absolute size of its periodic profit. For that profitability is a good device which represent the earning capacity of a business firm. Modern management is engaged in the task of maximizing the profits and wealth. The efficiency of management is measured by profitability of the business; the greater is the profitability reveals as to how position of profit stands as a result of total transaction mode during the year. It need not be stressed that profitability is analyzed through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share-holders of business firm. The management of a business firm has to take same crucial managerial decision like further expansion, raising of a additional finance and problem of bonus and dividend payments etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management can evaluate the operational efficiency of the

business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share-holders are equally interested in the profitability of the company. The share-holders can take the decision weather to hold their equity share in the company or not, on the basis of profitability. Thus the management, creditors and owners of the company are equally interested in the profitability of the company.

PROFITABILITY ANALYSIS OF CEMENT INDUSTRY:

The profitability of cement industry in India has been analysed from the point of view of financial management and shareholders. Profitability can be measured in terms of different components of profit and loss account and balance sheet.

A financial manager is very much interested to locate and pin-paint the causes which are responsible for low or high profitability. The Financial Manager should continuously evaluate the efficiency of its company in terms of profit. In analysing the profitability of cement in India from the point of view of financial management, the following ratios are considered.

(I) GROSS PROFIT RATIO :-

This ratio expresses the relationship of gross profit to net sales, in term of percentage. The determinates of this ratio are the gross profit and sales, which means net sales obtained after deducting the value of goods returned by the customers from total sales. This ratio is of vital importance for gausing raging business results. A low gross profit ratio will suggest decline in business, which may be to insufficient sales, higher cost of production with the exiting or reduced selling price or the all-round inefficient management. The financial management must be able to detect the causes of a falling gross profit ratio and initiate action to improve the situation.

Gross Profit Ratio (in Percentages) of Cement Industry under the study -1995-96 to 2002-03 a look at the gross profit ratio of the companies located in the Eastern Region indicates that the limited average of the OCL Company has been enjoying the profit of 13.4%. Damodhar Cement and Stag limited has the average 0.7% profit ; whereas Ambuja Cement Eastern Limited enjoys the average 2.23% profit and Birla Corporation Ltd., has in hand the average profit of 5.60%

Looking in accordance with the year, the average profit of the Eastern region in March'96 is 2.34, in March'97 4.2%, in 98 it is 2.57, in '99 0.77%, in March'00-5.19%, in March'01-

3.55%, in March'02-it is 6.71 and in March-03 it is 9.9 and the profit of the Eastern company according to years is worth 4.4%

In the western region Saurashtra Cement Ltd., enjoys the profit as high as 11.40%. Gujarat Ambuja Cement Limited enjoys the maximum i.e. average 32.4% and the loss of the Gujarat Siddhi Cement Ltd., is 0.94%. If we take up to according to years Companies according to years maintain the following average profit.

March 1996 : 25.45%, March 1997 : 23.93%, March 1998 : 17.17%, March 1999 : 10.88%, March 2000 : 6.96% , March 2001 : 6.%, March 2002 : 12.95% and March 2003 : 11.78%

Taken according to years the average profit of all these companies goes to 14.29%

Now let us study the gross profit ratio of the companies located in the northern region-

1) Shree Cement Limited from March'96 to March'03 enjoys average 19.32% worth of profit.

2) Associated Cement Limited has the average profit   worth 11.60%

If we take in to account the profit of both the companies according to years : In March 1996 to March 2003

it is : 17.38%, 19.81%, 15.56%, 13.9%, 12.65%, 15.52%, 16.89%, 14.42% respectively.

The average profit of all the years having been taken into consideration, each year companies receive 15.76% profit.

If we study the gross profit ratio of the Southern region-
-Priyadarshini Cement Ltd., from March'96 to March'03 enjoys the average profit worth 6.3.
-Shri Vishnu Cement Ltd., during this very year has the profit worth 10.57%.
-Madras Cement Ltd., enjoys the average profit worth 29.06%
-Dalmia Cement Ltd., enjoys the average profit worth 22.29%
-Deccan Cement Ltd., enjoys the average profit worth 21.05%

If we take up to discuss the profit of the Southern Region according to years these companies have average profit - In March 1996 to March 2003 It is : 25.96%, 25.38%, 23.95%, 20.88%, 19.04%, 20.83%, 18.74%, 11.62% respectively. Whereas according to this year, average profit is 20.80%.

If we study the rest of the regions, from March'1996 to March'2003 Shri Digvijay Cement Ltd., has the average 2.38% profit and cement corporation of India Ltd., has loss of - 24.6%.

If we take up to discuss the average according to years in this connection, In March 1996 to March 2003 it is : 2.35%,0.08%, 3.47%, 0.95%, 10.81%, 22.04%, 51.2% respectively. Average according to years is found worth 11.96%.

(II) OPERATING PROFIT RATIO:-

This ratio indicates the relationship between operation profit and net sales in the form of percentage. The amount is shown in Rs. crores. In which, OCL India Ltd., of Eastern region has during 1996-2003 earned the average profit worth Rs. 17.26crores.

In the western region companies, Saurashtra Cement Ltd., during March'96 to March'03 has incurred the loss worth Rs. 0.77crores, Gujarat Ambuja Cement Ltd., has earned operating profit worth Rs. 222.29crores, and Gujarat Siddhi Cement Ltd., has incurred the loss worth Rs. 16.03crores. Calculating the average of the years, Northern region has obtained operating profit worth Rs. 19.18crores.

In the Southern region-Priyadarshini Cement Ltd., has obtained during March'96 to March'03 the operating profit worth Rs. 21.30crores, Shri Vishnu Cement Ltd., has earned the Rs. 8.21crores, Madras Cement Ltd., has earned the

operating profit worth Rs. 106.33crores. Chettinad Cement Corporation Ltd., has obtained operating profit worth Rs. 33.47crores, Dalmia Cement (Bharat) Ltd., Rs. 42.57crores.Deccan Cement Ltd., has earned profit worth Rs. 8.40crores. Taking into account the discussion of the Rest of the region, it can be said that Shri Digvijay Cement Ltd., has earned the average operating profit worth Rs. 15.63crores. i.e., loss from March 1996 to March 2003.Cement Corporation of India Ltd., also suffers the loss worth Rs. 117.31crores.

(III) RETURN ON INVESTMENT RATIO (PBDIT) :-

In PBDIT, the Eastern Region in the average of profit is shown Rs.41.36 crores, is obtained between March96 & March 2003. Where as the PBDIT of Damodhar Cement and Slag Ltd. is Rs. 8.41crores, and the profit shown of Ambuja Cement Eastern Ltd. is Rs. 30.44crores. The PBDIT of Birla Corporation Ltd. is shown as Rs. 68.9crores.

If we take up the discussion of the Western Region, the average profit of Saurashtra Cement Ltd., from March 1996 to March 2003 is Rs. 12.70crores. The profit of Gujarat Ambuja Cement Ltd., is Rs. 396.08crores, and the PBDIT of Gujarat Siddhi Cement Ltd. is found Rs. 22.92crores.

Now let us take up the Northern Region, Shree Cement Ltd., achieves average PBDIT worth Rs. 72.02crores. Associated cement Ltd., obtains PBDIT worth Rs. 345.63crores.

In Southern Region, Priyadarshini Cement Ltd. earned the average PBDIT worth Rs. 32.95crores between March 93 and March 2003. Shri Vishnu Cement Ltd., earns PBDIT worth Rs.15.37 crores, Madras Cement Ltd., earned PBDIT worth Rs.155.74 crores Chettinad Cement Corp. Ltd., earned worth Rs. 61.40crores, Dalmia Cement Ltd., earned average profit worth Rs. 77.09crores and Deccan Cement Ltd., obtained the average profit worth Rs. 12.8crores.

Rest of the Regions, Shree Digvijay Cement Ltd., from March 1996 to March 2003 obtained the average PBDIT worth Rs. 2.82crores Cement Corp. Of India Ltd., incured the loss worth Rs. 22.38crores.

(IV) NET PROFIT RATIO :-

Among the cement companies of India, the net profit of OCL India Ltd., of Eastern Region from March 96 to March 03 is shown as Rs. 29crores. The profit of Damodhar Cement & Sag Ltd., from March 93 to March 2003 is 2.94crores. The Ambuja Cement Eastern Ltd., from March 93 to March 03 there is no

profit but loss which is Rs. –13.49crores & Birla Corporation Ltd., also suffers the net loss of Rs. 12.91crores.

In the Western Region, the Saurashtra Cement Ltd., from March 93 to March 2003 shows clear loss of Rs.-15.84crores. Gujarat Ambuja Cement Ltd shows the profit of Rs. 181.66crores. Gujarat Siddhi Cement Ltd shows clear loss of Rs. – 7.11 crores.

In the Northern Region- Shree Cement Ltd. , earned the profit of Rs. 16.24crores. Associated Cement Co. Ltd. , earned the average profit of Rs. 75.17crores.

In the southern region Priyadarshini Cement Ltd., from March 96 to March 2003 earned the average net profit worth Rs. 6.93crores. Shri Vishnu Cement Ltd., earned net profit worth Rs. 1.81crores. Madras Cement Ltd., obtained the average profit worth Rs. 43.72crores. Chettinad Cement Corporation Ltd., has got the net profit worth Rs. 8.44crores.Dalmia Cement (Bharat) Ltd. has got the profit worth Rs. 26.11crores. Deccan Cement Ltd., has got the average profit worth Rs. 5.53crores.

As we take up the companies of the Rest of the Region Shree Digvijay Cement Company Ltd., from March 1996 to March 2003 shows the net loss worth Rs.-16.09crores. Cement

Corporation Of India Ltd., from March'96 to March 2003 shows the loss of Rs. –165.74crores.

(V) **RETURN ON NET CAPITAL EMLOYED RATIO :-**

In the Eastern Region From March'96 to March 2003 the average Return on OCL India Ltd., is 14.08% on capital employed. Damodhar Cement & Slag Ltd., has obtained Return On Net Capital Employed(R.O.N.C.E) average 110.13 % Ambuja Cement Eastern Ltd., obtained the average of 68.05%.Birla Corporation Ltd., obtained the 6.64% .

In the Western Region, Saurashtra Cement Ltd., has obtained the Return On Net Capital Employed 5.83%. Gujarat Siddhi Cement Limited has obtained the Return On Net Capital Employed 13.53%, Gujarat Siddhi Cement Ltd., has obtained R.O.N.C.E. -90.1%.

In the Northern Region, Shri Cement Ltd., has obtained average 16.54% .R.O.N.C.E. of Associated Cement Ltd., is 12.04%.

In the Southern Region, R.O.N.C.E. of Priyadarshini Cement Ltd. , is 32.10%.R.O.N.C.E. of Shri Vishnu Cement Ltd., is 16.07%. R.O.N.C.E. of Madras Cement Ltd., is 16.65%. R.O.N.C.E. of Chettinad Cement Ltd., is 15.52%. R.O.N.C.E.

of Dalmia Cement Ltd., is 16.10% and R.O.N.C.E. of Deccan Cement Ltd., is 15.88%.

The average of the year is 18.74% in Rest of the Regions. The R.O.N.C.E. of Shree Digvijay Cement Ltd. from March 96 to March 03 -2.08%. The R.O.N.C.E. of Cement Corporation of India Ltd. from March 96 to march 03 -84.73%.

(VI) **RETURN ON NET WORTH RATIO:-**

Average Return On Net Worth in the Eastern Region, OCL India Ltd. shows Return On Net worth (R.O.N) as 7.075%. Damodhar Cement Slag Ltd. shows R.O.N. worth. as 13.6%.Ambuja Cement Eastern Ltd. shows R.O.N. worth as – 88.38%. Birla Corporation Ltd. shows R.O.N. worth. as – 11.69%.

If we take the R.O.N. worth of the companies of the Western Regions, the R.O.N. worth is as - Saurashtra Cement Ltd. average R.O.N. worth from March 96 to March 03 is – 17.10%.Gujarat Ambuja Cement Ltd. average R.O.N. worth. from March 96 to March 03 is 14.37%. Gujarat Siddhi Cement Ltd. average R.O.N. worth from March 96 to March 03 is 68.83%.

In the Northern Region, Shree Cement Ltd. from March 96 to March 03 has obtained R.O.N. worth 11.66%. Associated Cement Co. Ltd. from March 96 to March 03 has obtained R.O.N. worth 5.91%.

In Southern Region, Priyadarshini Cement Ltd. has from March 96 to March 03 gained the R.O.N. worth 48.30% .Vishnu Cement Ltd. from March 96 to March 03 shows R.O.N. worth 1053.24%. Madras Cement Ltd. shows R.O.N. worth 17.52%. Chettinad Cement Corp. Ltd., shows R.O.N. worth 10.43%. Dalmia Cement Ltd., shows 12.82%. Deccan Cement Ltd., shows R.O.N. worth 13.46%.

In Rest of the Region, The R.O.N. worth of the companies is as Shree Digvijay Cement Ltd., from Mar.'96 to March'03 shows the average return on net worth as 13.28%. Cement Corporation Of India Ltd. gets the R.O.N. worth is 31.2%.

Chapter 4 : Analysis Of Liquidity :

By the term 'liquidity' is meant the debt-repaying capacity of an undertaking. It refers to the firm's ability to meet the claims of suppliers of goods, services and capital. According to Archer and D'Ambrosio, liquidity means cash and cash availability, and it is from current operations and previous accumulations that cash is available, to take care of the claims of both the short-term suppliers of capital and the long-term ones. It has two dimensions; the short-term and the long-term liquidity.

MEASUREMENT OF LIQUIDITY

Liquidity of an enterprise can be studied in two ways, namely, (i) Technical liquidity, and (ii) Operational liquidity. The difference between these two methods of liquidity measurement depends upon whether one assumes the 'liquidation concept' of business as in case of the technical liquidity or the 'going concern concept' of business as in the case of the operational liquidity.

(A) TECHNICAL LIQUIDITY

Technical liquidity is normally evaluated on the basis of the following ratios in a business enterprise.

(1) CURRENT RATIO

Current ratio expresses the precise relation between current assets and current liabilities. It is calculated by dividing current assets with current liabilities.

Current Ratio=Current assets/Current liabilities.

It indicates the availability of current assets in rupees for every one rupee of current liabilities. A high ratio means that the firm has more investment in current assets. While a low ratio indicates that the firm in question is unable to retire its current liabilities. In fact, a satisfactory current ratio for any given firm is difficult to judge. For most manufacturing undertakings, a ratio of 2:1 is traditionally considered a bench-mark of adequate liquidity5. However, to some of the undertakings like public utilities and service firms this standard ratio is not particularly useful in as much as they carry no inventories for sale.

(2) QUICK OR ACID-TEST RATIO

Recognising that inventory might not be very liquid or slow-moving, this ratio takes the quickly realizable assets and measures them against current liabilities. This is a more refined if somewhat conservative estimate of the firm's liquidity, since it establishes a relation between quick assets is one that can be converted into cash immediately or reasonably soon without loss of value. For instance, cash is the most liquid of all assets. The other assets which are considered to be relatively liquid and include in the quick category are accounts and bills receivable and marketable securities. Inventory and period expenses are considered to be less liquid.

(3) ABSOLUTE LIQUIDITY RATIO

Absolute liquidity ratio is the refinement of the concept of eliminating inventory as liquid assets in the acid-test ratio, because of their uncertain value at the time of liquidation. Although receivables are generally much more liquid in nature than inventories, some doubt may exist concerning their liquidity as well. So, by eliminating receivables and inventories from the current assets, another measure of

liquidity is derived by relating the sum of cash and marketable securities to the current liabilities. Generally, an absolute liquidity ratio of 0.5:1 is considered appropriate in evaluating liquidity.

(B) OPERATIONAL LIQUIDITY

Operational liquidity which is based on the going concern concept of business, is determined by expressing cash flows as a percentage of current liabilities. It is varified here whether the cement companies included in the study would be able to discharge its current liabilities from the cash flows generated from the operations.

ANALYSIS OF LIQUIDITY

(I) CURRRENT RATIO :

In the **Eastern Region,** the average of OCL India Ltd., in Current Ratio is 1.64 times. The average of Damodhar Cement and Slag Ltd., in Current Ratio is 0.57times. Average of Ambuja Cement in Current Ratio is 0.64times. The average of Birla Corporation Ltd., Current Ratio is 1.26times.

In the **Western Region,** the average Current Ratio of Saurashtra Cement Ltd., from March1996 to March 2003 is

1.00.The average Current Ratio of Ambuja Cement Ltd., from March'96 to March'03 is 1.57times. The average Current Ratio of Gujarat Siddhi Cement Ltd., from March'96 to March'03 is 1.06times.

In the **Northern Region,** average Current Ratio of Shree Cement Ltd., from March'96 to March'03 is 1.61times and Associated Cement Co., the Current Ratio is 1.81times.

In the **Southern Region,** the average Current Ratio of Priyadarshini Cement Ltd., from March'96 to March'03 is 1.59times, the average Current Ratio of Shree Vishnu Cement Ltd., is 1.40times. The average Current Ratio of Madras Cement Ltd., is 1.54times. The average Current Ratio of Chettinad Cement Corporation Ltd., is 2.08times. The average Current Ratio of Deccan Cement Ltd., is 2.38times.

In the **Rest of the Region,** Current Ratio of Shree Digvijay Cement Ltd., from March'96 to March'03 is in average 0.95times and Cement Corporation Ltd., average Current Ratio is 0.26times.

(II) QUICK RATIO :

In the **Eastern Region,** the average of OCL India Ltd., from March'96 to March'03 is 0.61times.The average of Damodhar Cement & Slag Ltd., from March'96 to March'03 is 0.00times. The average of Ambuja Cement Eastern Ltd., from March'96 to March'03 is 0.23times. The average of Birla Corporation Limited, from March'96 to March03 is 0.4times.

In the **Western Region,** the Quick Ratio of Saurashtra Cement Ltd., from March '96 to March '03 is 0.45times. The Quick Ratio of Ambuja Cement Ltd., from March'96 toMarch'03 is 0.58times. The Quick Ratio of Gujarat Siddhi Cement Ltd., from March'96 to March'03 is 0.37times.

In the **Southern Region,** the Quick Ratio of Priyadarshini Cement Ltd., in average from March'96 to March'03 is 0.53times. The Quick Ratio of Shri Vishnu Cement Ltd., in average from March'96 to March'03 is 0.44times.The Quick Ratio of Madras Cement Ltd., in average from March'96 to March'03 is 0.48times. The Quick Ratio of Chettinad Cement Ltd., in average from March'96 to March'03 is 0.23times, the Quick Ratio of Dalmia Cement Ltd., in average from March'96 to March'03 is 0.56times. The Quick Ratio of Deccan Cement Ltd., in average from March'96 to March'03 is 1.29times.

In the **Rest of The Regions,** the Quick Ratio of Shree Digvijay Cement Ltd., from March'96 to March'03 is 0.34times and Cement Corporation of India Ltd., from March'96 to March'03 is –0.06times. The extent of both is very low.

(III) CASH RATIO :

In the **Eastern Region,** the average of OCL India Ltd. from March'96 to March'03 is 0.10times. The average of Damodhar Cement & Slag Ltd. from March'96 to March'03 is 0.00times. The average of Ambuja Cement Eastern Ltd., from March'96 to March'03 is 0.05times. The average of Birla Corp. of India Ltd., from March'96 to March'03 is 0.23times. From the above statistics we can say that the Cash Ratio of Birla Corp. Ltd. , is maximum.

In the **Western Region,** the average Cash Ratio of Saurashtra Cement Ltd., from March'96 to March'03 is 0.25times. The average Cash Ratio of Gujarat Ambuja Cement Ltd., from March'96 to March'03 is 0.5times. The average Cash Ratio of Gujarat Siddhi Cement Ltd., from March'96 to March'03 is 0.05times.

In the **Northern Region,** the average cash ratio of Shree Cement Ltd., is 0.29times. The average cash ratio of Associated Cement Ltd., is 0.08times.

In the **Southern region,** the average cash ratio of Priyadarshini Cement Ltd. between March 1996 & March'03 is 0.19times. The cash ratio of Shri Vishnu Cement Ltd., is 0.15times. The cash ratio of Madras Cement Ltd., is 0.31times. The cash ratio of of Chettinad Cement Corporation Ltd., is 0.10times.The cash ratio of of Dalmia Cement (Bharat) Ltd., is 0.91times. In these companies the maximum Cash Ratio is of Madras Cement Ltd., & the minimum Cash Ratio is of Chettinad Cement Corp. Ltd.

In the **Rest of the regions,** the average cash ratio of Shree Digvijay Cement Ltd. from March'96 to March'03 is 0.10times.The Cement Corporation of India Ltd., it is 0.04times.

(IV) INTERVAL MEASURE :

In the **Eastern Region,** average operating cash flow from March 1996 to March 2003 in the following companies is as follows:

OCL India Ltd., from March'96 to March'03 operating cash flow in average is Rs. 12.70crores. Damodhar Cement & Slag Ltd., operating cash flow is Rs. 2.73crores. Ambuja Cement Eastern Ltd., operating cash flow is Rs. 0.90crores. Birla Corporation Ltd., operating cash flow is Rs. 8.59crores.

In the above companies the average of the interval flow in maximum belongs to OCL India Ltd., and the minimum belongs to Ambuja Eastern Ltd.,

In the **Western Region,** Saurashtra Cement Ltd., shows the average from March'96 to March'03 as Rs. 21.02crores. And Gujarat Ambuja Cement Ltd., shows the average from March'96 to March'03 as Rs. 30.36crores. Gujarat Siddhi Cement Ltd., shows the average as Rs. 4.09crores. The maximum is that of Ambuja Cement Ltd., and the minimum is that of Gujarat Siddhi Cement Ltd.

In the **Northern Region,** the average of Shree Cement Ltd., from March'96 to March'03 is Rs. 13.84crores. The average of Associated Cement Co. Ltd. March'96 to March'03 is Rs. 12.94crores.

In the **Southern Region,** according to each company if , we take up to discuss the income in average from March 1996 to March 2003, the average Interval Measure of Priyadarshini Cement Ltd. is Rs. 19.47crores. The average Interval Measure of Shri Vishnu Cement Ltd., is Rs. 15.29crores. The average Interval Measure of Madras Cement Ltd., is Rs. 28.40crores. The average Interval Measure of Chettinad Cement Ltd., is Rs. 19.11crores. The average Interval Measure of Dalmia Cement (Bharat) Ltd., is Rs. 19.11crores. The average Interval Measure of Deccan Cement Ltd., is Rs. 21.8crores. In the above companies average income the maximum is that of is Madras Cement Ltd., and minimum that of is Shree Vishnu Cement Ltd., Rs. 15.29crores.

In the **Rest of the regions,** the average Interval Measure of Shree Digvijay Cement Ltd., is Rs. 9.02crores. The average Interval Measure of Cement Corporation of India Ltd., is Rs. 0.00crores.

(IV) INTERVAL MEASURE

In the **Eastern Region**-Average operating cash flow from March 1996 to March 2003 in the following companies is as follows.

OCL India Ltd., from March'96 to March'03 operating cash flow in average is Rs.12.70crores. Damodhar Cement & Slag Ltd., operating cash flow is Rs.2.73crores. Ambuja Cement Eastern Ltd., operating cash flow is Rs.0.90crores Birla Corporation Ltd., operating cash flow is Rs.8.59crores. In the above companies the average of the internal flow in maximum belongs to OCL India Ltd., and the minimum belongs to Ambuja Eastern Ltd.,

In **Western Region,** Saurashtra Cement Ltd., shows the average from March'96 to March'03 as Rs.21.02crores. And Gujarat Ambuja Cement Ltd., shows the average from March'96 to March'03 as Rs.30.36crores. Gujarat Siddhi Cement Ltd., shows the average as Rs.4.09crores. The maximum is that of Ambuja Cement Ltd., and the minimum is that of Gujarat Siddhi Cement Ltd.

Northern Region The average of Shree Cement Ltd., from March'96 to March'03 is Rs.13.84crores. The average of

Associated Cement Company, March'96 to March'03 is Rs.12.94crores.

Southern Region according to each company if we take up to discuss the income in average from March 1996 to March 2003. The average Interval Measure of Priyadarshini Cement Ltd., is Rs.19.47crores.

The average Interval Measure of Shri Vishnu Cement Ltd., is 15.29crore. The average Interval Measure of Madras Cement Ltd., is Rs.28.40crores. The average Interval Measure of Chettinad Cement Ltd., is Rs.19.11crores.

The average Interval Measure of Dalmia Cement (Bharat) Ltd., is Rs.19.11crores. The average Interval Measure of Deccan Cement Ltd., is Rs.21.8crores. In the above companies average income the maximum is that of is Madras Cement Ltd., and minimum that of is Shri Vishnu Cement Ltd., Rs.15.29crores.

Rest of the Regions, The average between March'96 & March 2003 of every company is, the average Interval Measure of Shree Digvijay Cement Ltd., is Rs.9.02crores. The average Interval Measure of Cement Corporation Ltd. is Rs.0.00 crores.

Chapter 5 : Profitability Vis-A-Vis Liquidity

A comparative Analysis of Return On Investment (R.O.I.) and current ratio Whereas its Current Ratio is reduced to 0.60times, so while discussing R.O.I., it can be its Current Ratio increases.

A comparative Analysis of R.O.I. and Quick Ratio, while discussing the R.O.I. and Quick Ratio, it can be said that in the Eastern Region, the yearly average is seen as Rs. 37.07crores, whereas Quick Ratio is 0.31times.

In the Western Region, as against Rs. 147.23crores the Quick Ratio is 0.46times.

In the Northern Region, as against Rs. 208.82crores, the Quick Ratio is 0.46times.

In the Southern Region as against the R.O.I. is Rs. 59.36crores, the Quick Ratio is 0.59times.

In The Rest of the regions, the Quick Ratio is only 0.20times.

A Comparative Analysis of R.O.I. and cash Ratio, its loss is seen Rs. -9.78crores. As against it, its cash liability is seen as Rs. 0.7crores. In short, while discussing each & every regions,

it can be said that, if the companies have more profit, their cash liability is also more. Here one does not see profitability vis-à-vis a liquidity but one can see profitability equal to liquidity. Which means if the profit is more the liquidity is also more.

A Comparative Analysis of R.O.I. & Interval Measure ratio, while discussing all the four proportions together of R.O.I. , in liquidity, we can say that gross profit depends on cash and it depends on profit. If the proportion of profit is more, the proportion of liquidity in this relation is more.

A Comparative Analysis of average operating profit with its Current Ratio, the operating profit of Eastern Region is Rs. 0.39crores, and average Ratio is 1.00 times.

In the Western Region, its yearly average operating profit is Rs. 68.49crores, and its Current Ratio is 1.00times.

In the Northern Region, the operating profit is in crores, yearly average is Rs. 36.71crores, and Current Ratio is 1.68 times which is maximum.

The Rest of the Regions, shows loss, worth Rs. -66.48crores and its current Ratio is 0.60times, which is minimum. This can be proved while discussing cash with profit.

A comparative analysis of average operating profit (Rs.Crores) and Quick Ratio, seeing it can be said that if the operating profit is high the Quick Ratio is also high and the operating profit is dependent on gross profit. It means if the gross profit is high the operating profit is also high. While discussing the profitability, vis-à-vis, it can be said that there is direct relation between operating profit and Quick Ratio. It means if the operating profit is high, the Quick Ratio is also high and if operating profit is low the Quick Ratio is proportionately low. That is why, it is necessary that, we should take the base of number of the companies in both these regions.

A comparative Analysis of average operating profit and average of Cash Ratio, the companies of all the four regions give importance to profitability but give a very better importance to liquidity, each and every company tries to get more and more profit, which they chose at the expense of liquidity.

A comparative Analysis of average operating profit (Rs.Crores) & average of Interval Measure depending on it . Operating profit can be compared that the company gives less importance to liquidity and more and more importance to profitability.

A Comparative Analysis of Net profit ratio Average of current Ratio, if we take all these five regions, Northern, Western and Southern regions show profit whereas two regions show loss in reference to Net Profit.

A Comparative Analysis of Net Profit average and average of Quick Ratio, it can be said that if we discuss about Net Profit, its yearly average in the Eastern Region, this Region with Rs. – 3.54crores shows loss whereas its Quick Ratio is 0.31times.

In the Western Region, yearly average of Net Profit , is Rs. 52.90crores whereas its Quick Ratio is 0.48times.

In the Northern Region its Net Profit is Rs. 45.70crores whereas its Quick Ratio is 0.43times.

In the Southern Region its yearly average Net Profit is Rs. 14.52crores whereas its Quick Ratio is 0.59times.

The Average loss of Rest of the Regions is Rs. – 95.91crores, and its Quick Ratio is 0.20times. By Discussing the proportion of Net Profit and Cash Ratio, it can be said that liquidity depends on the profit of the company. The Region in which proportion of profit is more that Region can keep more Liquidity and the Region in which the profit is less, that the Region selects Liquidity in less proportion.

Comparative Analysis of Net Profit and Average Interval Measure it can be said that the increase in the proportion of profit is in the same proportion as increase in average interval profit. So here also there is a direct relation between Net Profit and Interval Measure.

A comparative analysis of average Return On Net Capital Employed with its Current Ratio, The Return On Net Capital Employed of Eastern Region was 49.72% and Current Ratio is 1.00times.

In the Western Region its yearly average Return On Net Capital Employed was 3.43%, whereas Current Ratio was 1.19 times.

In the Northern Region, Return on net capital employed is 14.29%, against it, Current Ratio is 1.24 times.
In the Southern Region, Return on net capital employed is 18.74% and Current Ratio is 1.68 times.

In the Rest of The Regions, Return on net capital employed is – 43.41%, against it, Current Ratio is 0.60 times.

In short, the maximum return on net capital employed is in the Eastern Region, whereas negative result is seen in the Rest of the Regions.

A comparative analysis of average Return On Net Capital Employed with its Quick Ratio, in the Eastern Region, yearly average of Return on Net Capital Employed is 49.72%, against it, Quick Ratio is 0.31 times.

In the Western Region, against 3.43%, the Quick Ratio is 0.31 times.

In the Northern Region, the Return on net capital employed is 14.29%. Whereas, its Quick Ratio is 0.43 times.

In the Southern Region, Return on net capital employed is 16.74%. Against it, its Quick Ratio is 0.59 times.

In the Rest of the Regions, both the companies have been running in loss, so the average return on net capital employed is – 43.10%.

The Return On Net Capital Employed is more appropriate for evaluating the efficiency of Interval Management. Liquid ratio establishes a relationship between quick or liquid assets and current liabilities.

A comparative analysis of average Return On Net Capital Employed with its Cash Ratio, according to it, companies of the Eastern Region get Return on Net Capital Employed in yearly average worth 49.72% whereas cash ratio is 0.09 times.

In the Western Region, its Return on net capital employed is 3.43% whereas cash ratio is 0.30 times.

In the Northern Region, its Return on net capital employed is 14.29% and cash ratio is 0.19 times.

In the Southern Region, its Return on net capital employed is 18.7% whereas its cash ratio is 0.34 times.

In the Rest of the Regions, the Return on net capital employed in yearly average is – 43.41% whereas its cash ratio is 0.07times.

A comparative analysis of average Return On Net Capital Employed with its Interval Measures Ratio, in the Eastern Region, Its Return on Net Capital Employed is 49.72% and its Interval Measure is Rs.6.23 crores.

In the Western Region Return on net Capital Employed is 3.49% & Interval Measure is Rs.18.49 crores.

In the Northern Region, Return on net Capital Employed is 14.29% & Interval Measure is Rs.13.39 crores.

In the Southern Region, the Return on net Capital employed is 18.74% & Interval Measure is Rs.22.13 crores.

In the Rest of the Regions, Return on net Capital employed is – 43.41% and the Interval Measure is Rs.4.51 crores.

SUGGESTIONS:

1. In order to increase the profitability of the companies, it is suggested to control the cost of goods sold and operating expenses. The management should try to adopt cost reduction techniques in their companies to get over this critical situation.

2. Since, the industry could not pay regular and fair dividend, the shareholders are disgusted and disinterested about the performance of the companies. This particular trend is not conductive for future   expansion   of   the industry in India. Therefore, the   management   should put in sincere and committed efforts   to   improve   the profitability of the companies   in order to   restore their financial health.

3. The Government can give a boost to the Cement Industry by reducing the royalty and cess on limestone   by 10 percent.

4.   The Cement companies should reduce power and fuel consumption by using low as content coal (imported coal), lignite and agro waste products   especially ground nut husk and baggass should be   used   as   coal substitute.

5.   To strengthen the liquidity position, long term   funds have to be used to finance core current   assets and a part of temporary current assets. It is   better if the companies can reduce the over sized short-term loans and advances.

6.   The cement companies should try to use properly operating expenses.

7.   The rats of excise duty, power, tariff and   surcharge on sales tax are reduced to a   reasonable   level   to   boost the cement industry.

8.   For regular supply of raw material and the final product infrastructural   facilities   are   required   further improvements.

9.   The cement Industry is capital intensive in nature but the policy of purchase of fixed assets should be

carefully   planned and reviewed so that the funds may   be properly   utilized.

10.   The labour productivity should be increased by adopting modern manufacturing process- Dry process and productivity based wage policy should be   implemented by the cement companies. Moreover, the use   of computer should be increased in such a way   that it   does   not prevent employment opportunity.   The   concept of "Work Organization" should be   adopted by   the   cement companies.

11.   The best way to tide over the liquidity problems of the   undertakings   is   to   improve   their   profitability. Companies   should   revise   the   ways,   besides, managing the working   capital effectively, of maximizing overall return on   investment. This is considered essential because, the   cash flows of any   concern rest, primarily, on the   profitability and the amounts   set   a part for depreciation and other non- cash charges.

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