

Question Paper

Security Analysis – II : April 2003

Part D : Case Study (50 Points)

- This part consists of questions with serial number 1 - 5.
- Answer all questions.
- Points are indicated against each question.
- Do not spend more than 80 - 90 minutes on Part D.

Case Study

Read the case carefully and answer the following questions:

1. What are the reasons for Indian companies in the cement industry to undertake mergers and acquisitions in the recent past? Why are the Indian companies easy targets for foreign companies?

(8 points)
2. Perform Michael Porter analysis of the cement industry.

(10 points)
3. Perform ratio analysis of Madras Cements for the last three years and comment in comparison with the industry aggregate ratios given in Annexure I.

(12 points)
4. Explain with suitable reasoning, whether an investor should buy or sell at the points A, B, C, D and E in the charts given in Annexure II.

(10 points)
5. Though currently the company is not enjoying a strong financial position, an investor has great hopes about its future. When the company's restructuring plans work as per his expectations, then there is a chance of its revival in the coming years. He expects that initially for the first five years the dividends paid by the company will grow at a rate of 12% and it would slow down gradually and uniformly during the next 10 years and then would remain stable at 7% after the transition phase. The risk free rate of return is 6.74% p.a. Using information provided in Annexure III, show how the analyst may value the stock based on his perceptions.

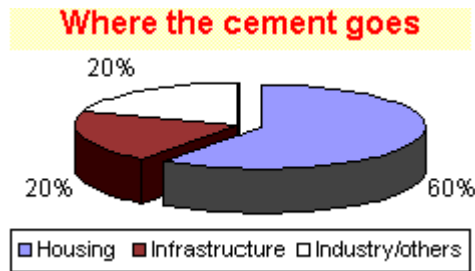
(10 points)

Indian Cement Industry - An Overview

Cement is the preferred building material in India. It is used extensively in household and industrial construction. Earlier, government sector used to consume over 50% of the total cement sold in India, but in the last decade, its share has come down to 35%. Rural areas consume less than 23% of the total cement. Availability of cheaper building materials for non-permanent structures affects the rural demand.

Demand for cement is linked to the economic activity in any country. Broadly, it can be categorized into demand for housing construction (homes, offices etc.) and infrastructure creation (ports, roads, power plants etc). The real driver of cement demand is creation of infrastructure, hence cement demand in emerging economies is much higher than developed countries where the demand has reached a plateau. In India too, the demand for cement will be affected by spending on infrastructure (including housing).

With the boost given by the government to various infrastructure projects, road network and housing facilities, growth in the cement consumption is anticipated in the coming year. The favourable housing finance environment is expected to fulfil the vast housing requirements, both in rural and urban areas. The increase in infrastructure projects by the government coupled with the construction of the Golden Quadrilateral and the North-South and East-West corridor projects have led to an increase in consumption of cement. This increase is expected to continue in the future. The reduction in import duties is not likely to affect the industry as the cement produced is at par with the international standards and the prices are lower than those prevailing in international markets.



Where Is It Heading?

Cement is a typical cyclical industry, characterised by the boom-and bust syndrome. A huge potential market and rapid growth in the early stages lead to a surge in interest and a flurry of research. The projected growth rates point to a lucrative market. The buoyant markets and huge profits raked in by players tempt more players into the market. Capacities increase in excess of demand and a glut in capacity is created. Competition increases, prices fall and margins come under pressure. Capacity addition comes to a halt; weaker players shut shop or sell off to larger ones. Demand catches up and the cycle is repeated all over again. Perhaps, of all the cyclical industries, the Indian cement industry exhibits this boom-and-bust cycle most visibly.

Consider the following:

Temptation

A huge potential market, easy availability of raw material and cheap labour leads to a flurry of activity and a surge in interest. The easiest way to estimate the potential that exists is the per capita consumption of cement, which is abysmally low in India at 82 kgs as against a world average of 255 kgs and the Asian average of 200 kgs. Although the growth of the industry depends more on the level of consumer spending rather than on the per capita consumption, nevertheless, it serves as an easy benchmark to estimate the potential that exists.

Fuel to Fire

The projected growth rates in demand (based on the potential per capita consumption growth or other demand drivers like the expected GDP growth rate) fuels stock market rallies. Consider the boom in cement stocks in 1994. Every cement company was attracting valuations it never dreamt about. Scarcity induced by lower capacities and to a large extent on non-availability of power, drove cement prices to the hilt. The kind of money minted by most cement companies as well as investors in that period made strategists plan enormous increases in capacity. This explains why capacity creation starting 1994, was so enormous.

The Rush

The amount of profits being raked in tempts more players to enter the industry. Contagious enthusiasm sweeps the industry and suddenly there is a glut of new players. Capacities start increasing at a rate greater than the demand growth rates. A scenario of excess supply to demand becomes imminent. Average annual capacity addition during the three-year period 1994-95 to 1996-97 was 8.33mn tons at 86.4mn tons, while that for the five years till 1994-95 was just 3.3mn tons. The capacity further increased to 104.51mn tons in 1998-99 and reached 130mn tons in 2001-02. In FY02 the production increased by 9.39% at 102.4mn tons from 93.61mn tons being produced the previous year. At present the annual capacity is around 135mn tons.

The Anguish

With competition increasing and growth in supply exceeding demand growth, prices begin to fall. This is also the time when players realize that greenfield capacity addition would be to their own detriment. Consolidation within the industry starts. Most of the players weakened during the excess supply induced recession sell off to larger and stronger players. Hostile takeovers are also witnessed during this period as the only way to expand is by takeovers. The slew of takeovers in the last two years culminating in Gujarat Ambuja taking a stake in ACC, the largest cement company in India bears ample testimony to this fact.

Government Policies

Government policies have affected the growth of cement plants in India in various stages. The control on cement for a long time and then partial decontrol and then total decontrol have contributed to the gradual opening up of the market for cement producers. The stages of growth of the cement industry can be best described in the following stages:

Price and Distribution Controls (1940-1981)

During the Second World War, cement was declared as an essential commodity under the Defence of India Rules and was brought under price and distribution controls which resulted in sluggish growth. The installed capacity reached only 27.9 MT by the year 1980-81.

Partial Decontrol (1982-1988)

In February 1982, partial decontrol was announced. Under this scheme, levy cement quota was fixed for the

units and the balance could be sold in the open market. This resulted in extensive modernization and expansion drive, which can be seen from the increase in the installed capacity to 59MT in 1988-89 in comparison with the figure of a mere 27.9MT in 1980-81, an increase of almost 111%.

Total Decontrol (1989)

In the year 1989, total decontrol of the cement industry was announced. By decontrolling the cement industry, the government relaxed the forces of demand and supply. In the next two years, the industry enjoyed a boom in sales and profits. By 1992, the pace of overall economic liberalization had peaked; ironically, however, the economy slipped into recession taking the cement industry down with it. For 1992-93, the industry remained stagnant with no addition to existing capacity.

Government Controls

The prices that primarily control the price of cement are coal, power tariffs, railway, freight, royalty and cess on limestone. Interestingly, all of these prices are controlled by government.

Coal

The consumption of coal in a typically dry process system ranges from 20-25% of clinker production. This means for per ton clinker produced 0.20-0.25 ton of coal is consumed. This contributes 35-40% of the production cost. The cement industry consumes about 10mn tons of coal annually. Since coalfields like BCCL supply a poor quality of coal, NCL and CCL the industry has to blend high-grade coal with it. The Indian coal has a low calorific value (3,500-4,000 kcal/kg) with ash content as high as 25-30% compared to imported coal of high calorific value (7,000-8,000 kcal/kg) with low ash content 6-7%. Lignite is also used as a fuel by blending it with coal. However this process is not very common.

Electricity

Cement industry consumes about 5.5bn units of electricity annually while one ton of cement approximately requires 120-130 units of electricity. Power tariffs vary according to the location of the plant and on the production process. The state governments supply this input and hence plants in different states shall have different power tariffs. Another major hindrance to the industry is severe power cuts. Most of the cement producing states like AP, MP, experience power cuts to the tune of 25-30% every year causing substantial production loss.

Infrastructure

To reduce uncertainty relating to power, most of the leading companies like ACC, Indian Rayon, and Grasim rely on captive power plants. A few companies are also considering power-generating windmills.

Limestone

This constitutes the largest bulk in terms of input to cement. For producing one ton of cement, approximately 1.6 ton of limestone is required. Therefore, the cement plant location is determined by the location of limestone mines. The major cash outflow takes place in way of royalty payment to the central government and cess on royalties levied by the state government. The total limestone deposit in the country is estimated to be 90 billion tons. AP has the largest share -- 34%, Karnataka 13%, Gujarat 13%, M.P 8%, and Rajasthan 6.5%. The plants near the limestone deposit pay less transportation cost than others.

Transportation

Cement is mostly packed in paper bags now. It is then transported either by rail or road. Road transportation beyond 200 kms is not economical therefore about 55% cement is being moved by the railways. There is also the problem of inadequate availability of wagons especially on western railways and southeastern railways. Under this scenario, manufacturers are looking for sea routes, this being not only cheap but also reducing the losses in transit. Today, 70% of the cement movement worldwide is by sea compared to 1% in India. However, the scenario is changing with most of the big players like L&T, ACC and Grasim having set up their bulk terminals.

Infrastructure for Future

The consumption of cement is determined by factors influencing the level of housing and industrial construction, irrigation projects, roads and laying of water supply and drainage pipes etc. The level and growth of GDP and its sectoral composition, capital formation, development expenditure, growth in population, level of urbanization, etc, in turn, determine these factors. But the domestic demand for cement is mainly from the housing activities and infrastructure development. The government paved the way for the entry of the private sector in road projects. It has amended the National Highway Act to allow private toll collection and identified projects, bridges, expressways and big passes for private construction. The budget gave substantial incentives to private sector construction companies. Ongoing liberalization will lead to an increase in industrial activities and infrastructure development. So it is hoped that Indian cement industry shall boom again in near future.

Incentives in States

Most state governments, in order to attract investments in their respective states, offer fiscal incentives in the form of sales tax exemptions/deferrals. In some states, this applies only to intrastate sales, like Madhya Pradesh and Rajasthan. States like Haryana offer a freeze on power tariff for 5 years, while Gujarat offers exemption

from electric duty.

Nature of the Industry

Installed Capacity

India is the world's second largest cement producing country after China. The industry is characterized by a high degree of fragmentation that has created intense competitive pressure on price realizations. Spread across the length and breadth of the country, there are 120 large plants belonging to 56 companies with an installed capacity of around 135mn tons as on March 2002.

L&T, with 16 MT, accounts for 11.88% of the total cement production capacity in the country. It is followed by ACC, with 15MT, accounting for 11.15%. Grasim Industries with a production capacity of 13mn ton has 9.66% of the total cement production. Gujarat Ambuja has a production capacity of 12.5mn tons (including its plant in Chandrapur, Maharashtra). It took a 14.4% stake in ACC and together they account for 27% of the total cement production capacity in the country. Grasim Industries has 10% stake in L&T, and together they account for 29% of the total cement production capacity.

Statewise Capacity

As cement is a low value commodity, freight costs assume a significant proportion of the final cost. Transporting costs render the prices of cement in distant destinations uncompetitive. For instance, it is financially infeasible to transport cement by road over 250 kms. Railways are mostly used to transport cement over longer distances. However, its bulky nature and infrastructure bottlenecks render even rail transport unviable over very long distances (that is why Madras Cements or India Cements, located in the south, can hardly make a difference to the fortunes of west-based companies like Gujarat Ambuja). Therefore, manufacturers tend to sell cement at the nearest market first and sell in distant markets only if additional realization is greater than freight costs incurred. This highlights the regional nature of the cement industry.

South accounts for 33.03% of cement production capacity of the country, with Andhra Pradesh accounting for 15.27% of the total production capacity of India. It has an installed capacity of around 20mn tons of cement and ranks first in the country, followed by Tamil Nadu with 9.94% of the total production capacity. North accounts for 18.02% of the total production capacity, with Rajasthan at 12.55% of the total production capacity of the country. West accounts for 16.85% of the total production capacity. Maharashtra and Gujarat have production capacity of 6.89% and 9.96% respectively.

East and Central Regions account for 16.33% and 15.77% of the total production capacity of the country respectively.

Trade between these regions is on a very low scale mainly because of the transportation bottlenecks and uncompetitive cost of transportation. This apart, there are other factors that determine the location of a cement plant. Proximity to limestone deposits, availability of coal and power and the markets the plants cater to, are some of the critical factors that determine the viability of a cement plant.

Seven Clusters

Cement and its raw materials namely coal and limestone, are all bulky items that make transportation difficult and uneconomical. Given this, cement plants are located close to both, sources of raw materials and markets. Most of limestone deposits in India are located in Madhya Pradesh, Rajasthan, Andhra Pradesh, Maharashtra and Gujarat, leading to concentration of cement units in these states. This has resulted in 'clusters'. There are seven such clusters in the country and account for 51% of the cement capacity. There is a trade-off between proximity to markets and proximity to raw materials due to which some cement plants have been set up near big markets despite lack of raw materials.

Exports

The cement sector is relatively insulated from international markets. This is largely due to inadequate infrastructure to carry on international trade. Being a very bulky item, international trade is very limited and only between neighboring states. This is amply borne out by the fact that cement accounts for not more than 0.20% of total world exports. Although India has been consistently exporting cement in the past, the volume of exports took a beating after the Southeast Asian crisis. From a peak of 2.68mn tons in 1997-98, cement exports from India have slid down to 2.06mn tons in 1998-99. However the situation has improved gradually. In FY02 the exports were 2.77mn tons as against 2.37mn tons in FY01, an increase by 16.87%.

Having a long coastline, India is well positioned to export cement to the Middle East and Sri Lanka. However, congestion at the Indian ports and lack of cement handling facilities restrict the free movement of cement out of India. Hence, only those companies who have their own jetties are able to export. Moreover, currently, prices in the international market too are at unremunerative levels. Nevertheless, companies like Gujarat Ambuja and L&T are major exporters, who export mainly to get incentives like duty-free import of high grade coal and oil. This apart, large scale cement exports are possible only when cement prices in the international market look up.

Capacity Utilization

The installed capacity, which was 62 MT p.a. in 1993, has increased to 134.59 MT in March 2002. The all-India

average capacity utilization of cement plants is at 85%. The fall in utilization levels has been on account of severe shortages of key raw materials such as power, coal and rail wagons.

Reasons for Full Capacity Utilization vis-à-vis Demand

The basic reason for not keeping production low or reducing production and inter-alia utilization is due to the incidence of high fixed costs. The cement units continue to operate at rated capacities to cover their costs. This can be gauged by the fact that most units had installed captive power generation facilities to reduce dependence on the grid.

Cost Components

Energy (including the landed cost of coal which is about 26%) and freight (15%) are the major cost components. Interest and depreciation account for 25-30% of costs, depending on the age and capital structure of the plant. Another important cost element is taxes levied by the government. Most of the companies prefer to maintain their capacity utilization and hence, sell cement in the nearest market to increase their net realization. However, if there is less demand in adjacent states, cement will inevitably have to be transported over longer distances. This squeezes margins.

Key Indicators of Profitability

Given the cost structure, the key indicator of the cement sector profitability is the cement prices. The entire sector valuations will be driven by outlook on cement prices. Given the role the government has in fixing key input costs, it is very difficult for a company to minimize costs beyond a point. The key driver of profitability is cement prices, which fluctuate depending on outlook on demand-supply gaps.

Per Capita Cement Consumption

Per capita cement consumption in India is 82 kgs against a global average of 255 kgs and Asian average of 200 kgs.

Consolidation

A peculiar factor of the cement sector has been the high degree of interest that is being shown by international cement giants in acquiring domestic companies. Consolidations has become a prominent activity as both domestic and international companies try to consolidate their positions in one of the most promising cement markets worldwide. Lafarge has already acquired 4.5mn tons capacity in India through acquisition. Among the others that are believed to be eyeing domestic companies include Holderbank and Cemex.

Overcapacity Blues

Since the stock market boom in 1994, there has been hectic activity in the cement industry in terms of capacity addition. After the boom, when cement prices began to scale new highs, investors rushed in to set up new capacities. In the period from 1993-94 to 1996-97, cement capacity increased by over 35%, with an annual addition of 8.3MT. The annual compounded growth in capacity at 10.54% outpaced the consumption growth of 8.8%. This resulted in capacity being created far in excess of requirement, especially in the northern region of India. The north was the worst affected as most of the cement capacity addition took place in the limestone rich Madhya Pradesh. Gujarat and Maharashtra also took the heat with large capacities being set up by Gujarat Ambuja and Larsen and Toubro. Both these states suffered not only because of excess capacities within the states, but more so due to the surpluses in neighbouring states. The flow of surplus cement from Madhya Pradesh and Rajasthan made matters worse in Maharashtra and Gujarat, respectively.

Towards the end of the boom and bust cycle, cement prices fall taking down with it the cement companies' profitability. The profitability of cement companies suffered and the scrips took a beating on the stock markets. But the good part is that the glut in the industry and the resulting crunch in profitability deterred many entrepreneurs from entering the sector. As it requires at least two years for a cement plant to commence production from the time orders for plant and machinery are placed and another six months to stabilise production, major capacity creation was restricted.

New Capacities (1999-2000)	
Companies	mt
Madras Cement	0.20
Grasim-Dharani	0.90
ACC	0.80
New Capacities 2000-01	
Madras Cement	0.60
ACC	0.40
Sanghi Cement	2.61
Saurashtra Cement	1.00

New Capacities 2001-02	
ACC	2.00
GACL	3.00
Zuari	0.50
Raasi Cements	0.50
Sri Vishnu Cements	0.20
Visaka Cements	0.30
India Cements	0.12

Highlights of Financial Year 2001 and 2002

The consolidation in the sector gained pace. Among the most visible was the deal between GACL and Tata Group whereby the latter would sell its 14.4% stake in ACC to GACL. Among the other companies that acquired capacities were Grasim and Lafarge.

After a healthy performance in FY2000, the cement industry began on a very sombre note in FY01, owing to the drought conditions prevailing in parts of Gujarat, Rajasthan and Andhra Pradesh. The first two months of FY01 have affected cement producers in two ways. First, lower demand and second, still lower cement prices. After having witnessed a growth of over 15% in FY2000 (though prices continued to remain under pressure), cement demand has declined dramatically. In fact, cement despatches declined approximately 2% during this period (there was sharp decline in April, but May witnessed a recovery of sorts). This however, did not deter cement producers from increasing their production. On the contrary, the utilization rate of the industry touched 90%.

During FY02, the cement industry witnessed a 9.6% growth. The annual production increased to 102.4mn tons from 93.61mn tons the previous year, a growth of 9.39%. The cement production in the month of March crossed the 10mn ton mark – the highest ever in a month. The annual despatches for the year was 102.38mn tons, an increase of 9.7% yoy (93.3mn tons in FY01). The price decline during the Q4FY02 led to sharp contraction in the profits of the cement companies, even though the volumes were higher. With the economy in a downturn, investment demand continued to remain low, resulting in sharp decline in the prices during the year. The major demand drivers of cement during the year were the reconstruction activity in the earthquake hit Gujarat, road development project announced by the National Highway Authority of India (NHAI), the Golden Quadrilateral highway connecting the four major metros. There will be nominal growth on account of regular housing and construction needs, low real estate prices plus good tax incentives will ensure healthy housing demand. There have been vital changes in the Indian Cement Industry, like technological upgradation in the pursuit of cost efficiency and drive for consolidation (as seen in the entry of multinationals such as Lafarge, Cemex etc). Moreover modernisation at the plants and improvement of plant processes have helped bring down manpower requirements.

The reduction in import duties on cement and clinkers from 25% to 20% is not likely to affect the industry as the cement produced is at par with the international standards and the prices are lower than those prevailing in other international markets.

With the demand-supply mismatch that will benefit prices and increasing consolidation that will improve the pricing environment, the cement sector offers some interesting investment opportunities. Among others, a pick-up in economic activity and investment in infrastructure is expected to further buoy demand for cement in coming years.

The financial year 2003 has began with a positive note with production increasing by 11.1% in April'02 and 9.6% in May'02 compared with the corresponding period in FY02. The production was around 9.42mn tons and 9.86mn tons during these months. The despatches totalled to 9.58mn tons and 9.69mn tons in April'02 and May'02 respectively, as against 8.59mn tons and 9.01mn tons in the previous period. The western region has emerged as the biggest market for the sector, the demand drivers being the housing sector which includes construction and repairs

Madras Cements Ltd.

Background

MCL is the flagship company of the Ramco group. MCL was incorporated in 1957 and commenced production on its first cement plant in Tamil Nadu in 1961. The plant had a capacity of 200 tpd and operated on wet process technology. The capacity has been increased several fold and the plant has undergone several rounds of modernization. MCL has placed significant emphasis on high operating efficiency and labour productivity. MCL has incurred considerable capital expenditure on modernization. In 1986, the company seized on the opportunity of putting up a plant at Jayantipuram, Andhra Pradesh, which was close to the limestone reserves at Singareni collieries. The project was commissioned 6 months ahead of schedule.

Ramco group enjoys tremendous clout and goodwill in the South. Ramco group was promoted by late

P.A.C.Ramasami Raja. The group's origin can be traced back to a small cotton mill set up in 1938. Over the years, the group diversified and became the leading producer in asbestos cement sheets and pressure pipes. It also developed significant interest in software systems and surgical dressings besides cement. The group has an impeccable track record of cordial labour relationship with high operating efficiency and is focussed on core business activity. Apart from MCL, major group companies are Ramco Industries, Rajapalayam Mills, Shree Vishnu Shanker Mill and Ramaraju Surgical Cotton. Ramco Industries is engaged mainly in fibre cement products and also in spinning, hardware and software businesses.

Plant locations

MCL's original plant located at Ramasami Nagar (named after the founder of the group), in the state of Tamil Nadu, commenced production in 1961. MCL set up another plant at Jayanthipuram in Andhra Pradesh, which was commissioned in 1986. Its third cement plant has gone on stream at Alathiyur Tamil Nadu in 1997.

The income statement and balance sheet of Madras Cements Limited are given below.

Income Statement

(Rs. in crore)

	March 02	March 01	March 00	March 99	March 98	March 97
INCOME:						
Sales Turnover	706.3	618.34	516.17	521.03	487.32	415.24
Other Income	3.21	2.49	2.9	2.68	2.4	4.45
Stock Adjustments	-0.27	4.18	14.56	-15.25	16.32	2.5
Total Income	709.24	625.01	533.63	508.46	506.04	422.19
EXPENDITURE:						
Raw Materials	102.68	84.23	59.79	52.53	56.33	47.21
Excise Duty	0	0	2.52	0	0	0
Power & Fuel Cost	165.09	143.8	128.88	119.48	123.15	93.66
Other Manufacturing Expenses	68.66	64.2	55.84	49.84	50.23	40.45
Employee Cost	35.89	32.84	27.73	23.89	22.68	19.21
Selling and Administration Expenses	153.74	119.18	103.72	103.45	95.13	80.19
Miscellaneous Expenses	2.33	4.85	3.27	1.58	1.2	1.35
Less: Preoperative Expenditure Capitalized	0	0	0	0	0	0
Profit before Interest, Depreciation & Tax	180.85	175.91	151.88	157.69	157.32	140.12
Interest & Financial Charges	79.24	67.21	62.43	71.59	78.9	31.92
Profit before Depreciation & Tax	101.61	108.7	89.45	86.1	78.42	108.2
Depreciation	60.95	52.73	46.37	43.48	41.99	31
Profit Before Tax	40.66	55.97	43.08	42.62	36.43	77.2
Tax	15	11.64	5.25	3.7	3.87	0
Profit After Tax	25.66	44.33	37.83	38.92	32.56	77.2
Adjustment below Net Profit	0	0	0	-7.07	-0.59	-0.16
P & L Balance brought forward	1.83	21.84	17.76	7.57	8.67	3.45
Appropriations	0.73	64.34	33.75	21.66	33.07	71.82
P & L Bal. carried down	26.76	1.83	21.84	17.76	7.57	8.67
Equity Dividend	7.25	6.65	6.65	6.65	6.65	6.65
Preference Dividend	0	0	0	0	0	0
Corporate Dividend Tax	0	0.68	0.73	0.73	0.67	0.67
Equity Dividend (%)	60	55	55	55	55	55
Earning Per Share (Rs.) (Unit Curr.)	212.42	361.34	307.12	316.4	266.19	638.81
Book Value (Unit Curr.)	2191.39	3357.78	3051.41	2801.66	2618.45	2412.77
Extraordinary Items	0.04	-2.51	0.06	0.02	0.05	0.04

Balance sheet

(Rs. in crore)

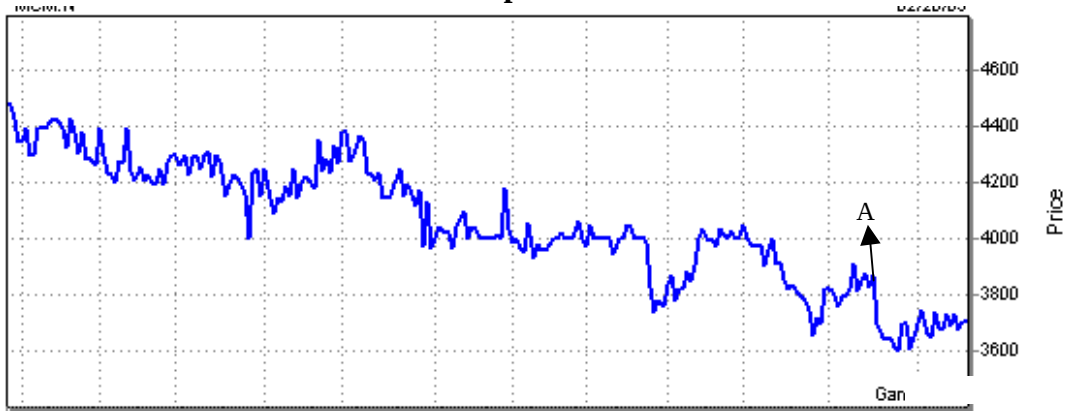
	March 02	March 01	March 00	March 99	March 98	March 97
SOURCES OF FUNDS:						
Share Capital	12.08	12.08	12.08	12.07	11.98	11.98
Reserves & Surplus	252.64	393.54	356.53	326.09	301.71	277.07
Total Shareholders Funds	264.72	405.62	368.61	338.16	313.69	289.05
Secured Loans	525.07	552.11	432.6	355.35	428.35	379.64
Unsecured Loans	211.03	173.7	119.37	77.67	61.89	40.88
Total Debt	736.1	725.81	551.97	433.02	490.24	420.52
Total Liabilities	1000.82	1131.43	920.58	771.18	803.93	709.57
APPLICATION OF FUNDS:						
Gross Block	1403.22	1215.09	1021.08	885.27	857.03	715.19
Less: Accum. Depreciation	407.5	348.7	297.65	252.91	210.15	168.83
Net Block	995.72	866.39	723.43	632.36	646.88	546.36
Capital Work in Progress	11.4	89.49	29.71	17.6	8.66	68.88
Investments	57.34	50.33	50.31	25.43	19.27	19.59
Current Assets, Loans & Advances						
Inventories	65.97	66.13	71.56	50.48	62.93	53.89
Sundry Debtors	48.79	51.48	38.46	38.37	27.79	8.91
Cash and Bank Balance	37.56	38.05	26.92	33.35	75.21	28.85
Loans and Advances	76.65	86.48	69.82	47.61	47.77	59.37
Less: Current Liab. & Prov.						
Current Liabilities	283.75	108.77	81.94	67.06	76.18	68.47
Provisions	11.47	9.35	8.36	7.97	8.4	7.81
Net Current Assets	-66.25	124.02	116.46	94.78	129.12	74.74
Miscellaneous Expenses not w/o	2.61	1.2	0.67	1.01	0	0
Total Assets	1000.82	1131.43	920.58	771.18	803.93	709.57
Contingent Liabilities	42.48	42.56	34.72	18.98	5.01	5.81

Annexure I

Industry Aggregate Ratios

Year	2002	2001	2000
Debt-Equity Ratio	2.79	2.36	2.22
Long Term Debt-Equity Ratio	2.28	1.98	1.91
Current Ratio	1.33	1.56	1.54
Turnover Ratios			
Fixed Assets	0.71	0.79	0.8
Inventory	5.47	5.81	6.14
Debtors	8.5	9.75	10.85
Interest Cover Ratio	0.85	1.33	1.04
PBIDTM (%)	16.15	20.44	17.25
PBITM (%)	9.92	14.73	11.44
PBDTM (%)	4.46	9.4	6.21
NPM (%)	3.79	8.78	5.9
ROCE (%)	6.64	10.38	8.47
RONW (%)	-5.89	6.61	0.08

Annexure II
Chart 1
Share price Chart



Trading Volume

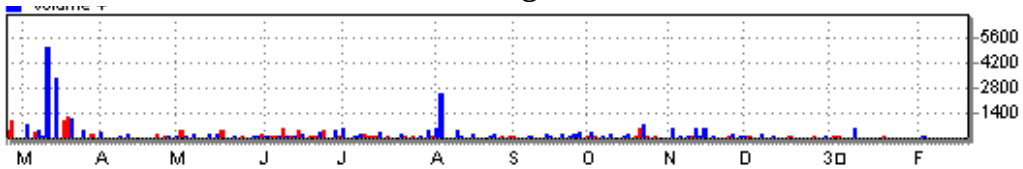


Chart 2
50-day Exponential Moving Average

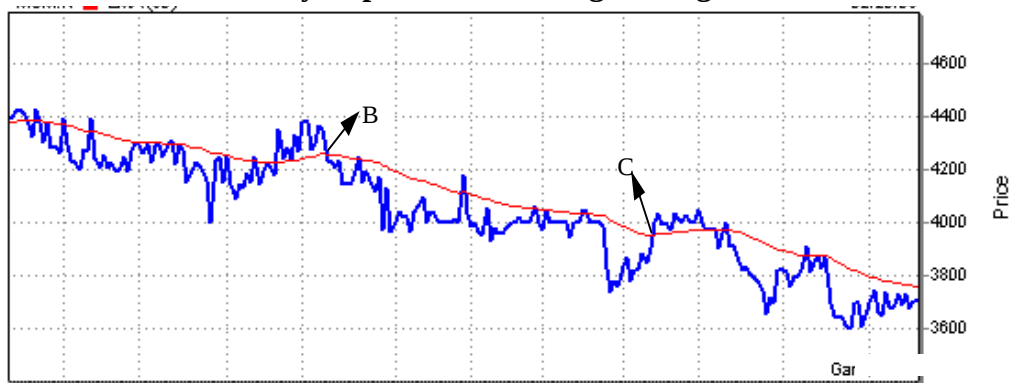


Chart 3
Advance-Dcline line

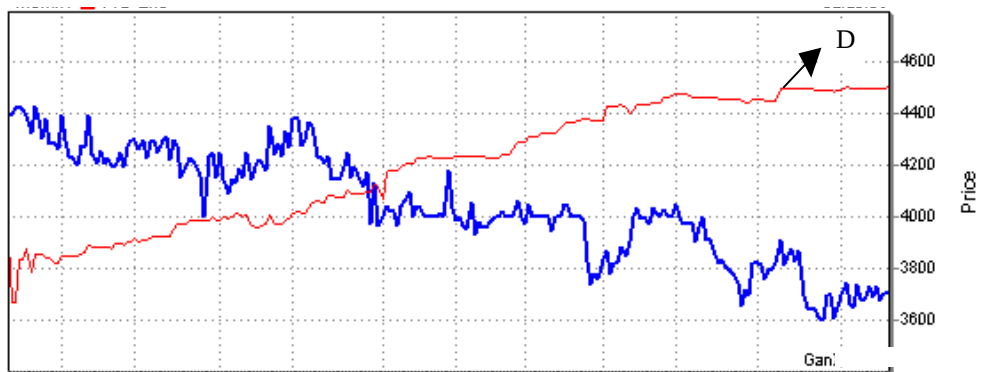
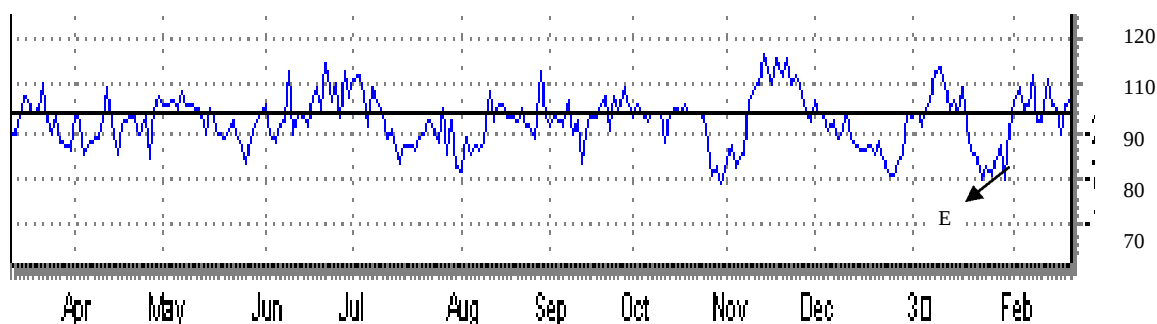


Chart 4
Rate of Change



Annexure III

Month	Closing Price of Madras Cements (Rs.)	Closing Value of Market Index
Feb-02	4360.00	1080.25
March-02	4350.00	1178.00
Apr-02	4400.00	1136.90
May-02	4300.00	1293.30
June-02	4250.00	1339.75
July-02	4384.25	1368.95
Aug-02	4000.00	1357.50
Sept-02	3987.10	1401.25
Oct-02	3975.50	1125.25
Nov-02	3838.00	951.45
Dec-02	4050.50	1067.90
Jan-03	3825.00	1100.15
Feb-03	3700.00	1125.30

END OF PART D

Part E : Caselets (50 Points)

- This part consists of questions with serial number 6 - 14.
- Answer **all** questions.
- Points are indicated against each question.
- Do not spend more than 80 - 90 minutes on Part E.

Caselet 1

Read the following caselet carefully and answer the following questions:

6. What are the risks involved in short selling of stocks? Is it permitted in India now?
(5 points)
7. How can hedge fund managers make profits by holding paired long and short bets?
(7 points)
8. How can the same effect as short selling be achieved using derivatives? What are the advantages and

disadvantages involved in using derivatives instead of short selling stocks?

(4 + 4 = 8 points)

What causes a stock market bubble is the question, sadly asked after the bubble is burst. Bubbles are investors' very own creation of their unchecked enthusiasm. Therefore, the obvious question that arises is why common sense and sound analysis failed to check the dotcom bubble?

The problem had arisen due to a shortage of short selling; suggested by one theory by Prof. Christopher C Geczy of Wharton. He is of the opinion that if an investor can't short, and in the absence of no force to pull the prices down, the price would stay high enough creating a bubble. In his survey of the market, Geczy took a close look at several theoretical trading strategies involving a combination of long-short bets to ascertain whether the profit predictions really works in the trading world. They could find that by buying value stocks and shorting growth stocks, an investor can actually end up being in profits.

Geczy argues that since many of the dotcoms were new companies with a recent history on the exchanges, large blocks of shares remained with the founders and other insiders. In order to ensure rising share prices, the insiders may have held on to their shares, meaning, no shares for the traders to short sell. Therefore, price stabilization could not be achieved. Historical data shows that value stocks provide better returns than growth stock.

Paired bets are put to use by the hedge fund managers to filter out effect of the market as a whole. Thus, by going both long and short, an investor can make money irrespective of the fact whether the overall market is bullish or bearish; so long as the relationship between the two portfolios adheres to the normal pattern. Similarly, other investment strategies with a high probability of profits include capturing differences between performance of the large stocks and small stocks, between high-momentum stocks and low-momentum stocks and between stocks in initial public offerings and index as a whole. All such inferences has been arrived after historical evidences and respective experiences by the investment managers. But at the same time, who does not know that there is no guarantee that the past relationships in investment hold no good for the future.

Finally, there is no assurance that overpriced stocks tend to fall fast enough for short-sellers to make money. Their delay in falling means, the short-sellers would end up incurring more transaction costs. It is again a rude fact that short-sellers have made millions during the late '90s, when market madness was at its peak.

Caselet 2

Read the following caselet carefully and answer the following questions:

9. According to the caselet, the TIPS are going to see a sell off if the rise in the interest rates is not accompanied by an increase in inflation too. Justify.

(5 points)

10. The caselet suggests that the right time to buy insurance against floods is during a draught. What is this approach called? What are its drawbacks?

(5 points)

11. Bond yields include, apart from credit risk premium, some premium to offset for inflation also. If so, what is the advantage of buying inflation linked bonds?

(5 points)

The global economy is under attacks of recession and is suffering from a recession not seen since years. In this context it is worthwhile to ask the question, who is afraid of inflation? But as some fund managers put it, the best time to buy a flood insurance is during a drought. So when there is a limited chance of inflation, any insurance taken at this stage to hedge inflation would come cheap to the portfolio managers. There is an instrument available, namely the Inflation-indexed bonds, or the Treasury Inflation Protected Securities (TIPS). These instruments are getting popular because the investors are worried about the inflation risk. They have been running towards the TIPS marketplace, which a small market by any standards, considering it accounts for only 2% of actively traded Treasury bonds. Excess demand by the investors towards these products have pushed up the prices of these products.

Fund managers are beginning to find the TIPS more attractive as compared to normal Treasury securities. Moreover, like the Treasury securities, these TIPS are quality instruments. These instrument would be the instruments of preference of the corporate and business houses alike.

Researches have proved that TIPS have the potential to provide a significant contribution to the field of portfolio management. This mad rush towards the TIPS is a justification of that realization. Many feel that it is a matter of time before the interest rates start moving upwards again. The investors are aware that the rates are close to their 40-year lows, which have been dictated by the Federal Reserve to stimulate economic growth. Any growth rate would of course translate to a regime of higher interest rates.

At the same time, if there is a trend of rising rates in the next one or two years the TIPS are going to witness a sell off, if such growth rates are not accompanied by a growth in the inflation. As of now, the advisors are of the opinion to buy the TIPS. TIPS assure a guaranteed return backed by the assurance of the Treasury department. Besides, the coupon rates on the securities increase with the rate of inflation. This gives the TIPS a real advantage vis-à-vis other securities. Secondly, the good thing about the TIPS is that they tend to become valuable with a respective rise in the interest rates. The value of the bond's principal increases in direct proportion to the consumer price index. For example, \$10,000 worth of TIPS invested today, will become \$12,000 in 10 years time if the rates inflation rises 2% a year, ignoring the compounding effect.

Looking at these benefits of the TIPS, it is advisable that the investors include the TIPS as an asset class in their portfolios. This would help them to hedge against the inflation risk.

Caselet 3

Read the following caselet carefully and answer the following questions:

12. How can EBITDA be compared to cash flow analysis? How is it different from Cash Earnings Per Share (CEPS)?

(5 points)

13. According to the caselet, EBITDA was initially used to measure the debt paying capacity of a firm. Compare it with interest coverage ratio and debt service coverage ratio.

(5 points)

14. What are the defects of valuation models based on multiples?

(5 points)

Recent web of scams and complex financial structures have left investors with a sense of suspicion as they take a look at the analysts and reflect upon the validity of their analysis. The mood of the investors has been captivated to such an extent that they brought the valuation techniques under the firing lines. The latest technique to come under severe scrutiny is the concept, EBITDA. EBITDA, or Earnings Before Interest, Taxes, Depreciation and Amortization, has long been used by the security analysts as a measure to gauge the financial status of companies belonging to different sectors like those in technology, media or other firms that do not promise an immediate earnings, at the same time incur amortization and other operational expenses. Analysts during the early 1990s had great confidence on the EBITDA and it was often considered as a modified cash flow analysis. It is however, not true that EBITDA enjoys an overwhelming level of acceptance among the academicians. There had been several voices against this tool even from the accountants. Some accountants at the same time find the EBITDA quite handy for their analysis but with a word of caution. They opine that it, as a performance measure is not quite a substitute for net income.

In fact, EBITDA was conceived originally to measure the ability of a company to repay its debt in the short run. Analysts used to compare EBITDA with interest expenses to have an idea whether there is sufficient operating income available with the company to meet interest payments. One of the major pitfalls of EBITDA comes with it ignoring few sources of cash outflows like capital expenditures, prompting a company to report inflated EBITDA, yet face scarcity of cash to finance its interest and other payments. This loophole was publicized when during 1980s leveraged buyouts with high levels of debt started taking the financial landscape by storm. Critics of EBITDA stress on various facets of it, especially the angle on revenue collection. They assert that valuation of a company can better be done by valuing its underlying equities and value of the equity comes from the future cash flows per stock. As the EBITDA analysis reflects the over all free cash flows in poor lights, it fails to find a wide range of application. The case of WorldCom is a true example. After the company reported of an inflated EBITDA by virtue of improper classification of routine expenditure as long-term capital expenditure, the stock went for a free fall in the exchanges. Therefore, the CFO of the company was not charged with securities fraud, rather with other charges relating to accounting errors. At the same time, the supporters of EBITDA point out that it provides a reasonable measure of the performance of a company irrespective of its financing structure. Thus, in this interesting juncture of arguments and counter arguments, the EBITDA stands to witness the final verdict from the industry.

END OF PART E

END OF QUESTION PAPER

Suggested Answers

Security Analysis – II : April 2003

Part D : Case Study

1.
 - a.
 - i. Indian industry seems to be suffering from excess capacity over demand. Depressed market conditions also led the companies in the industry to falling prey to an acquisition.
 - ii. The demand is expected to increase in the future when increased developmental activities are undertaken in the infrastructure sector and the multinational companies are looking forward to such a situation to capture the market.
 - iii. Indian companies in their effort of overcoming foreign acquirers engage in the acquisition process to retain their position in the industry.
 - iv. Consolidation of fragmented market segments would increase the prospects of smaller players in the industry and hence the industry as a whole.
 - b.
 - i. The regional characteristic of Indian cement industry is a reason which prohibits a company in one region to acquire another in another region. MNCs have an edge over this issue since they have no regional constraints.
 - ii. The prohibitive cost of debt acts as a deterrent for the Indian companies in the process of consolidation of their market share any further. On the other hand, the foreign companies have an access to low cost debt. Hence an increasing acquisition activity is observed from the foreign companies.
 - iii. Foreign companies with their huge capital base are placed better that they can absorb losses in the initial stage and attain profits later.
 - iv. Prices of Indian companies' shares are quite low- they can be purchased without much outlay of funds.

2. Threat of entry

Its capital intensive nature acts as a threat to the new players in the industry. Furthermore, the existing players are also facing demand supply imbalance which in turn deters the new entrants. Price regulation of the government on coal, power tariffs, railway, freight, royalty and cess on limestone affects the pricing of cement and cement products. These act as indirect controls though the price of the cement itself is not controlled by the government. The location of the plant depends on the location of the major raw material (limestone) which also does not permit the new entrant easily to enter the industry. However, the cyclical nature of the industry and the amount of profits the existing players earn in good times lure the new players in the industry. Other factors that encourage the new entrants is the projected growth in demand, huge potential market, easy availability of raw material and cheap labor. .

Bargaining power of suppliers

Most of the plants are self reliant on their raw material requirements as it works out to be economical for them. However, power, a major input, is government controlled and the players do not enjoy bargaining power. The other factors that influence the industry's profitability are freight charges, coal, etc. which are also government controlled and hence the suppliers bargaining power tends to be high.

Bargaining power of buyers

The presence of a number of small players increases the bargaining power of buyers since they have a wide choice of suppliers to choose from as the manufacturing process of cement and quality does not vary widely across the different classes of players in the industry.

Threat of substitutes

Cement industry does not face virtually any threat of substitutes. Cement being the major building material widely adopted in household and industrial construction in fact enjoys a monopoly position in the construction industry.

Rivalry among the players

Cement industry is dominated by a lot of small players located in specific regions. The huge potential invites a number of participants in the industry but leads to demand supply imbalance which affects all the players uniformly. Because of intensive competition, the industry is being swept by merger wave in the recent past which again has contributed to increased competition even in the acquisition activity.

The current rivalry among existing players is also high due to low realizations of cement. This has been accentuated by the failure of the repeated attempts of the companies in this industry to form cartels and regulate supply through plant shut downs.

3. Ratio Analysis

Profitability ratios	2002	2001	2000
Gross profit margin (%)	25.61	28.45	29.42
Net Profit margin (%)	3.63	7.17	7.33
Return on Networth (%)	9.69	10.93	10.26
Return on capital (%)	2.56	3.92	4.11
Turnover ratios			
Fixed assets Turnover	0.71	0.71	0.71
Inventory turnover	10.71	9.35	7.21
Accounts receivable turnover	14.48	12.01	13.42
Liquidity ratios			
Current ratio	0.78	2.04	2.29
Quick ratio	0.52	1.49	1.50
Leverage ratios			
Debt-equity	2.78	1.79	1.50
Interest coverage	1.51	1.83	1.69
Growth ratio			
Net Sales	14.23	19.79	-0.93
PAT	-42.12	17.18	-2.8
Networth	-34.74	10.04	9

Interpretation of ratios

The company has a consistently declining gross profit margin and net profit margin. The net profit has declined by 42.12% in the last year. This is not a healthy sign. The company's return on networth and capital employed are also showing a declining trend.

Fixed assets turnover ratio is almost consistent which implies that fixed assets are efficiently utilized. But when compared to the sales figure which is increasing, the consistent fixed assets turnover may be due to use of depreciating assets. Compared to the industry aggregate, the company seems to be performing better as the industry aggregate of net profit margin is declining in the last three years and it is negative last year.

Increasing inventory turnover ratio with increasing sales implies that the company is maintaining a low level of inventory. Low level of inventory may in turn affect its sales in the long run when there is an increase in demand. This is in line with the industry trend and hence the company is not facing any serious implications.

Company's liquidity position is not comfortable as shown by a declining current ratio. The current ratio is below one. This shows that company is not well protected with its liquidity position to meet its current liabilities. Declining quick ratio indicates that there is a low level of inventory. The current ratio is low when compared to the industry standards. While the industry aggregate is consistent in this aspect, the company has to improve its liquidity position.

Company is having a high debt-equity ratio and debt is increasing continuously in the last three years. The debt equity ratio has increased by 55.3% and 19.33% in the last two years respectively. Interest cover is very low and less than two. This increases the probability of the company being unable to meet its interest obligation with continuously increasing debt. But the industry aggregate debt equity ratio is higher and the company's position is on par with the industry standards.

Thus the company appears to have an unfavorable financial position from an investor's point of view. This forces the company to make serious attempts to revive its position. In comparison with the overall trend of the industry, the company is relatively in a comfortable position.

4. A: A downtrend accompanied by low volumes is normal market tendency and hence no potential of trend reversal. So, the indication is to sell.
- B: Price line falls below a rising moving average line – so it does not indicate any trend reversal – the indication is to buy, to gain from the rebound in the secondary reaction.
- C: Price line rises above a falling moving average – so a fall back below the line can be expected – indication is to sell.
- D: The A / D line appears to have reached a peak (almost). It may be considered to be the indication for the market's peaking. But, this line has to be studied along with a market index and not share price.
- E: The ROC index is rising while it is below the reference line. So it is an indication of the reversal of the trend.

5. a.

MCL price (Rs.)	Market index value	Return on MCL (R _I)%	Return on Market index (R _N)%	(R _M - $\bar{R}_M$)	(R _I - $\bar{R}_I$)	(R _I - $\bar{R}_I$) ²	$\frac{R_I - \bar{R}_I}{R_M - \bar{R}_M} \times$
4360	1080.25						
4350	1178	-0.229	9.0488	1.062	8.226	67.663	8.733
4400	1136.9	1.1494	-3.489	2.44	-4.31	18.594	-10.5
4300	1293.3	-2.273	13.757	-0.98	12.93	167.28	-12.7
4250	1339.75	-1.163	3.5916	0.128	2.768	7.6645	0.355
4384.25	1368.95	3.1588	2.1795	4.45	1.356	1.8399	6.036
4000	1357.5	-8.764	-0.836	-7.47	-1.66	2.754	12.4
3987.1	1401.25	-0.323	3.2228	0.968	2.4	5.7587	2.324
3975.5	1125.25	-0.291	-19.7	1	-20.5	421.06	-20.5
3838	951.45	-3.459	-15.45	-2.17	-16.3	264.67	35.27
4050.5	1067.9	5.5367	12.239	6.828	11.42	130.33	77.95
3825	1100.15	-5.567	3.0199	-4.28	2.197	4.8261	-9.39
3700	1125.3	-3.268	2.2861	-1.98	1.463	2.1402	-2.89
		-15.49	9.8772			1094.6	87.03

$$\text{Return on MCL stock } (\bar{R}_M) = \frac{-15.49}{12} = -1.291\%$$

$$\text{Return on Index } (\bar{R}_I) = \frac{9.8772}{12} = 0.8231\%$$

$$\text{Annualize Return on Index } R_m = (1 + 0.008231)^{12} - 1 = 10.34\%$$

$$\text{Cov}_{mM} = \sum \frac{(R_M - \bar{R}_M)(R_I - \bar{R}_I)}{n-1} = \frac{87.03}{11} = 7.912(\%)^2$$

$$\sigma_m^2 = \sum \frac{(R_N - \bar{R}_N)^2}{n-1} = \frac{1094.6}{11} = 99.51 (\%)^2$$

$$\beta = \frac{7.912}{99.51} = 0.0795$$

b. Required rate of return

$$= R_F + \beta (R_m - R_F)$$

$$= 6.74 + 0.0795 (10.34 - 6.74)$$

$$= 7.0262$$

Using H Model

$$\frac{D_o[(1+g_n) + H(g_a - g_n)]}{r - g_n}$$

$$\frac{7.25[(1+0.07) + 10 \times 0.05]}{(0.070262 - 0.07)}$$

$$\frac{11.3825}{0.000262} = \text{Rs. } 43444.7$$

Part E: Caselets

Caselet 1

6. Short selling is based on the expectation that the prices of stocks are going to fall. The short seller, who sells at a higher rate, will then be able to buy at a lower rate and square off his transaction. If, instead of falling, the prices rise, the short seller will be forced to buy at higher rates than he sold for and will thus lose to the extent of the difference between the selling and buying prices.

An additional risk he faces is that, prices may rise initially, even if they fall eventually. This will result in the short seller having to pay margins to cover his losses or square off. If he squares off, he will lose due to the same reason again, - buying at higher rates than sold for. If he does not, he will have to sustain the losses and bring in more funds until the price he expected is reached.

Finally, even if the price the short seller expects is reached, he may not gain anything, if the prices have been high for too long, due to the opportunity cost of funds on the additional funds deployed to cover the losses.

Short selling is permitted, but short positions cannot be carried forward. The carry forward facility was banned after derivative products were introduced.

7. It has been seen historically that the returns from value stocks have been higher than the growth stocks. If a hedge fund manager holds a long position in value stocks, he will earn the higher return, and on the short position, he may lose the lower return, thus still keeping him in the profits. But, if it is known that value stocks give higher returns, why hold growth stocks at all? It is because when a position in equities is offset by another position in equities, the resultant level of risk will be very low. That such positions provide good returns has been proved based on historical data. Apart from the empirical evidence, there is no other conceptual explanation of why the value stocks may provide better returns than growth stocks or vice versa.

8. The effect of selling a stock can be obtained by selling a futures contract. A futures contract is a contract to transact in future, without any option, at the price determined today. So, by entering into a short position in a futures contract, one agrees to sell the stock at a future point in time. Thus, any changes in the price of a stock have the same effect as an actual sale of a stock, until that day.

It is also possible to get a position equivalent to a short position in the stock by going short in a call option and long on a put option, on the same underlying stock, same maturity and same expiration date.

The advantage of the derivatives is that the margin requirements are generally low, and the liquidity of the markets is high (in developed countries). On the other hand, the disadvantage of the derivatives is that they are generally available only for short maturities, while short sale of stocks can be sustained for any length of time.

Caselet 2

9. If the interest rates increase, the prices of the bonds will fall. A upward trend in interest rates will create apprehensions of further increase in interest rates and a resultant further fall in bond prices. As a result, investors in the bonds will sell them away, to avoid further losses. However, if the rise in interest rates is also accompanied by rise in inflation, then the interest rates are likely to sustain a relatively higher levels, than otherwise. In other words, there should be a fall in real interest rates, and nominal rates should remain more or less the same, for bond prices to remain stable.

10. Buying insurance against floods when there is a draught or buying inflation indexed bonds when the inflation is low is called the contrarian approach. In this approach, the investor takes an opposite view to the view taken by the market in general. This will facilitate him to obtain the products at competitive prices, due to the weak demand then prevailing.
The inherent risk of the approach is that the expectations may not come true. When the market as a whole is expecting the inflation rate to be low, if the investor takes the opposite view, and then the view of the market turns out to be true, the investor is bound to lose.
11. Inflation indexed bonds contain a premium for inflation based on the market's overall expectations of the inflation. The actual inflation may turn out to be more or less than the premium factored into the yields of the bond by the market. In an inflation indexed bond, the coupons paid will depend on the actual rate of inflation and thus are more likely to protect the investor against the inflation. Hence they may be preferred to the normal bonds.

Caselet 3

12. EBITDA can, in one sense, be compared to cash flow analysis. It considers the earnings of the company without considering the non-cash expenses like depreciation and amortizations, which are also added back in cash flows, to the net income. However, it does not also consider the interest to be paid and the taxes. This is how it is different from CEPS. Another difference is that CEPS is calculated per share while EBITDA is always considered as an absolute figure. EBITDA omits some expenses for which cash has to be paid, while CEPS ignores only the non-cash write-offs.
13. EBITDA gives the earnings of the company before any payments relating to debt – direct or indirect. Taxes, which are paid only after paying interest, are also not deducted from the earnings. Thus, the measure gives an idea of how far the company is in a position to pay the interest and repay the principal. The basic difference between the two is that they compare the earnings with some parameter relating to debt repayment (either interest or the sum of interest and principal) while EBITDA is just an absolute figure. Thus the EBITDA only gives an idea of how much money the firm has, but nothing about whether it is sufficient or not – to determine that, it has to be compared with another figure. Of the three, the DSCR gives the best idea, as it considers both interest and also principal.
14. Firstly, models based on multiples assume that the market links up the value of a share to some factor like the EPS or CEPS or some other. This may not be true. Though there may be correlation between the ratios and the stock prices, the valuation of the stock based on the multiples implicitly assumes that the past relationships between the two apply in future also, which need be so. Thus, the models are likely to fail.