Dimension of Profitability performance of Indian Cement Industry- An Inter company analysis

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Abstract

The profit of a business may be measured by studying the profitability of investment in it. Profitability may be defined as the ability of a given investment to earn a return from its use. This ability is referred to as lending power or operating performance of the investment concerned. Profitability is a relative term and its relation with the other factors affects the profit. It is the test of efficiency, powerful motivational factor and the measure of control in any business. Hence, an attempt has been made to study the profitability of Indian cement industry after liberalization. The overall analysis of profitability from the point of view of Financial Management shows the ability of the selected companies to withstand competition and adverse conditions during the study period. It can be concluded that the position regarding earnings per share and dividend payout ratio was good in all the selected companies of the cement industry during period under review highlighting their better performance and prospectus from the point of view of owners. The overall analysis of profitability from the point of view of utilisation of assets was satisfactory. However, the companies have to adopt a sound inventory policy and make efficient use of their assets to improve profitability.

KEYWORDS: Profit, Profitability, Cement Industry, Return on Investment, Utilisation of assets and Operating performance.

Introduction

The business firms are generally established with a view to earning profit from their business operations. But under different situations the object of the business firms may be changed to survival, growth and stability etc. Business firms are to survive in a dynamic and expanding environment. It has to go on expanding the scale of its operation on a regular and continuing basis by generating sufficient profit. Profits are the soul of the business without which it is lifeless. In fact, profits are useful intermediate beacons towards which a firm's capital should be directed. It is difficult for a business to breathe well without profit. It may be regarded as a mirror of the operating performance of the business activities. But in the real business environment of today, profit is thus, not the sole objective but one among the most important objectives, which normally guide and direct business operations. The importance of profit in judging and directing business affairs has been recognized both by economic thinkers and accounting practitioners. According to economic thinkers, profits are the report card of the past, the incentive gold star for the future and also the stake for the new venture. Accountants ascertain profits, because profit index as they perceive, is a reliable measure of efficient performance in using productive resources. The ultimate test of any business enterprise is profit. Perhaps the most important reason for keeping accounts is that the information contained in

them provides the means of measuring the progress of the business or "Testing its pulse", and of indicating when and where remedial action, if necessary shall be taken.

These days' managements are giving top priority to increase the profits and maximize their shareholders' wealth. The efficiency of a management is measured in terms of profit generated by the business. It is sometimes said that higher profitability implies greater efficiency. Apart from the owners, the management of the company, and the creditors, both long-term and short-term, would be interested in the financial soundness of the firm. The management of a firm is generally eager to measure the operating efficiency of a firm and its ability to ensure adequate return to its shareholders depends ultimately on the profits earned. Moreover, profits provide money for repaying the debt used to finance the project and the resources for expansion.

Statement of the problem

The efficiency of the business is measured by the amount of profit earned. The greater the profit, the more efficient is the business considered to be. The profit of a business may be measured by studying the profitability of investment in it. Profitability may be defined as the ability of a given investment to earn a return from its use. This ability is referred to as lending power or operating performance of the investment concerned. Profitability is a relative term and its relation with the other factors affects the profit. It is the test of efficiency, powerful motivational factor and the measure of control in any business. Hence, an attempt has been made to study the profitability of Indian cement industry after liberalization.

Objectives of the study

The primary purpose of the present study is to obtain a true insight into the profitability performance of the selected cement companies in India. Profitability efficiency is made from the accounting point of view to assess the effectiveness of plans, policies and objectives of the industry by measuring the efficiency of the cement companies under study, in various aspects of profitability. However, the specific objective of the study is to study the profitability position, trends and determinants of profitability of the selected companies of Indian cement industry.

Hypotheses

The following are the important hypothesis framed and tested for the study.

i) There is no significant difference in the mean percentage of profitability ratios in Indian cement companies.

ii) There is no significant difference between the years and between the companies profitability in the selected Indian cement companies.

Selection of sample

Keeping in view the scope of the study, it is decided to include all the companies under cement industry working before or from the year 1995-96 to 2009-10. But, owing to several constraints such as non-availability of financial statements or non-working of a company in a particular year, merged companies, it was compelled to restrict the number of sample companies to eight. The Capitaline and

CMIE database publish key financial data of Indian corporate sector systematically. Hence, Capitaline and CMIE databases proved to be complimentary to finalize the sample for the study. The exhaustive list of cement industry in India from Capitaline was cross checked with CMIE database to sort out companies to fit in as the sample for the study. The comprehensive list of companies prepared from the database was modified by sorting out the firms using the following criteria; Which were not in operation for a year during the period of study; Which were in operation but non-availability of data for the whole study period; Which were merged with another company during the period of study; Which were not listed in Bombay Stock Exchange; and which had above 20,00,000 MT installed capacity. There were 42 large cement companies and 94 mini cement companies operated in India. The list of large cement companies selected included in the present study along with year of incorporation and their market share is presented in Table 1. It is evident from Table 1 that sample companies represent 39.13 percentage of market share in the Indian cement industry.

Measurement of profitability

Profitability of a firm can be measured by its profitability ratio. In the process of performance appraisal of a business, profitability ratios can be calculated to measure the operating efficiency. The profitability ratios can be determined on the basis of either investment or sales and for this purpose a quantitative relationship between the profit and the investment or the sales is established. In the words of **James C. Van Horne**, "Profitability ratios are of two types: those showing profitability in relation to sales, and those showing profitability in relation to investment. He further added, with all of the profitability ratios, comparisons of a company with similar companies are extremely valuable. Only by comparison one would be able to judge whether the profitability of a particular company is good or bad, and why. Absolute figures give some insight, but it is a relative performance which is the most important". The profitability of a company should also be evaluated in terms of its investment in assets and in terms of capital contributed by creditors and owners, as such if a company is unable to earn a satisfactory return on investments, its survival is threatened. In this study an attempt has been made to study the various ratios suggested for measuring the performance in relation to profitability.

Analysis of profitability from the point of view of financial management

In order to fix the causes which are responsible for low / high profitability, a financial manger should continuously evaluate the efficiency of a firm in terms of profit. The study of increase or decrease in retained earnings, various reserves and surplus will enable the financial manger to see whether the profitability has improved or not. An increase in the balance of these items is an indication of improvement in profitability, whereas a decrease indicates a decline in profitability. The profit margin ratio is a profitability ratio which measures the relationship between profit and sales. It indicates the efficiency or effectiveness with which the operations of a business are carried on. Poor operation performance may result in low profit margin ratio. Profit margin varies with the disproportionate variations in sales revenue in comparison to costs or the vice-versa. The profit margin can be increased either by making up prices or by reduction in costs or by both. Profitability can be analyzed either on the basis of operating profits or with regard to net profit. Operating profit reflects profit from the main business for which the corporation or enterprise was launched and offers the

most reliable measure for the long-term perspective. On the other hand, the net profit reflects the net profit of operating and non-operating incomes. It equips the analyst with the most reliable measure of profitability from the short-term point of view. To judge the profitability performance of selected cement companies, the following ratios relating to profit margin have been computed and analyzed.

Operating profit margin

The first profitability ratio in relation to sales is the gross operating profit margin. The operating profit margin reflects the efficiency with which the management produces each unit of product. This ratio indicates the average spread between the cost of goods sold and sales. It is one of the most carefully watched measures of profitability. A high operating profit ratio is the sign of managerial effectiveness. Conversely, a low ratio should be carefully investigated and compared with the ratios of similar corporations to diagnose as also to remedy a problem**.** There is no standard norm for operating profit ratio and it may vary from business to business but the operating profit should be adequate to provide for fixed charges, interest and dividend.

Table 2 shows a fluctuating trend in the operating profit margin ratio of the selected cement companies during the study period. The average operating profit margin ratio varied from companies to companies, the highest average was 27.39 per cent in Madras Cement Limited followed by Chettinad Cement Corporation Limited (25.57 per cent), Dalmia Cement Limited (24.91 per cent), Shree Cement Limited (24.17 per cent), Grasim Industries Limited (21.69 per cent), India Cements Limited (19.47 per cent), Associated Cement Companies Limited (16.02 per cent) and Birla Corporation Limited (11.47 per cent). The average ratio of operating margin was higher than the industry average in the case of all the selected cement companies. Five out of eight companies witnessed positive compound annual growth rate of this ratio during the study period. Dalmia Cement Limited, Grasim Industries Limited and Madras Cement Limited witnessed negative compound annual growth rate of this ratio during the study period. The CV value of all the industries except Birla Corporation Limited showed high fluctuations in the operating profit margin ratio of the selected companies during the study period. Birla Corporation Limited shows erratically fluctuating operating profit margin ratio during the study period. The overall fluctuating trend of this ratio can be attributed to the factors like high operating expenses, market conditions, planned product mix and high rate of wages and salary. Further, the mean operating profits of all the companies except BCL significantly differ from the industry mean (t value).

Gross profit margin

This ratio expresses the relationship between gross profit and sales. It tells the management what sales can generate earnings before any costs of business are met. It shows the percentage by which the selling price can fall and the percentage by which the cost of goods sold can increase before gross profit can be nullified. A low gross profit may reflect unfavourable purchasing and mark up policies. A low gross profit may indicate the inability of the management to develop ratio. The gross profit margin reflects the efficiency with which management produces each unit of product. This ratio indicates the average spread between the cost of goods sold and the sales revenue. A high gross profit margin relative to the industry average implies that the

industry is able to produce at relatively lower cost. A high gross profit margin ratio is a sign of good management. A low gross profit margin may reflect higher cost of goods sold due to the industry's inability to purchase raw materials at favourable terms, inefficient utilization of plant and machinery or over-investment in plant and machinery, resulting in higher cost of production.

Table 2 shows the position regarding the gross profit margin ratio in the selected cement companies. The gross profit margin ratio of all the companies witnessed a fluctuating trend during the study period. The average gross profit margin ratio of all the selected companies was less than the industry average ratio. The highest average was 20.05 per cent in Madras Cements Limited followed by Shree Cement Limited (18.76 per cent), Dalmia Cement Limited (17.83 per cent), Grasim Industries Limited (17.41 per cent), Chettinad Cement Corporation Limited (17.39 per cent), Associated Cement Companies Limited (11.91 per cent), India Cements Limited (9.88 per cent) and Birla Corporation Limited (8.24 per cent). By concentrating on operational efficiencies and cost reduction measures in all areas of production and distribution, the companies will strive to protect and improve their profitability. The compound annual growth rate of this ratio was positive in the case of all the companies except Dalmia Cement Limited and Madras Cements Limited. The CV value of this ratio shows a very high fluctuation in the gross profit margin of the selected companies during the study period. Further, the mean gross profits of all the selected companies significantly differ from the industry mean (t value).

Return on capital employed

The primary objective of making investment in any business is to obtain satisfactory return on the capital invested. Hence, the return on capital employed is used as a measure of success of a business in realizing this objective. It is the chief profitability ratio and the most important measure of performance as it indicates the comparative efficiency with which the whole company runs properly. Therefore, return on capital employed is a valuable yardstick to measure the overall performance of an undertaking. The return on capital employed shows the earning power of the capital invested. It indicates how the management has used the funds supplied by creditors and owners. The higher the ratio, the more efficient can be considered the enterprise in using funds entrusted to it. The comparison of this ratio with the ratios of similar business organizations will reveal the relative operating efficiency of a business enterprise. Further, an investor can judge the future prospects of business enterprises by taking into consideration the earning capacity of capital employed.

Table 2 explains a fluctuating trend in the return on capital employed of the selected cement companies. The average return on capital employed varied from company to company. The highest average was 19.63 per cent in Madras Cements Limited, followed by Associated Cement Companies Limited (18.45 per cent), Birla Corporation Limited (18.42 per cent), Chettinad Cement Corporation Limited (18.16 per cent), Grasim Industries Limited (17.94 per cent), Shree Cement Limited (16.36 per cent), Dalmia Cement Limited (14.66 per cent) and India Cements Limited (11.49 per cent). The average ratio of return on capital employed was less than the industry average in all the selected cement companies. This shows poor performance of the selected companies in this regard. The compound annual growth rate of this ratio was positive in Associated Cement Companies Limited, Birla Corporation Limited, Grasim Industries Limited and Shree Cement Limited. But the compound annual

growth rate of this ratio was negative in Chettinad Cement Corporation Limited, Dalmia Cement Limited, India Cements Limited and Madras Cements Limited. The CV value shows that this ratio was erratically fluctuating in all the selected cement companies during the study period. Further, the mean return on capital employed of all the selected companies except Associated Cement Companies Limited and Birla Corporation Limited significantly differ from the industry mean (t value). The overall analysis of this ratio reveals that the ratio of return on capital employed was satisfactory in the case of Associated Cement Corporation Limited, Birla Corporation Limited, Grasim Industries Limited and Shree Cement Limited.

Interest coverage ratio

Interest coverage ratio measures the debt servicing capacity of a firm in so far as fixed interest on long-term loan is concerned. Simply the ratio of earnings before interest and taxes for a particular reporting period to the amount of interest charges for the period. The overall coverage method stresses a company's meeting all fixed interest, regardless of the seniority of the claim. This ratio indicates whether the earnings of a firm are sufficient to pay interest charges periodically or not. In other words, it is calculated to know whether the creditors are secured or unsecured in respect of their periodical interest income. It is also called as 'Debt Service ratio' or 'Fixed Charges Cover'.

Table 2 shows a fluctuating trend in the Interest coverage ratio of the selected cement companies. The average interest coverage ratio of the selected companies was more than the industry average ratio except for Chettinad Cement Corporation Limited, Dalmia Cement Limited and India Cements Limited. The highest average was 8.14 in Grasim Industries Limited followed by Associated Cement Companies Limited (8.11), Birla Corporation Limited (6.71), Madras Cements Limited (4.74), Shree Cement Limited (4.14), Chettinad Cement Corporation Limited (3.34), Dalmia Cement Limited (2.63) and India Cements Limited (2.41). However, these were not statistically significant. The compound annual growth rate of this ratio was positive in the case of all the selected cement companies except Dalmia Cement Limited. The CV value shows that this ratio was erratically fluctuating in all the selected cement companies during the study period. The mean interest coverage ratio was statistically significant from the industry mean in the case of Associated Cement Companies Limited, Birla Corporation Limited, Grasim Industries Limited and India Cements Limited.

Analysis of profitability from the point of view of Shareholders

Being the real owners of the business, the shareholders should continuously evaluate the efficiency of a firm in terms of profit because they have permanent stake in business. So, they are directly affected by the prosperity of higher profits and adversity of losses suffered by the business. An increase in the net profit after tax is an indication of improvement in profitability and in turn improved financial welfare of the owners and larger the share of dividend to them and vice versa.

Net profit margin

Net profit margin enables one to measure the relationship between sales and net profits and it is an indicator of the efficiency of the management in manufacturing, selling and financing. A high net profit margin would ensure

adequate return to the owners as well as enable a firm to withstand adverse economic conditions when the selling price is declining, cost of production is rising and demand for the product is falling.[21] In case the net profit margin is inadequate, the company will not be in a position to pay off its debts and give a satisfactory return to its shareholders.

Table 3 shows the position regarding the net profit margin ratio in the selected cement companies. The net profit ratio of all the companies witnessed a fluctuating trend during the study period. The average net profit margin varied from company to company. The highest average was 10.49 per cent in Madras Cement Limited followed by Dalmia Cement Limited (10.05 per cent), Grasim Industries Limited (9.79 per cent), Shree Cement Limited (7.35 per cent), Chettinad Cement Corporation Limited (6.14 per cent), Associated Cement Companies Limited (5.90 per cent), Birla Corporation Limited (3.71 per cent) and India Cements Limited (3.16 per cent). The average net profit margin ratio of all the selected companies except Birla Corporation Limited and India Cements Limited was more than the industry average ratio and statistically significant at 5 per cent level. The compound annual growth rate of this ratio was positive in the case of Associated Cement Companies Limited, Birla Corporation Limited, India Cements Limited and Shree Cement Limited. However, it was negative in the case of Dalmia Cement Limited, Grasim Industries Limited and Madras Cements Limited and Chettinad Cement Corporation Limited. The companies should concentrate on further improvements in operational efficiency and cost reduction through process improvements reduction in consumption norms and reallocation of resources. The CV value of this ratio shows a very high fluctuation in the net profit margin of the selected companies during the study period. Further, the mean net profit of all the selected companies except Birla Corporation Limited, Chettinad Cement Corporation Limited and India Cements Limited significantly differ from industry mean(t value).

Return on total assets

The return on total assets of a company determines its ability to utilize the assets employed in the enterprises efficiently and effectively to earn good returns. This ratio measures the percentage of profits earned per rupee of assets and thus is a measure of efficiency of the company in generating profits on its asset. The ratio can be very well used for inter-firm and inter-industry comparisons. Notably, neither the operating profit margin nor the turnover ratio by itself provides an adequate measure of operating efficiency. Further, while the net profit margin ignores the utilization of assets, the turnover ratio ignores profitability on sales, the return on assets ratio or earning power reveals these shortcomings. An improvement in the earning power of the firm will result if there is an increase in turnover on existing assets and an increase in the net profit margin.

Table 3 explains the fluctuating trend in the return on assets ratio of the selected companies of the cement industry. The average return on total assets ratio varied from company to company, the highest average was 8.66 per cent in Madras Cements Limited followed by Grasim Industries Limited (8.15 per cent), Shree Cement Limited (6.89 per cent), Chettinad Cement Corporation Limited (6.63 per cent), Associated Cement Companies Limited (6.48 per cent), Dalmia Cement Limited (6.32 per cent), Birla Corporation Limited 95.09 per cent) and India Cements Limited (3.38 per cent). The average return on total assets ratio of all the selected

companies except India Cements Limited was more than the industry average ratio and statistically significant at 5 per cent level. The compound annual growth of this ratio was positive in the case of Associated Cement Companies Limited, Birla Corporation Limited, Grasim Industries Limited and Shree Cement Limited. However, it was negative in the case of Dalmia Cement Limited, India Cements Limited, Madras Cement Limited and Chettinad Cement Corporation Limited. The CV value of this ratio shows very high fluctuation in all the selected companies. The mean return on total assets of all the selected companies except Birla Corporation Limited, Chettinad Cement Corporation Limited and India Cements Limited significantly differ from industry mean (t value). The overall fluctuating trend of this ratio can be influenced by the ability of the company to utilize the assets in a profitable way.

Return on Shareholders' funds

There is no doubt that the preference shareholders are also the owners of a company. The real owners are the ordinary shareholders who bear all the risk, participate in management and are entitled to all the profits, remaining after outside claims, including preference dividends. The profitability of a company from the owner's point of view should, therefore be assessed in terms of the return on the owners equity. The ratio measures the ability of the management of the enterprise to generate adequate returns for the capital invested by the owners of the company. The ratio is meaningful in the sense that it measures the residue of income, which really belongs to the owners. This residue is measured in relation to the capital base, which takes into account not only the share capital paid by the owners, but also accumulated surplus or deficit. The earning of a satisfactory return is the most desirable objective of business. Thus, this ratio is of great interest to present as well as prospective shareholders and also of great concern to the management. As is the case for return on assets, the estimate of market value will have a large impact on this ratio. The return on owners' equity of the company should be compared with the ratios for other similar companies. This will reveal the relative performance and also the relative strength of the enterprise in attracting future investments.

Table 3 show a fluctuating trend in the return on shareholders' funds of the selected cement companies. The average return on shareholders' funds of all the selected companies was more than the industry average ratio and statistically significant at 5 per cent level except for Birla Corporation Limited and India Cements Limited. The highest average was 25.20 per cent in Madras Cements Limited followed by Chettinad Cement Corporation Limited (19.54 per cent), Shree Cement Limited (19.45 per cent),Grasim Industries Limited (17.46 per cent), Associated Cement Companies Limited (17.40 per cent), Dalmia Cement Limited (15.90 per cent), Birla Corporation Limited (12.82 per cent) and India Cements Limited (10.11 per cent). The compound annual growth rate of this ratio was positive in the case of Birla Corporation Limited and Shree Cement Limited only. However, it was negative in the case of all other selected companies. The CV value of this ratio shows very high fluctuation in all the selected companies. Further, the mean return on shareholders' funds of all the selected companies except Birla Corporation Limited and India Cements Limited significantly differ from industry mean (t value). The overall fluctuating trend of this ratio can be attributed to the factors like changes in government regulations, tax regimes, economic developments within India and the

countries with which the company conducts business and other factors such as litigation and labour negotiations.

Earnings per share

Apart from the rates of return, the profitability of a company from the point of view of the equity shareholders is the earnings per share. It measures the profit available to the equity shareholders on a per share basis. Many enterprises fix their growth target in terms of growth in earnings per share. Shareholders and financial analyst place considerable emphasis on reported earnings per share and anticipated growth in earnings per share. The earnings per share calculations made over the years indicate whether or not the firm's earning power on per share basis has changed over that period. The earnings per share simply show the profitability of the firm on a per share basis, it does not reflect how much is paid as dividend and how much is retained in the business. But as a profitability index, it is a valuable and widely used ratio. Further, earning per share is a good measure of profitability and when compared with earnings per share of other similar companies, it gives a view of the comparative earnings or earning power of the firm.

Table 3 shows a fluctuating trend in the earnings per share of the selected companies of the Indian cement industry. The average earnings per share varied among companies. The highest average was Rs.275.92 in Madras Cements Limited followed by Grasim Industries Limited (Rs.77.51), Associated Cement Companies Limited (Rs.55.47), Dalmia Cement Limited (Rs.34.39), Shree Cement Limited (23.27 per cent), Chettinad Cement Corporation Limited (17.49 per cent), Birla Corporation Limited (12.81 per cent) and India Cements Limited (8.17 per cent). The average earning per share ratio of all the selected companies was less than the industry average. The compound annual growth rates of these ratios were positive in the case of Birla Corporation Limited, Grasim Industries Limited and Shree Cement Limited. However, it was negative in the case of remaining companies. The CV value of this ratio shows high fluctuation in all the companies during the study period. Further, the mean earnings per share of all the selected companies except Madras Cements Limited significantly differ from industry mean (t value). The overall fluctuating trend of this ratio can be attributed to the factors like profitability position and fluctuations in the market prices of the shares of the company.

Dividend payout ratio

Dividend payout ratio is a major aspect of the dividend policy of a company. It measures the relationship between the earnings belonging to the equity shareholders and the dividend paid to them. A ratio lower than 100 per cent indicates the distribution of a part of reserves by way of dividends. The investors have a marked preference for higher dividend payout ratio. The ratio is a test of the managerial ability and reputation of a company.

Table 3 exhibits a fluctuating trend in the dividend payout ratio of the selected companies of the Indian cement industry. The average dividend payout ratio varied from company to company. The highest average was 54.56 times in Shree Cement Limited followed by Associated Cement Companies Limited (24.63), Dalmia Cement Limited (23.89), Chettinad Cement Corporation Limited (23.85), Grasim Industries Limited (19.84), Birla Corporation Limited (17.89), India Cements Limited (17.49) and Madras Cements Limited (16.58). The average dividend payout ratio of Shree

Cement Limited was more than the industry average ratio and statistically not significant at 5 per cent level except for Grasim Industries Limited. The compound annual growth rate of this ratio was positive in the case of Associated Cement Companies Limited, Dalmia Cement Limited, Grasim Industries Limited and Madras Cements Limited. The CV value of this ratio shows high fluctuation in the case of Grasim Industries Limited and erratic fluctuation in the case of remaining companies. Further, among the selected companies the mean dividend payout ratio of Grasim Industries Limited significantly differs from industry mean (t value).

Analysis of Profitability from the point of view of utilization of assets

The utilization of assets forms the basis for the profitability of a firm. The asset utilization ratio calculates the total revenue earned for every amount of assets a company owns. This ratio indicates a company's efficiency in using its assets. Asset utilization ratios provide measures of management effectiveness. These ratios serve as a guide to critical factors concerning the use of the firm's assets, inventory and accounts receivable collections in day–to-day operations. Asset utilization ratios are especially important for internal monitoring concerning performance over multiple periods, serving as warning signals or benchmarks from which meaningful conclusions may be reached on operational issues.

Total assets turnover

Assets are used to generate sales. Therefore, an industry should manage its assets efficiently to maximize sales. The relationship between sales and assets is called assets turnover. Total assets turnover ratio shows the industry's ability in generating sales from all financial resources committed to total assets. Table 31 exhibits a fluctuating trend in the total assets turnover ratio of the selected companies of the cement industry. The average total assets turnover ratio varied from company to company. The highest average was 1.65 times in the case of Birla Corporation Limited followed by Associated Cement Companies Limited (1.14), Chettinad Cement Corporation Limited (0.85), Grasim Industries Limited (0.84), Shree Cements Limited (0.79), Madras Cements Limited (0.77), Dalmia Cement Limited (0.61) and India cements Limited (0.56). The compound annual growth rate was positive in the case of Associated Cement Companies Limited and Grasim Industries Limited and negative in the case of remaining selected cement companies. The CV value of this ratio shows a fluctuating trend in the case of Associated Cement Companies Limited, Birla Corporation Limited, Dalmia Cement Limited and Grasim Industries Limited and is highly fluctuating in the case of Chettinad Cement Corporation Limited, India Cements Limited, Madras Cements Limited and Shree Cement Limited during the study period. Further, the mean total assets turnover ratio of Associated Cement Companies Limited, Birla Corporation Limited, Dalmia Cement Limited and India Cements Limited significantly differ from industry mean (t value).

Fixed assets turnover

Fixed Assets Turnover ratio has been calculated to determine whether investment decisions have been good or bad in the sense of their efficient utilization. A high ratio will show that the concern is over-trading on its assets, while a low ratio will indicate that excessive investments have been made in the fixed assets. It is also essential that the assets should be effectively utilized to generate sufficient earnings. This ratio is obtained if one divides net sales for a given period by fixed assets used in

the business during that period. In the denominator of this ratio fixed assets are generally taken at written down value at the end of the accounting year. To avoid effects of varying depreciation policies, gross fixed assets may be taken for computing this ratio. Table 4 exhibits a fluctuating trend in the fixed assets turnover ratio of the selected companies of the Indian cement industry. The average fixed assets turnover ratio varied from company to company. The highest average was 1.43 in Birla Corporation Limited followed by Associated Cement Companies Limited (1.34), Grasim Industries Limited (1.21), Shree Cement Limited (1.05), India Cements Limited (0.94), Dalmia Cement Limited (0.90), Chettinad Cement Corporation Limited (0.80) and Madras Cements Limited (0.74). The average fixed assets turnover ratio of all the selected cement companies was less than industry average ratio. In the selected companies only Birla Corporation Limited and Grasim Industries Limited witnessed positive compound annual growth rate of fixed assets turnover ratio. The CV value of this ratio shows high fluctuation in all the selected cement companies during the study period. Further, the mean fixed assets turnover ratio of all the selected companies except Birla Corporation Limited significantly differ from industry mean.

Current assets turnover

Current assets turnover ratio gives an overall impression as to how frequently the investment in current assets is turned over. Funds invested in these assets are often circulating and they eventually become sources of funds for returning current liabilities. This ratio is obtained if one divides net sales for a given period by current assets employed in the business during that period. In the denominator of this ratio, current assets consist of cash available for operation and other assets that are converted into cash or consumed during one year or one normal operating cycle of the business, whichever is longer. Table 4 shows the position regarding the current assets turnover ratio of the selected companies of cement industry. The current assets turnover ratio of all the companies witnessed a fluctuating trend during the study period. The average current assets turnover ratio varied from company to company. The highest average was 13.61 in Associated Cement Companies Limited followed by Birla Corporation Limited (12.40), Chettinad Cement Corporation Limited (8.12), Grasim Industries Limited (6.67), Madras Cements Limited (5.95), Shree Cement Limited (4.42), Dalmia Cement Limited (2.60) and India Cements Limited (2.12). The compound annual growth rate of this ratio was positive in the case of Birla Corporation Limited, Dalmia Cement Limited and Grasim Industries Limited. However the compound annual growth rate of this ratio was negative in the case of Chettinad Cement Corporation Limited, India Cements Limited, Madras Cements Limited and Shree Cement Limited of the selected companies during the study period. The mean current assets turnover ratios of all the selected companies except India Cements Limited significantly differ from industry mean (t value).

Inventory turnover

This ratio indicates the velocity of the movement of goods during the year. Movement or otherwise of goods decides the success or failure of a business concern because it has direct influence on profits of the business. If stocks are accumulated the cost of capital will be more and results ultimately in loss to the business. Hence, every business should maintain enough stock to cope with sales. It is harmful to maintain more stock than required because it unnecessarily blocks the capital, there are chances

of stock becoming obsolete, the cost of capital will be more, slow disposal of stock affects the liquidity position of the concern, there are chances of deterioration in quality of goods and it is a sign of bankruptcy because liabilities of a concern will multiply. Similarly, if the stock maintained is less than required, it is the question of losing business opportunities. Therefore, it is advisable to maintain stock always at optimum level i.e., neither, more nor less.

Table 4 explains the fluctuating trend in the inventory turnover ratio of the selected companies of the cement industry. The average inventory turnover ratio varied from company to company. The highest average was 10.64 times in Shree Cement Limited followed by Madras Cements Limited (10.38), Birla Corporation Limited (10.09), Associated Cement Companies Limited (10.08), Grasim Industries Limited (9.07), India Cements Limited (7.82), Chettinad Cement Corporation Limited (6.95) and Dalmia Cement Limited (3.87). The average inventory turnover ratio of all the selected cement companies except Dalmia Cement Limited was more than the industry average ratio. The compound annual growth rate of this ratio was positive in the case of Associated Cement Companies Limited, Birla Corporation Limited, Grasim Industries Limited, India Cements Limited, Madras Cements Limited and Shree Cement Limited. However, Chettinad Cement Corporation Limited and Dalmia Cement Limited witnessed negative compound annual growth rate. The CV value of this ratio shows high fluctuation in the case of all the selected cement companies except Associated Cement Companies Limited. The mean inventory turnover ratio of all the selected companies except Chettinad Cement Corporation Limited significantly differs from industry mean.

Profitability Analysis - ANOVA results - Comparison

The results of ANOVA for testing the hypothesis of different years and selected companies of the Indian cement industry are presented in Table 5. It is evident from the table that there were significant differences in all the profitability ratios between the years and between the companies except return on capital employed from the point of view of financial management. Similarly, there were significant differences in the net profit margin ratio, return on total assets, return on shareholders' funds between the years and between the companies. In earning per share there were significant differences between the companies but there were no such significant differences between the years. In dividend payout ratio it is witnessed that there were no significant differences between the companies and between the years. Profitability ratios from the point of view of utilization of assets viz., total assets turnover ratio, fixed assets turnover ratio, inventory turnover ratio showed that there were significant difference between the years and between the companies. However, there was no significant difference between the years and between the companies in current assets turnover ratio during the study period.

Conclusion

The profitability of the selected companies measured through operating profit margin ratio is satisfactory and should be adequate to cover the fixed charges during the study period. The overall analysis of return on capital employed ratio showed that this ratio has improved significantly during the study period which was on account of considerable increase in profit margin as well as assets turnover.

Finally**,** it can be inferred that the operating efficiency of the selected companies was satisfactory and the management generally succeeded in investing capital funds. It is concluded from the analysis of interest coverage ratio of the selected companies measured through the interest coverage ratio is satisfactory subject to the variation in coverage. The earnings before interest and tax of all the sample companies are adequate to cover the financial charges of debt and credit facilities. Company wise analysis of interest coverage ratio showed that Grasim Industries Limited and Associated Cement Companies Limited are not taking advantage of 'trading on equity' and are very conservative in using debt and credit facilities as their interest coverage ratios were too high.

The analysis of net profit margin ratio reveals that the cement industry had an average of 3.99 per cent during the study period. However, Associated Cement Companies Limited, Birla Corporation Limited, Chettinad Cement Corporation Limited, India Cements Limited had negative net profit margin ratio which indicated the poor performance. This was despite constraints by way of railway wagon shortages and road transport strikes that affected plants of selected companies during the study period. The analysis of return on total assets ratio depicts that operating assets were effectively utilized in a profitable manner by the selected companies during the study period. The analysis of return on shareholders' funds also reveals that owners funds was utilized profitably by all the selected companies because their average return on shareholders' fund ratio was better than the industry average. It can be concluded that the position regarding earnings per share and dividend payout ratio was good in all the selected companies of the cement industry during period under review highlighting their better performance and prospectus from the point of view of owners. The overall analysis of profitability from the view point of shareholders showed satisfactory. The overall analysis of profitability from the point of view of utilisation of assets was satisfactory. However, the companies have to adopt a sound inventory policy and make efficient use of their assets to improve profitability.

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Table 1
List of sample companies included in the present study

Sl. No.	Companies	Year of Incorporation	Market Share (%)
1	Associated Cement Companies Limited	1936	10.16
2	Birla Corporation Limited	1919	2.69
3	Chettinad Cement Corporation Limited	1962	1.91
4	Dalmia Cement Limited	1951	2.12
5	Grasim Industries Limited	1946	5.42
6	India Cements Limited	1947	9.71
7	Madras Cements Limited	1957	3.32
8	Shree Cement Limited	1979	3.8
	Total		**39.13**

Source: PROWESS Database

Table 2
Analysis of profitability from the point of view of Financial Management

Year	ACCL	BCL	CCCL	DCL	GIL	ICL	MCL	SCL	Industry Average
Operating Margin:									
Mean	16.02	11.47	25.57	24.91	21.69	19.47	27.39	24.17	9.77
CV	16.02	0.78	0.22	0.25	0.22	0.37	0.21	0.29	0.37
CAGR(%)	0.36	6.15	4.00	-0.29	-0.70	2.53	-0.32	4.75	2.50
t value	4.59*	0.84	14.14*	14.18*	11.18*	6.79*	17.2*	9.86*	
Gross Profit Margin									
Mean	11.91	8.24	17.39	17.83	17.41	9.88	20.05	18.76	51.75
CV	0.62	1.19	0.38	0.38	0.34	1.14	0.33	0.48	0.17
CAGR(%)	7.07	10.03	4.33	-0.76	0.88	4.71	-0.52	5.63	2.88
t value	32.99*	30.52*	15.66*	15.76*	23.35*	12.77*	11.96*	21.67*	
Return on Capital Employed									
Mean	18.45	18.4	18.1	14.6	17.9	11.4	19.6	16.3	22.24

		2	6	6	4	9	3	6	
CV	0.66	0.96	0.62	0.40	0.33	0.66	0.53	0.52	0.38
CAGR(%)	4.88	5.45	-13.73	-3.34	1.30	-0.33	-3.34	1.40	-1.98
t value	1.58	0.97	2.28*	6.10*	1.92*	9.31*	2.28*	3.46*	
Interest Coverage ratio									
Mean	8.11	6.71	3.34	2.63	8.14	2.41	4.74	4.14	3.47
CV	1.47	1.39	1.07	0.34	0.96	1.04	1.08	0.93	0.98
CAGR(%)	21.93	19.24	-9.90	-0.35	12.09	9.11	2.10	5.19	7.27
t value	1.86*	1.95*	0.24	1.12	3.51*	2.70*	1.67	1.24	

Source: Computed

Table 3

Analysis of profitability from the point of view of Shareholders

Net profit margin ratio									
Mean	5.90	3.71	6.14	10.05	9.79	3.16	10.49	7.35	3.99
CV	0.97	2.21	0.86	0.49	0.45	3.60	0.61	0.82	1.71
CAGR(%)	4.93	12.19	-1.00	-3.86	-0.59	2.83	-2.44	3.57	6.13
t value	1.86*	0.20	1.47	5.70*	4.71*	0.38	4.63*	2.56*	
Return on Total assets									
Mean	6.48	5.09	6.63	6.32	8.15	3.38	8.66	6.89	4.33
CV	1.01	2.11	1.04	0.54	0.50	1.75	0.80	0.91	1.41
CAGR (%)	3.95	9.66	-1.00	-7.25	1.00	-1.97	-5.45	1.92	3.74
t value	2.41*	0.40	1.67	1.80*	3.37*	0.95	3.48*	2.30*	
Return on Shareholders' funds									
Mean	17.40	12.82	19.54	15.90	17.46	10.11	25.20	19.45	7.29
CV	0.77	1.94	1.00	0.52	0.37	1.41	0.70	0.91	2.23
CAGR(%)	-0.52	5.59	-1.00	-3.09	-1.44	-0.84	-2.48	5.81	1.27
t value	3.60*	1.17	3.56*	3.01*	2.72*	0.95	7.01*	3.39*	

Earnings Per Share									
Mean	55.47	12.81	17.49	34.39	77.51	8.17	275.92	23.27	670.75
CV	1.30	1.31	1.00	0.27	0.82	0.92	0.77	1.83	1.83
CAGR(%)	-7.43	11.13	-100.00	-4.71	10.62	-0.22	-21.52	23.01	8.15
t value	2.78*	2.94*	2.90*	2.80*	2.77*	2.93*	1.73	2.95*	
Dividend payout ratio									
Mean	24.63	17.89	23.85	23.89	19.84	17.49	16.58	54.56	24.84
CV	0.82	1.35	0.79	0.77	0.27	1.02	1.97	1.60	0.43
CAGR(%)	19.46	-8.39	-100.00	15.33	1.83	-3.87	42.85	-8.80	6.67
t value	0.05	0.91	0.16	0.19	1.81*	1.14	1.01	1.41	

Source: Computed

Table 4

Profitability from the point of view of utilization of assets

Total assets turnover ratio									
Mean	1.14	1.65	0.85	0.61	0.84	0.56	0.77	0.79	0.78
CV	0.18	0.16	0.37	0.14	0.13	0.35	0.25	0.27	0.21
CAGR(%)	0.05	-1.75	-3.92	-3.18	2.43	-3.85	-3.50	-1.12	-2.39
t value	6.87*	8.78*	1.25	3.96*	0.95	8.61*	0.32	0.19	
Fixed assets turnover ratio									
Mean	1.34	1.43	0.80	0.90	1.21	0.94	0.74	1.05	1.96
CV	0.25	0.11	0.36	0.13	0.15	0.26	0.27	0.31	0.59
CAGR(%)	-3.10	1.00	-1.86	-1.74	0.28	-3.52	-1.25	-1.79	-7.19
t value	2.68*	1.74	4.26*	3.73*	2.50*	4.02*	4.29*	3.58*	
Current assets turnover ratio									
Mean	13.61	12.40	8.12	2.60	6.67	2.12	5.95	4.42	1.58
CV	0.68	0.62	0.53	0.37	0.52	0.56	0.25	0.46	0.36
CAGR(%)	11.61	0.69	-2.10	0.82	10.56	-1.10	-1.59	-0.63	5.45
t value	5.52*	6.06*	5.84*	5.02*	6.40*	1.40	12.05*	5.71*	
Inventory									

turnover ratio									
Mean	10.08	10.09	6.95	3.87	9.07	7.82	10.38	10.64	6.37
CV	0.08	0.23	0.17	0.34	0.28	0.25	0.21	0.30	0.30
CAGR(%)	0.28	2.66	-0.68	-4.22	3.44	3.19	1.22	4.34	6.80
t value	6.18*	14.38*	0.91	3.28*	8.42*	3.85*	8.13*	6.76*	

Source: Computed

Table 5

ANOVA results-Ratios relating to profitability-Comparison

Profitability ratios		**Between the years**		**Between the companies**	
		F ratio	**H_o- Accepted/ Rejected**	**F ratio**	**H_o - Accepted/ Rejected**
I.	**From the point of view of Financial Management**				
1.	Operating profit margin ratio	12.02	H_o–Accepted	23.09	H_o–Accepted
2.	Gross profit margin ratio	19.06	H_o–Accepted	13.12	H_o–Accepted
3.	Return on capital employed	11.34	H_o–Accepted	2.03	H_o–Rejected
4.	Interest coverage ratio	9.93	H_o–Accepted	3.69	H_o–Accepted
II.	**From the point of view of Shareholders**				
1.	Net profit margin ratio	10.52	H_o–Accepted	5.21	H_o–Accepted
2.	Return on total assets	12.78	H_o–Accepted	2.14	H_o–Accepted
3.	Return on shareholders' funds	13.07	H_o–Accepted	2.76	H_o–Accepted
4.	Earnings per share	1.66	H_o–Rejected	17.09	H_o–Accepted
5.	Dividend payout ratio	0.65	H_o–Rejected	1.54	H_o–Rejected
III.	**From the point of view of utilization of assets**				
1.	Total assets turnover ratio	3.03	H_o–Accepted	49.34	H_o–Accepted
2.	Fixed assets turnover ratio	15.53	H_o–Accepted	43.38	H_o–Accepted
3.	Current assets turnover ratio	1.01	H_o–Rejected	1.57	H_o–Rejected
4.	Inventory turnover ratio	6.39	H_o–Accepted	29.51	H_o–Accepted

Critical value of F at 5 per cent level: 1.79 and 2.10

Source: Computed