SUMMARY OF FINDINGS,
CONCLUSION AND
SUGGESTIONS
CHAPTER VII
SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

7.1. Introduction

Cement is one of the core industries defined under the Industrial Policy Resolutions adopted in the early stage of planning in India. The cement industry has played a pivotal role in reviving up the Indian economy by maintaining an impressive rate of growth during the post-independence period. Its growth implications essentially have to be seen in the larger context of national economy rather than in a regional or sub-regional context. Cement industry's performance is crucial to the economy to the extent of the growth of infrastructure. In the previous chapters, the origin and growth of cement industry and financial performance of the select cement companies relating to liquidity, long term solvency, activity and profitability have been examined. The summary of findings and conclusions drawn on the basis of findings are presented in this chapter. Further, a few practical and workable suggestions to improve the overall financial performance of cement industry are also given.
7.2. Findings

In Chapter I "Introduction and Design of the study" statement of the problem and research design of the study were presented. It also dealt with the review of earlier studies relevant to the topic of the research.

In Chapter II "Origin and Growth of Cement Industry" traced the history and growth of cement industry at national as well as the state level.

Chapter III dealt with the analysis of short term solvency ratios of select units. The inferences deduced from the analysis of short term solvency ratios are summarized below:

The overall picture of current ratio gives a mixed trend. Current ratio >2 may indicate increased holding level in current assets like inventory and receivables. If this is due to increase in the level of receivables, it may be pointer to the bad receivable management policy of the units. There is a significant difference in the current ratio among the select cement companies. Even though all the select cement companies are working under a common economic, political environment every corporate designs and executes the financial policy relating to inventory management and receivable management taking into account the various internal and external factors in which they function. The current ratio of the select companies does not differ significantly over the years. The results of the inter-temporal comparison of cement units during the 10 years period show no significant
difference. Overall economic climate, macro level demand, supply factors and pricing policy may be the major factors that might be attributed to this kind of phenomenon. The variation in the current ratio is found to be high in India Cements (40.70%) followed by Dalmia Cements and the least is registered in Chettinad Cements (17.13%). The overall co-efficient of the industry is 12.89%.

The behaviour of quick ratio generally is expected to be in the line of current ratio. The range of this ratio is 0.55 – 3.91 (times). As in the case of current ratio, quick ratio has also exhibited a mixed trend. The ratio measures the ability of a firm to pay off its short term obligations. Thus a company with a high value of quick ratio can suffer from the shortage of funds if it has slow paying, doubtful and long-duration outstanding debtors. On the other hand, a company with a low value of quick ratio may really be prospering and paying its current obligations in time if it has been turning over its inventories efficiently. Nevertheless, the quick ratio remains an important index of the firm’s liquidity. There is significant difference in quick ratio among companies during the study period. Similar result was also obtained in the case of current ratio. The reasons attributed in the case of current ratio are also applicable for quick ratio. The only difference between these two ratios is with regard to the components of current assets. Inventory of raw material, work in progress and finished goods are omitted in the case of quick assets. In the inter-temporal analysis of quick ratios, we
get the same result as in the case of current ratio. The quick ratio of select units over the years does not show any significant difference. The macro level environment in which these units work might have been the major contributing factors for this trend.

Super quick ratio is found to be in the range of 0.03 to 1.96 times. Like the earlier liquidity ratios, this ratio also shows a mixed trend. This ratio measures the absolute liquidity of a firm. With a view to get an idea about the absolute liquidity of a concern, both accounts receivable and inventory are excluded from current assets and absolute liquid assets such as cash in hand, cash at bank and readily marketable short term securities are taken into consideration. This ratio indicates the low level of cash holdings by the select units. Though cash is considered to be highly liquid asset, from profitability point view it is not worth holding more cash. The inter-firm comparison of this ratio shows significance difference among the select units. Their internal policies would have contributed much to the efficient management of current asset/current liabilities which had an impact on their short term solvency. At the same time, the inter temporal analysis of super quick ratio reveals a different trend. The super quick ratio of the units over study period does not show a significant difference. As said earlier the macro level economic/political/environmental factors might have contributed to this trend.
The inter-relationship among the liquidity ratio also has revealed a mixed trend. The highest positive correlation is between current ratio and quick ratio in India Cements (0.979) followed by TANCEM (0.904) and Madras Cements (0.903). There exists moderate correlation among these ratios in Madras Cements and Dalmia Cements. Similarly, there is a positive correlation between the quick ratio and super quick ratio in Dalmia Cements (0.918) followed by Madras Cements (0.712). The quick ratio is negatively correlated with the super quick ratio in India Cements (-0.299).

Chapter IV dealt with the Long term solvency ratios of select units and the inferences deduced are given below.

Fixed Asset ratio of TANCEM is hovering around the rule of thumb (0.67) which implies the use of long term funds only for investment in fixed Assets. For the rest of the sample units, fixed asset ratio is greater than 1. This implies the investment in fixed asset is financed not only from long term sources like, share capital, debentures, public deposit and term loan from banks, but also by short term sources like advances received from distributors. It appears that the practice of employing short term/medium term obligations as a source of funds for financing fixed assets is a commonly pursued practice of this industry. Even though all the select units are large scale units, they differ in the size and pattern of investment in fixed assets like land, factory building, plant and machinery, trucks, etc. Similarly, there are lot of variations in their long term obligations like net
worth and borrowings. These factors have contributed to a large extent and made this ratio significantly different among the sample units. The inter-temporal analysis reveals the fact that the fixed asset ratio does not differ significantly over the years under study. The size and pattern of investments in fixed asset and net worth and long term borrowings of these units over the years have not undergone significant changes. Further, the dependence of these units on short term/medium term sources to finance the fixed assets is also visibly stable.

Debt equity ratio of Dalmia cements is hovering around the rule of thumb of 1:1. In case of rest of the sample units (except TANCEM) the higher debt equity ratio indicates that they have heavily relied upon outsiders’ funds. Further, this ratio is on the higher side for India Cements (4.25 times during 2002-03). Long term finance from banks has been most commonly used rather than debentures finance. Heavy accumulated loss of TANCEM during the study period resulted in negative net worth which ultimately rendered this ratio zero. Hence, TANCEM has not been considered for analysis of this ratio.

The inter-firm comparison of this ratio reveals that there is a significant difference in the debt-equity ratio among the select cement companies. As the components as well as that of magnitude of net worth as well as outsiders’ borrowings of the sample units vary significantly among
themselves, the Debt equity ratio shows significant variance. The negative ratio of Debt equity ratio of TANCEM and the higher ratio in the case of Indian Cements (4.25) and Chettinad (3.54) would have also contributed to a large extent for this variance. The inter-temporal comparison of the Debt Equity ratio among companies does not show significant difference. This may be due to the following factors viz.

a. All the sample units work in a more or less similar macro/micro economic/political environment.

b. Their heavy reliance on external finance due to it easy availability on soft terms.

The co-efficient of variation of the select cement companies on the whole is 24.05%, which reveals that there is a modest variation in the debt-equity ratio. The variability of Debt – equity ratio of TANCEM cannot be compared with the units as it has recorded a negative Debt equity ratio in 8 out of 10 years under study. As already pointed out, this company had negative net worth on account of accumulated loss during the study period.

TANCEM that has recorded negative net worth (due to heavy amortization of deferred revenue expenditure), has either a very low proprietary ratio or negative proprietary ratio. Anyhow this does not speak well about the long term solvency of this unit. As far as the rest of the units are concerned, India Cement has registered the lowest ratio (0.14) and
Dalmia has registered the highest ratio (0.45). As an overall analysis, it is inferred that say up to a maximum of 40% of the total assets are financed internally and the balance is financed by external sources.

The inter-firm comparison shows a significant difference as the proprietary ratio is influenced by the magnitude of shareholders funds. In the case of TANCEM, this ratio is negative as it has recorded negative net worth in sizable number of years under study. As far as other units are concerned, the ratio is in the range of 0.14 to 0.45. Each unit has a different behavioral pattern of this ratio. Net worth and fixed assets blocks of these units vary significantly which have made this ratio vary significantly when an inter firm comparison is made.

The inter-temporal analysis of this ratio shows no significant difference due to the following reasons:

a. The proprietary ratios of these units do not differ significantly over years, as these units finance their fixed assets block mostly through external finance.

b. The equity capital base of these units as well as fixed assets block remain almost constant over the study period. This can be ascribed as a major reason for this insignificant difference of this ratio over the study period.
The overall co-efficient of variation of the select cement companies is 20.83%, which indicates that there is a modest variation in the proprietary ratio. The average of the proprietary ratio shows an unsatisfactory position over the study period. At an average, more than 60% of the fixed assets are financed through external sources rather than internal equity. As seen under Proprietary ratio, TANCEM which has a negative net worth in seven out of 10 years under study, has managed only through external finance which is evidenced by its solvency ratio greater than 1. Hence, a unit which has met its capital deficiency through external borrowings cannot be considered as solvent one. As far as other units are concerned they have relied heavily upon (up to maximum of 86% in the case of India cements) as external equity to finance the total assets. That Debt equity ratio of this unit has registered the maximum 4.28 times also strengthens this fact. Long term bank finance has been used most prevalently in the industry to finance the total assets. When the share of external equity is larger the long term solvency of the units cannot be considered to be out of danger.

Even though the units under study are working under a particular macro level set up, individually they differ in the asset pattern and pattern of financing of assets. Hence, when an inter-firm comparison is made, behavioral pattern of solvency ratio very significantly differ among companies. This difference is mainly caused by the magnitude of the value of assets as well as the quantum of external finance employed.
The solvency ratio of the select cement companies does not differ significantly over the years. The results of this inter-temporal analysis of solvency ratio give similar results as in the case of proprietary ratio. As the units have heavily relied upon external financing as a major source of financing of their assets, the solvency ratio behaves almost in the same way in all the sample units. Further, the rigid pattern of assets and net worth of these units warranted them to depend mostly on external financing. Hence, though inter firm comparison of solvency ratio does not show any significant difference, inter-temporal analysis shows a significant difference. As TANCEM has negative net worth during the study period, it has not been considered for interpretation. The remaining units are highly geared as they have relied heavily upon long term bank borrowings/debentures. The Inter-company analysis with respect Capital gearing ratio over the study period shows that there exists no significant difference. Except TANCEM, other units have relied upon long term borrowings/debentures and hence, their fixed interest bearing long term obligations are more than their net worth. All these units have traded in equity as they enjoy the benefits of financial leverage. The inter-temporal analysis with respect to Capital gearing ratio shows that there is an insignificant difference over the study period. The borrowing patterns of these units are almost similar over the year which has contributed largely to this kind of trend.
The correlation between the proprietary ratio and debt-equity ratio is negatively significant in the cement companies except TANCEM. There is a high degree of positive correlation between the proprietary ratio and fixed assets ratio (0.881) in India Cements followed by TANCEM (0.764). The capital gearing ratio of the companies except TANCEM is negatively correlated with debt-equity ratio during the study period. There exists a high degree of positive correlation between capital gearing ratio and fixed assets ratio in Chettinad Cements, India Cements and Dalmia Cements, whereas it has been negatively correlated in Madras Cements and TANCEM. The proprietary ratio of the select cement companies has significant association with the capital-gearing ratio. The solvency ratio has negatively correlated with fixed assets ratio, proprietary ratio and capital-gearing ratio in the select cement companies. It has a close positive correlation in India Cements followed by Chettinad Cements.

Chapter V dealt with the Activity ratios namely Stock turnover ratio, Debtors’ turnover ratio, Average collection period, Creditors’ turnover ratio, Average payment period, Working capital turnover ratio, Cash turnover ratio, Total assets turnover ratio, Fixed assets turnover ratio, and Capital turnover ratio of the select companies and inferences deduced are presented below:

The range of stock turnover ratio is 2.17 to 13.71. Madras Cements has recorded a maximum turnover of 13.71 times while Dalmia has
recorded the lowest ratio of 2.17. As there exists no industry norms a comparison has not been made. As the level of activity has a direct impact on the profitability of the firm, the improvement in this ratio is considered as a core area by the firms. Increased level of investment in inventory will affect the turnover and will also fall. Hence firms take all possible efforts to improve their top line as well reducing inventory holdings.

The inter-firm comparison of this ratio shows significant difference among companies. The size of inventory as well as components of cost of goods sold are greatly varying among companies over the years. Hence it is no surprise to see the absence of uniformity. The inter-temporal analysis also shows significant difference over years. During the study period, noticeable variations were found in the level of inventory holding as well as the components of cost of goods sold. Further a static trend in the activity ratio is not a preferred one.

The compound annual growth rate of the select cement companies shows increasing trend over the study period and it is high in TANCEM (6.98) followed by India Cements (5.07). The overall CAGR of sample unit is 4.24 and all the sample units have recorded CAGR almost near overall CAGR.

The Debtors' turnover ratio of sample units is in the range of 2.16 – 44.88. Chettinad Cements has recorded the highest ratio of 44.86 times
whereas TANCEM has recorded the lowest ratio of 2.16 times. Management of receivables is considered as a core area and companies implement credit collection policy at varying levels, in between very light to lenient. When the credit collection policy is lenient it adversely affects the debtors' turnover ratio and results in increase in uncollectible.

The India Cements and TANCEM have registered a negative annual growth rate during the study period. India Cements and TANCEM have registered negative linear annual growth rates. The linear annual growth rate is high (3.02) in Chettinad Cements followed by Madras Cements (2.37). The compound annual growth rate is high in Madras Cements, whereas India Cements and TANCEM have registered negative compound growth rates during the study period.

The average collection period of receivables is a function of credit policy adopted by a firm. A tight credit collection policy will reduce the number of month/days of collection and vice versa. The average collection period of receivables of the sample cement units is in the range of 0.27 - 5.56 months. TANCEM, which has recorded the highest credit policy, has followed a very lenient credit collection policy whereas Chettinad cement has pursued a fairly tight policy, which has made its collection period 0.27 months.
When an inter-firm comparison of collection period of receivable is made, a significant difference is observed. Firms adopt different degrees of collection policy depending upon the market considerations and other related factors. Levels of receivables also vary from firm to firm. Hence, inter firm difference in this ratio is quite acceptable. We get a different result when an inter-temporal analysis is made. Over the years, no significant difference is observed in the average collection period. This suggests that the sample units have followed almost uniform collection policy over the study period.

The range of Creditors' turnover ratio is 0.16 times to 4.33 times. India Cements has recorded the lowest Creditors' turnover ratio (0.16 times), which has moved to a maximum of 1.73 times. But in the case of TANCEM this ratio has recorded a maximum of 4.33 times. A low ratio indicates liberal credit policy of suppliers whereas the high ratio indicate non-availability of liberal credit period firm the suppliers. A low ratio reduces the investment in working capital thereby enhancing the short term liquidity of the firms. In this respect India Cements has enjoyed an advantage over other firms.

The behaviour of Creditors' turnover ratio of sample units shows a mixed trend. The ratio is greatly influenced by the volume of purchase of raw material and magnitude of accounts payable. These components vary from
firm to firm. Hence the inter-firm comparison of this ratio has shown significant difference.

The inter-temporal analysis of this ratio shows a different result. Over the years this ratio shows no insignificant difference. This may be due to the factors like, operations at a specific level of production, plant capacity and requirement of raw material. When there is no sizable expansion of plant capacity their purchase and size of creditors are obviously moving around a specific level.

As creditors' payment period is calculated from Creditors’ turnover ratio, the lower the creditors’ turnover ratio the greater the payment period and vice versa. The payment period is in the range of 1.7 months to 73.48 months. India Cement has enjoyed the maximum payment period. The deferral period is generally on the higher side. All sample units have liberally used trade credit as a major source of working capital and have reduced their working capital requirements to a great extent.

The inter-firm comparison discloses that there is a significant difference in this ratio among the sample units. As said earlier, the volume of purchase of raw materials and spares as well as the magnitude of payables vary among companies and a significant difference is noticeable. The inter-temporal analysis gives a different picture. Over the years, this ratio does not record significant differences. Absence of expansion of plant and
operations at a specific level of production may be the contributory factors for this insignificant difference. The overall co-efficient of variation of the average payment period is found to be 42.74%. TANCEM has the registered highest co-efficient of variation (123.61%) followed by Dalmia Cements (113.74%), and it is least (33.89%) in Chettinad Cements.

Working capital turnover ratio measures the efficiency of a firm in managing and utilizing the working capital to improve its turnover. The higher this ratio, the more efficient is the management and utilization of working capital and lower ratio shows the reverse. Working capital turnover of select units is in the range of 0.90 times to 17.19 times. Chettinad Cement has recorded the highest (17.19 times) and India Cements has recorded the lowest (0.9 times).

Inter firm comparison of Working capital turnover ratio shows significant difference. The variations in the magnitude of turnover as well components of working capital of individual units might have contributed to this difference. Inter temporal analysis also shows significant difference over the years. Both the variables considered for computation of this ratio vary year after year to a significant extent. Further, turnover current assets and current liabilities of firms cannot be expected to remain constant over the years.
The variation in the working capital turnover ratio is found to be high in TANCEM (95.98%) followed by India Cements (57.48%) and it is least in Dalmia Cements (17.15%). The mean of the working capital turnover ratio reveals the inefficiency in the utilization of working capital in Dalmia Cements.

Cash Turnover ratio indicates the efficiency of utilization of liquid cash in generating sales turnover. In the case of India Cements, Re 1 cash has generated sales turnover of Rs 392.60, which is the maximum among the units. But on the other hand, in the case Madras Cements, it has recorded the minimum (Rs 6.37). Cash holding by a firm depends upon many factors. Firms focus upon improving the level of their performance through increase in top line. This ratio looks better in the cases of units which have recorded good turnover. Inter-firm comparison of this ratio shows significant difference. Variation in the volume of sales vis-à-vis cash holding among the sample units is the contributory factor for this kind of difference. Inter-temporal analysis of this ratio has recorded insignificant difference over the study period, which implies that cash holding pattern has been almost same over the years. The overall co-efficient of variation of the cash turnover ratio is found to be 61.70%. India Cements has highest co-efficient of variation (95.34%) followed by TANCEM (47.63%), and the least is 24.60% in Dalmia Cements.
Total Assets turnover ratio is in the range of Re 0.29 to Rs 1.38. This ratio measures the efficiency of a firm in managing and utilizing its assets. The higher this ratio, the more efficient is the management and utilization of the assets while low turnover ratios are indicative of underutilization of a variable resources and presence of idle plant capacity.

There is a significant difference in the total assets turnover ratio among the cement companies. Inter-firm comparison shows significant difference mainly due to the varying volume of turnover and investment in assets. The inter-temporal comparison of this ratio has also recorded significant difference. It seems firms have made continuous efforts to improve their top line over the years.

Fixed Assets turnover ratio is in the range of Re 0.45 to Rs 5.95. TANCEM has recorded the maximum. Higher ratio is indicative of the effective use of fixed assets particularly in the case of manufacturing concerns, in generating sales. Lower ratio indicates underutilization of fixed assets. Firms have to take the lower ratio as a warning signal and to take corrective measures to improve their top line.

Inter-firm comparison of this ratio has received a significant difference. This difference is justified by the varying volume of turnover vis-a-vis size of investment in fixed assets. The inter-temporal analysis of this ratio yields a different result. It has recorded an insignificant difference
over the years. This indicates more or less static volume of turnover and fixed assets of sample units.

Capital turnover ratio is recorded in the range of Re 0.48 to Re 5.80. This ratio shows the sales in rupees generated per rupee of capital employed. Higher ratio indicates the efficiency of utilization of resources at the disposal of a firm and vice versa. The inter-firm comparison of this ratio shows an insignificant difference. Variations in the volume of turnover as well as in the components of capital employed have significantly contributed to this kind of behavior. As the same time, the inter-temporal comparison has shown an opposite result. Over the years, this ratio does not show any significant difference mainly owing to the static capital structure. The stock turnover ratio of the Chettinad Cements has positive correlation with the debtors' turnover ratio, working capital turnover ratio, cash turnover ratio, capital turnover ratio, total assets turnover ratio and fixed assets turnover ratio. The debtors' turnover ratio of the Chettinad Cements has a positive correlation with the working capital turnover ratio, capital turnover ratio, total assets turnover ratio and fixed assets turnover ratio. The working capital turnover ratio of the company has close correlation with the capital turnover ratio, total assets turnover ratio and fixed assets turnover ratio. There is a positive correlation between capital turnover ratio to total assets turnover ratio and fixed assets turnover ratio. The relationship
between total assets turnover ratio and fixed assets turnover ratio of the company is significant.

Creditors' turnover ratio of the Dalmia Cements has positive correlation with the capital turnover ratio, total assets turnover ratio and fixed assets turnover ratio. There is a positive correlation between the capital turnover ratio to total assets turnover ratio and fixed assets turnover ratio in Dalmia Cements.

In India Cements, the debtors' turnover ratio has moderate correlation with the creditors' turnover ratio, capital turnover ratio and total assets turnover ratio. The working capital turnover ratio has moderate correlation with the capital turnover ratio and total assets turnover ratio. The cash turnover ratio of the company has negative correlation with the capital turnover ratio, total assets turnover ratio and fixed assets turnover ratio. The capital turnover ratio of the company has positive correlation with the total assets turnover ratio and fixed assets turnover ratio. There exists a close relationship between total assets ratio and fixed assets ratio.

In Madras Cements, the stock turnover ratio, debtors' turnover ratio, working capital turnover ratio and cash turnover ratio have moderate correlation with the capital turnover ratio, total assets turnover ratio and fixed assets ratio. The total assets turnover ratio of the company has close positive correlation with the fixed assets ratio in Madras Cements. In TANCEM, the creditors' turnover ratio has positive correlation with the
working capital turnover ratio and total assets turnover ratio. There is a positive correlation between debtors’ turnover ratio to capital turnover ratio and to total assets turnover ratio. The relationship between the capital turnover ratio to total assets turnover ratio and to fixed assets turnover ratio is significant. There exists a positive relationship between total assets ratio and the fixed assets ratio of the TANCEM.

The inferences deduced from the least square analysis are given below. The calculated trend value has been in increasing trend in the working capital for Chettinad Cements, Dalmia Cements, Madras Cements, and TANCEM, whereas for India Cements there is a decreasing trend in networking capital. When compared with the reported value, the trend value of working capital of the select companies has differed significantly over the study period. The anticipated trend value of the working capital for the year 2009-10 for Chettinad Cements, Dalmia Cements, India Cements, Madras Cements and TANCEM would be Rs. 84.79 lakhs, Rs. 454.98 lakhs, Rs. 392.64 lakhs, Rs. 167.33 lakhs and Rs. 54.81 lakhs respectively.

Chapter VI dealt with the Profitability ratios namely Gross profit ratio, Net profit ratio, Operating profit ratio, Return on capital employed ratio, Return on shareholders’ funds ratio, and Return on total assets ratio of the select companies and inferences deduce are presented below:

Gross profit ratio is in the range of 1.30% to 48.17%. Industry average of this ratio is in the range of 30% to 40%. TANCEM, which has recorded a
lower Gross profit ratio in sizable number of years, has also incurred gross loss in one year. In the case of other units, Gross profit ratio is hovering around the industry average. Madras Cements, which has recorded the highest turnover ratio (13.7 times) during 2006-07, has recorded the highest Gross profit ratio 48.17%.

The inter-firm comparison of this ratio shows significant difference. As the turnover and cost of goods sold vary significantly among the firms it is no surprise this ratio behaves in such a way. The inter-temporal analysis of this ratio shows similar behaviour. The Gross profit ratio cannot be static over the years. Whenever the firms improve their top line and optimize cost of conversion the Gross profit tends to move upwards. During the period of recession this ratio is likely to fall. Any how volality of this ratio cannot be avoided.

Dalmia and Madras Cements have a track record of Net profit margin over the study period. TANCEM has recorded net loss during 8 years out of 10 years. Though the gross profit ratio of Chettinad and India Cement were above the industrial average of 30%, their net profit ratios are not encouraging. These units have incurred losses in a few years. The combined analysis of Gross profit and Net profit ratios of these units brings out the following inferences:
a. The Gross profit ratio has increased over years but the net profit ratio has remained constant or declined or has not increased as fast as gross profit ratio.

b. This implies the operative expenses of these units have been increasing over the years.

The inter-firm comparison of Net profit ratio shows significant difference. It is quite logical to say firms with different volume of sales, and different operating expenses will have different net profit margins. The inter-temporal analysis also shows significant difference over the years. Firms strive towards improving their top line as well as bottom lines. Hence, sales as well as net profit margins vary over the years.

Operating profit ratio is in the range of 2.49% to 31.14%. TANCEM which has recorded loss during 8 years of the study period is not considered for this analysis. This ratio indicates the operating efficiency or otherwise of the firms. Overall, the operating profit of the units except TANCEM, have been found to be satisfactory. The inter-firm comparison of this ratio shows significant difference, operating expenses vary from firm to firm depending upon their volume of operations. The inter-temporal analysis also yields similar result. Over the year, this ratio has shown a significant difference. The levels of operations as well as operating expense vary over years. Hence this ratio shows significant difference over the years under study.
The return on capital employed is an indicator of the efficiency of utilization of capital to generate after tax profits. In the case of TANCEM this ratio has recorded a maximum of 99.25% during 2002-03 and the rest of the year it is negative. Hence the results of this ratio cannot be considered. In general, the return on capital employed has been found to be a satisfactory level for the rest of the units under study. The inter-firm comparison as well as inter-temporal comparison of this ratio shows insignificant difference. In spite of the fact that the sizes of capital employed as well as profit after tax of these firms vary in absolute terms, they have exhibited insignificant variability among firms and over time.

The Return on shareholders Funds shows a mixed trend. This ratio shows how much after tax profits are generated for each Re 1 contributed by equity shareholders. This ratio is found to be satisfactory in the case of Dalmia and Madras Cements. In case of other units this ratio shows a mixed trend. The inter-firm comparison of this ratio shows insignificant different. This is due to factors like varying profit after tax and equity structure. The same result is obtained when inter-temporal analysis is made. Over the years, equity base of the units remained constant.

It is inferred from the above analysis that the overall co-efficient of variation of the return on shareholders’ funds ratio of select cement companies is 619.06% and it shows the extensive variations within this ratio
over the study period. The variation in the return on shareholders’ funds ratio is found to be negative in India Cements (-1431.01%) followed by TANCEM (-958.85%). In the case of Dalmia it is the lowest (65.82%).

When PAT is expressed as a percentage of total assets of a firm one can judge the extent of utilization of assets in revenue generation. Madras Cements has recorded the highest ratio of 15.68%. As there are no industry norms for this ratio, it is very difficult to make any value judgment about this ratio.

The inter firm as well as inter temporal analysis of this ratio shows significant difference. This is mainly due to the different levels of after tax profit as well as total assets. Even though the total assets of the sample units are relatively stable over the years, the levels of after-tax profit vary over the years as well as from firm to firm.

The analysis of co-efficient of variation is employed to assess the stability in the return on total assets ratio of the select cement companies. The variation in the return on total assets ratio of the select cement companies altogether is 231.17%, which shows wide fluctuations within this ratio of the companies during the study period. It is found to be high in India Cements (364.17%) followed by TANCEM with a negative value of (154.17%) and least is in Dalmia Cements (49.88%).
The inferences brought out from the multiple regression analysis are presented below:

There is a high degree of correlation between net profit ratio and selected activity ratios of the select cement companies except TANCEM. The R square value indicates that 82.6% variation in net profit ratio in Chettinad Cements, 88.8% variation in net profit ratio in Dalmia Cements, 88.4% variation in net profit ratio in India Cements, 86.90% variation in net profit ratio in Madras Cements and 56.6% variation in net profit ratio in TANCEM have been explained by all independent activity ratios altogether. However, F values indicate that the multiple correlation co-efficient are significant at 5% level only for Dalmia Cements and India Cements. The net profit ratio is significantly affected by debtors’ turnover ratio \( b=1.341 \) in Chettinad Cements, creditors’ turnover ratio \( 2.387 \) in Dalmia Cements, stock turnover ratio \( b=9.638 \) in India Cements and debtors turnover ratio \( b=0.537 \) in Madras Cements.

That there is a high degree of correlation between operating profit ratio and selected activity ratios of the cement companies except TANCEM. The R square value indicates that 67.9% variation in operating profit ratio in Chettinad Cements, 87.6% variation in operating profit ratio in Dalmia Cements, 81.7% variation in operating profit ratio in India Cements, 96.4% variation in operating profit ratio in Madras Cements and 53% variation in
operating profit ratio in TANCEM have been explained by all independent activity ratios altogether. F value indicates that the multiple correlation coefficients are significant at 5% level only for Madras Cements. It is inferred that the operating profit ratio is significantly affected by creditors turnover ratio \( b=3.564 \) and working capital turnover ratio \( b=15.234 \) in Dalmia Cements, and debtors turnover ratio \( b=0.710 \), creditors turnover ratio \( b=-1.584 \), working capital turnover ratio \( b=-2.534 \) and cash turnover ratio \( b=0.612 \) in Madras Cements.

That there is a high degree of correlation between return on capital employed ratio and selected activity ratios of the cement companies except TANCEM. The R square value indicates that 97.2% variation in return on capital employed ratio in Chettinad Cements, 88.2% variation in return on capital employed ratio in Dalmia Cements, 85.1% variation in return on capital employed ratio in India Cements, 95.3% variation in return on capital employed ratio in Madras Cements and 56.4% variation in return on capital employed ratio in TANCEM have been explained by all independent activity ratios altogether.

There is a high degree of correlation between return on shareholders’ funds ratio and selected activity ratios of the cement companies. The R square values indicate that 90.7% variation in return on shareholders’ funds ratio in Chettinad Cements, 92.1% variation in return on shareholders’ funds ratio in Dalmia Cements, 90.3% variation in return on shareholders’
funds ratio in India Cements, 95.5% variation in return on shareholders' funds ratio in Madras Cements and 84.3% variation in return on shareholders' funds ratio in TANCEM have been explained by all independent activity ratios altogether.

There is a high degree of correlation between return on total assets ratio and selected activity ratios of the cement companies. The R square values indicate that 97.3% variation in return on total assets ratio in Chettinad Cements, 94.9% variation in return on total assets ratio in Dalmia Cements, 87.1% variation in return on total assets ratio in India Cements, 94.6% variation in return on total assets ratio in Madras Cements and 62.1% variation in return on total assets ratio in TANCEM have been explained by all independent activity ratios altogether.

The inferences deduced from Altman's Z score analysis are given below:

The average Z score of the Chettinad Cements, India Cements and Madras Cements is 3.00 and above, there is no probability of becoming bankrupt, whereas the average Z score of the Dalmia Cements and TANCEM is 2.10 and 2.05 respectively. It indicates that Dalmia Cements and TANCEM are in the "grey area". This means that it could be financially distressed. In the years 1999-2000 and 2003-04 to 2006-07, Chettinad Cements was in the region of "no threat". It indicates the financial soundness of the company. In the years, 2001-02 and 2006-07, Dalmia
Cements was in a position of becoming bankrupt. However, during the rest of years, the company was in the "grey area", where it was financially distressed. During 1998-99 and 2004-05 to 2006-07, the India Cements was financially strong, whereas 2001-02 to 2002-03, it was in a position of becoming bankrupt. The Madras Cements was financially strong over the study period. TANCEM was in a position to become bankrupt during 1999-2000 to 2001-02, whereas in the years 1999-2000 and 2002-03 to 2006-07 the company was in the "grey area", where it was financially troubled.

7.3. Conclusion

On the basis of above findings the following broad conclusions are drawn on the financial health or otherwise of the select Cement units in Tamilnadu.

1. Short term solvency/liquidity ratios as well as the interrelationship among them had exhibited a mixed trend. Even though the actual ratios were more than 'rule of thumb’ this could not be viewed as an indicator of their short term solvency positions. Holding excessive inventory than required and burgeoning level of accounts receivable were found to be major contributing factors for this trend. Activity ratios like Stock turnover, debtors turnover and collection period have also provided additional proof for this conclusion. Excessive investment in such current assets has ultimately dampened the return on investment too.
2. Long term solvency ratios have indicated that the sample units have financed their fixed assets not only from long term sources but also from short term sources like advances from distributors. It appears that the practice of employing short term obligations as a source of funds for financing fixed assets is a commonly pursued practice of the industry. This has been supported by the higher debt equity ratio of these units. Further, units have relied very heavily upon bank finance rather than funding through bonds. It may not be out of place to point out that these units are highly geared. Proprietary ratio also has revealed that a maximum of 40% of the total assets were financed by equity and the rest by external sources. When the share of external equity is larger, the long term solvency of these units cannot be considered to be satisfactory. Further, the long term ratios do not differ significantly when an inter-firm comparison is made.

3. Analysis of activity ratios has disclosed the excessive level of inventory and accounts receivable and greater reliance on suppliers’ credit. Excessive inventory level has adversely affected the profitability ratios as well as ROI. Burgeoning level of accounts receivable has evidence of the lenient credit policy pursued by them. Higher working capital ratio has indicated the fact of optimum utilization of the various components. Nevertheless, the total assets turnover of the units is not on the higher side. This ratio measures the efficiency or otherwise of firms in managing and utilizing assets in an optimum way. And hence, low levels of assets
turnover ratio of the sample units are indicative of underutilization of available resources and presence of idle capacity. In operational terms it implies these firms could expand their level of activity without additional capital investment.

4. Gross profit ratio of these units is found to be hovering around 30%. Nevertheless the satisfactory gross profit ratio, the net profit ratio over the years has either remained static or declined which implies the soaring operating expenses. High degree of correlation between net profit ratios and select activity ratio has also been found. Decline in operating profit has consequently affected the ROI of the firms.

5. From the Altman’s Z score analysis it is found that Dalmia cements and TANCEM are in the ‘grey area’ during the study period which implies these firms could be financially distressed. This predicts the ill-financial health of these two firms.

7.4. Suggestions

The following suggestions are made with a view to improve the financial performance viz a viz financial health of the select cement units.

1. Excessive inventory holdings which have rendered the current ratio greater than the ‘rule of thumb’ should be reduced to the level of industry average. As excessive inventory adds to carrying cost which has
eaten away sizable portion of their operating profits, firms have to address their problem with a very serious care and concern. Firms may adjust their production schedules in such a way to match the sales cycle. Efforts are also needed to improve their top line.

2. Lenient credit policy has manifested in excessive investment in accounts receivable. The investment in accounts receivable involves a capital costs as funds have to be raised by firms to finance them till customers pay their dues. Further, the excessive trade debt is fraught with the imminent risk of uncollectible which once again dampen the operating profit. Hence with a view to reduce the investment in accounts receivable, firms should tighten their credit standards so as to curtail the extension of liberal credit. Firms should be careful in credit rating and credit references of their customers. Credit sales may be confined to such customers who are prompt in payments. Further, firms must decide the average collection period in advance. Of course, tightening of credit standards may result in fall in sales and accounts receivables. But at the same time this may bring about a fall in collection costs and carrying costs of receivables.

3. As the firms have relied very heavily on bank finance/external borrowings, the debt-equity ratio is found to be on the higher side. A high proportion of debt in the capital structure would lead to inflexibility in the operations of the firm as creditors would exercise pressure and interfere in
management. Further, excess debt is a serious concern with interest burden which has contributed to the deterioration of the financial health of the firms in question. What is needed is a ratio which strikes a proper balance between debt and equity. Hence the capital structure/mix of these firms may be reengineered in such a way as to have an ideal mix of debt and equity.

4. Proprietary ratio has also revealed that an average of 40% of the fixed assets have been financed through equity and the rest by external funds. With a view to reduce the debt component in the capital mix, the firms may consider increasing the proportion of shareholders equity (both equity and preference share capital) in their overall capital structure. The equity base of the firms studied has been found to be static over the study period. Hence these firm's have a dire need for improving their equity component thereby, reducing their dependence on fixed-income bearing external finance.

5. Firms which are found to be in the ‘Grey Area’ whose financial health is anticipated to distress may improve their position by resorting to the following corrective/preventive measure in a phased manner:

a. Utilization of idle capacity

b. Rescheduling the production schedule so as to match it with sales cycle

c. Tightening credit policy, terms and standards
d. Finding new markets so as to improve the top line by fixing attainable targets

e. Widening the equity base thereby reducing the overdependence on debt component

f. Overall austerity measures to reduce the operating and financing expenses

g. Sustaining the measures initiated to improve the financial health over a relatively long period.

7.5. Scope for Further Study

The main focus of the present study is on the liquidity position, long term solvency and indebtedness, activity parameters and profitability of the select cement companies in Tamilnadu. A separate study can be undertaken for further research into the potential areas in cement companies. A study can be conducted to find out the major causes for the reducing profitability of the cement companies and to suggest remedial measures to overcome them. A comparative study of the working capital management of public and private sector cement companies can also be conducted. It will definitely help to understand the peculiar problems encountered by the cement companies. A study can also be conducted to assess the productivity of the cement companies.