A Study on Long-Term Solvency of Select Cement Industries in Tamilnadu

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Introduction

Cement is one of the most sensitive industrial products in a country. Indian cement industries planned to expand their industries in two or three years but failed to implement them due to current inflation and other crisis. It is estimated that India's per capita consumption of cement is the lowest among the world countries. By raising demand for cement, India's infrastructure and real estate sectors are booming. India is expected to need about $350 billion over the next five years to invest in infrastructure, primarily highways, airports, ports and power plants. About $10 billion is to be invested in enhancing capacities to product cement by 10 metric tonnes over the next 5 years. Indian cement industries have also planned to develop this sector and to increase production. Because of the high inflation rate now prevailing and the high cost of 13 raw materials, all these measures were prevented by heavy debt interest at no expense. A big setback is not only political reasons, but other factors such as clearing heckles in securing the land where the cement factory will be built. Strong stock-exchange declines often hamper the funds needed for their expansion. In recent years, Cement prices are high because of the factors like high government duties and taxes, and fragmentation of the industry, excise duties, sales and other local taxes, and limestone royalties add up to nearly half the cost of ex-factory cement prices. In addition to this, power prices are also increasing and costly captive power units have to be installed by cement firms in several states, as the state power supply is unpredictable and unreliable.

Cement industry requires support from three major sectors, namely coal, power and transportation. The industry consumes about 14 million tonnes of coal and 7 billion units of power. On an average, energy occupies 40 per cent of the cost of cement. Acute power shortages, low coal quality and insufficient transport facilities have occurred in this sector. The lack of certain inputs kept the sector from using its full potential. For the cement industry, continual technical upgrading and assimilation of the new technology is necessary. The implementation of advanced technology has greatly helped the industry to save energy and fuel and to dramatically save materials. Therefore, cement industries require finance. Finance is the nerve centre and life line of their economic activity. It plays an extremely crucial role in the continuity and growth of a cement business. The present study aims to analyse the long-term solvency position of select cement industries in Tamil Nadu.

Review of literature

Vaijayanthimala, P., & Vijayakumar, A. (2014)[1] purposed to obtain a true insight into the

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[1]Vaijayanthimala, P., & Vijayakumar, A. (2014). Analysis of Operating Performance of Indian Cement Industry. *International Journal of Innovative Research and Development*, Vol.*3, No.* 5, pp. 88-92.

operating performance of the selected cement companies in India. However the specific objective of the study is to analyze the trends of production, capacity utilization, sales and market share of selected companies of Indian cement industry. It is observed that all the selected companies revealed fluctuating trend of production, capacity utilization and market share during the study period. **Manjula Devi, B., &Sabarinathan, K. (2015)[2]** studied the solvency position of the select cement industries. The cement industry is the second most consumed material on the planet. The cement companies have seen a net profit growth rate of 85 per cent. Both long term and short-term solvency ratios prove the solvency position and efficiency of the select companies. The financial positions of the selected cement companies are satisfactory. **Hajihassani, V. (2015)[3]** studied Multi-criteria decision making methods is called Copeland method. Criteria are liquidity, profitability, activity, financial leverage and growth. Aim of this research is the study of factors affecting on the performance of Cement industry based on Copeland method. So the growth, profitability, liquidity, financial leverage, activity have an impact on the performance of Cement companies. We from research conclude that based on implemented ranking, Azar Shahr and Ardabil lime Cement industry has the first rank. **Venkatacham, R., &Kasthuri, V. (2016)[4]** studied financial performance of the cement industry in India. The present study is an attempt to evaluate the financial performance of Cement Industry of India through financial ratios and other financial and statistical tools and techniques have also been applied in order to check the overall financial position of the company. **Sumathi, N.,& Jothi, K., (2016)[5]** studies financial performance of ultrtech cement and OCL India Ltd. India is the second largest producer of cement in the world. Cement production increased at a compound annual growth rate (CAGR) of 9.7 per cent in the period 2006– 2013, producing 272 million tonnes (MT). In this study the author, select two companies. UltraTech Cement is the largest cement company in India and amongst the leading producers of cement globally. In the early fifties OCL has installed four numbers of Ball mills of FL Smidth for cement grinding purpose. For the result Comparative analysis both the companies must improve their short-term solvency position.

Methodology

Data Sources

The present study is mainly based on secondary data. The secondary data were collected from the annual reports, journals, periodicals, websites and officials of the select cement industries.

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[2]Manjula Devi, B., &Sabarinathan, K. (2015). A Study on Financial Performance of Cement Industries in Tamilnadu with Reference to Select Cement Companies. International Journal of Research in Management and Technology, Vol.5, No.1, pp.224-229

[3]Hajihassani, V. (2015). Investigate Factors affecting on the Performance of Cement Industry based on Copeland Method. Indian Journal of Science and Technology, Vol.8, No.9, pp.45-48.

[4]Venkatacham, R., &Kasthuri, V. (2016). A study on financial performance of cement industry in India. IJAR, Vol. 2, No.9, pp.778-780.

[5]Sumathi, N.,& Jothi, K., (2016). A Study on Financial Performance of Cement Companies in India With Reference to Ultratech Cement Limited and OCL India Limited – A Comparative Analysis. Vol.4, No.4, pp.147-150.

Period of the study

The study period is confined to ten years started from the financial year 2009-10 to 2018-19and necessary data were collected from the industries.

Formation of the Sample Selection

Out of the eight cement industries in Tamil Nadu, Three cement industries have been taken into account for this study. The four private sector companies are

• Dalmia Cement (Bharat) Limited,
• The India Cements Limited,
• Ramco Cements Limited,

Frame work of analysis

In this study, the particulars regarding material consumed, production, total inputs, value added gross output, sales, capital structure, fixed assets and all other financial variables were obtained from the annual reports of the respective companies. The various financial and statistical parameters are used in this study for the purpose of detailed analysis. The financial parameters are Turnover Ratios, Profitability Ratios, and Financial Ratios. The simple statistical tools like mean, standard deviation, co-efficient of variation, annual compound growth rate are also calculated.

Scope of the Study

This study will be undertaken to assess the Financial Performance of Select Cement Industrial Units in Tamilnadu. The proposed study is to be confined only to three cement companies, namely India Cements Limited, Ramco Cements Limited, and Dalmia Cement (Bharat) Limited. The study will focus its attentions on short and long-term solvency, profitability and liquidity of the select company.

Result and Discussion

The solvency is nothing but the state of a company being able to service its debt. The long-term solvency refers to the ability of a company to service its long-term debt. Solvency is a necessary condition for a business to operate. If a company is unable to meet its obligation, it is said to be insolvent and must undergo bankruptcy in order to either liquidate or restructure.

Long-term Debt to Equity (LTDEQ) Ratio

The long-term debt to equity ratio expresses the relationship between long-term capital contributions of creditors as related to that contributed by owners (investors). This ratio expresses the degree of protection provided by the owners for the long-term creditors. A company with a high long-term debt to equity is considered to be highly leveraged, leading to risk of solvency. The formula for calculating the ratio is:

$$Long\,Term\,Debt\,to Equity\ Ratio = \frac{Long\,Term\,Debt}{Owners'Fund}$$

Table 1 Long-term debt to Equity Ratios of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	1.02	2.24	1.79
2010-11	0.81	2.89	2.78
2011-12	0.81	4.25	2.62
2012-13	0.81	1.50	2.10
2013-14	1.39	1.56	2.06
2014-15	1.60	0.88	1.53
2015-16	1.35	0.93	1.02
2016-17	1.38	0.55	1.71
2017-18	1.84	0.55	1.95
2018-19	2.07	0.52	1.65
Mean	1.31	1.59	1.92
SD	0.45	1.22	0.51
CV	34.06	77.12	26.76
CAGR	10.45	-20.16	-4.62

Table 1 presents the long-term debt to equity ratios of select cements company.

Dalmia Cement

The mean value of long-term debt to equity ratio is 1.31, which is found moderate among the sample cement company. The coefficient of variation and CAGR is 34.06 percent and 10.45 percent respectively. It shows that moderate inconsistent compared to the other sample company and highly positive growth of debt over the sample period. It implies that the company gathered more debt fund to finance the company activities.

India Cement

The mean value of long-term debt to equity ratio is 1.59, which is found moderate among the sample cement company. The coefficient of variation and CAGR is 77.12 percent and -20.16 percent respectively. It shows that highly inconsistent compared to the other sample company and highly negative growth of debt over the sample period. It indicates that the company relies more on equity finance for their activities.

Ramco Cement

The mean value of long-term debt to equity ratio is 1.92, which is found highest among the sample cement company. The coefficient of variation and CAGR is 26.76 percent and -4.62 percent respectively. It shows that lowest inconsistent compared to the other sample company and have negative growth of debt over the sample period. It indicates that the company consistently reduces the debt fund in their capital.

Total Debt to Equity (TDEQ) Ratio

The total debt to equity ratio or simply called as debt-equity ratio is a measure of a company's financial leverage which expresses the relationship between total liabilities (total debt) and owners' fund, i.e., share holders' equity. This ratio expresses the degree of protection provided by the owners for both long-term and short-term creditors.

Generally, any company that has a debt to equity ratio of over 40 to 50 per cent should be looked at more carefully to make sure there are no liquidity problems. A company with a high debt-equity along with low or negative working capital as well as with low current / quick ratios is an indication of financial weakness and high risk of solvency. The ratio is calculated as follows:

$$\text{Total Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Owners' Fund}}$$

Table 2 Total Debt to Equity (TDEQ) Ratio of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	1.09	2.46	1.97
2010-11	0.86	3.05	3.11
2011-12	0.85	4.79	2.98
2012-13	0.87	1.60	2.50
2013-14	1.46	1.71	2.42
2014-15	1.67	1.03	1.91
2015-16	1.40	1.05	1.28
2016-17	1.43	0.63	1.91
2017-18	1.89	0.64	2.13
2018-19	2.13	0.62	1.82
Mean	1.37	1.76	2.20
SD	0.45	1.34	0.56
CV	32.69	76.35	25.35
CAGR	9.95	-19.22	-4.65

Table 2 presents the total debt to equity ratios of select cements company.

Dalmia Cement

The mean value of total debt to equity ratio is 1.37, which is found moderate among the sample cement company. The coefficient of variation and CAGR is 32.69 percent and 9.95 percent respectively. It shows that moderate inconsistent compared to the other sample company and has positive growth of debt over the sample period. It implies that the company gathered more debt fund to finance the company activities.

India Cement

The mean value of total debt to equity ratio is 1.76, which is found moderate among the sample cement company. The coefficient of variation and CAGR is 76.35 percent and -19.22 percent respectively. It shows that highly inconsistent compared to the other sample company and highly negative growth of debt over the sample period. It indicates that the company relies more on equity finance for their activities.

Ramco Cement

The mean value of total debt to equity ratio is 2.20, which is found highest among the sample cement company. The coefficient of variation and CAGR is 25.35 percent and -4.65 percent respectively. It shows that lowest inconsistent compared to the other sample company and have negative growth of debt over the sample period. It indicates that the company consistently reduces the debt fund in their capital.

Long-term Debt to Total Assets (LTDTA) Ratio

This ratio provides a general measure of the financial position of a company, including its ability to meet financial requirements for outstanding loans. A year-over-year decrease in this metric would suggest the company is progressively becoming less dependent on debt to grow their business. Use of this ratio helps identify the share of funds borrowed from external sources on long-term basis used in the capital. The calculation of the long term debt to total assets ratio is:

$$LongTermDebt\ toTotalAssetsRatio = \frac{LongTermDebt}{TotalAssets}$$

Table 3 Long-term Debt to Total Assets (LTDTA) Ratio of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	0.46	0.61	0.59
2010-11	0.41	0.66	0.66
2011-12	0.42	0.67	0.65
2012-13	0.41	0.56	0.59
2013-14	0.51	0.55	0.59
2014-15	0.52	0.42	0.51
2015-16	0.46	0.44	0.43
2016-17	0.49	0.30	0.57
2017-18	0.55	0.30	0.61
2018-19	0.61	0.29	0.56
Mean	0.48	0.49	0.57
SD	0.07	0.15	0.07
CV	13.61	31.61	11.65
CAGR	3.55	-10.04	-1.62

Table 3 presents the long-term debt to total asset ratios of select cements company.

Dalmia Cement

The mean value of long-term debt to total asset ratio is 0.48, which is found least among the sample cement company. The coefficient of variation and CAGR is 13.61 percent and 3.55 percent respectively. It shows that moderate inconsistent compared to the other sample company and has positive growth of long term debt over the sample period. It implies that the company gathered more long term debt fund to finance the company activities.

India Cement

The mean value of long-term debt to total asset ratio is 0.49, which is found slightly higher than Dalima cement company. The coefficient of variation and CAGR is 31.61 percent and -10.04 percent respectively. It shows that highly inconsistent compared to the other sample company and highly negative growth of long term debt over the sample period. It indicates that the company relies more on equity finance for their activities.

Ramco Cement

The mean value of long-term debt to total assets ratio is 0.57, which is found highest among the sample cement company. The coefficient of variation and CAGR is 11.65 percent and -1.62 percent respectively. It shows that lowest inconsistent compared to the other sample company and have negative growth of debt over the sample period. It indicates that the company consistently reduces the debt fund in their capital.

Total Debt to Total Assets (TDTA) Ratio

The total debt to total assets is used to assess the financial risk (solvency) of the company. It gives an idea about what extent a firm has used debt fund to finance their assets. The lower the ratio is considered to be better for the firm and highly solvent. The calculation of this ratio is give below:

$$Total Debt\ to\ Total\ Assets\ Ratio = \frac{Total Debt}{Total Assets}$$

Table 4 Total Debt to Total Assets (TDTA) Ratio of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	0.49	0.67	0.64
2010-11	0.43	0.69	0.74
2011-12	0.44	0.76	0.74
2012-13	0.44	0.6	0.7
2013-14	0.53	0.61	0.69
2014-15	0.54	0.49	0.64
2015-16	0.48	0.49	0.54
2016-17	0.5	0.35	0.63
2017-18	0.57	0.35	0.66
2018-19	0.62	0.35	0.62
Mean	0.51	0.54	0.66
SD	0.06	0.15	0.06

CV	12.27	28.72	9.23
CAGR	3.08	-8.98	-1.65

Table 4 presents the Total debt to total asset ratios of select cements company.

Dalmia Cement

The mean value of total debt to total asset ratio is 0.51, which is found least among the sample cement company. The coefficient of variation and CAGR is 12.27 percent and 3.08 percent respectively. It shows that moderate inconsistent compared to the other sample company and has positive growth of total debt over the sample period. It implies that the company gathered more debt fund to finance the company activities.

India Cement

The mean value of total debt to total asset ratio is 0.54, which is found slightly higher than Dalima cement company. The coefficient of variation and CAGR is 9.23 percent and -8.98 percent respectively. It shows that highly inconsistent compared to the other sample company and highly negative growth of debt over the sample period. It indicates that the company relies more on equity finance for their activities.

Ramco Cement

The mean value of total debt to total assets ratio is 0.66, which is found highest among the sample cement company. The coefficient of variation and CAGR is 11.65 percent and -1.65 percent respectively. It shows that lowest inconsistent compared to the other sample company and have negative growth of debt over the sample period. It indicates that the company consistently reduces the debt fund in their capital.

Shareholders' Equity to Total Assets (SHETA) Ratio

The shareholders' equity to assets ratio indicates the finance and profitability of the company. It shows what proportion of total assets is financed by shareholders' fund (equity + reserves and surplus). This is same as proprietary ratio. A low equity to assets ratio means much of the business is financed by loans, or non-equity shares, whereas a high equity to assets ratio means that most or all of the long-term capital is equity. Under the same conditions, the more higher, the better, it shows the good finance and profitability.

The formula for calculating the ratio is given below.

$$Shareholders' Equity \ to Total Assets Ratio = \frac{Shareholers' Fund}{Total Assets}$$

Table 5 Shareholders' Equity to Total Assets (SHETA) Ratio of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	0.45	0.27	0.33
2010-11	0.50	0.23	0.24
2011-12	0.51	0.16	0.25
2012-13	0.51	0.37	0.28
2013-14	0.37	0.36	0.28
2014-15	0.33	0.48	0.33
2015-16	0.34	0.47	0.42
2016-17	0.35	0.55	0.33
2017-18	0.30	0.54	0.31
2018-19	0.29	0.56	0.34
Mean	0.40	0.40	0.31
SD	0.09	0.14	0.05
CV	22.45	35.98	16.93
CAGR	-6.25	12.68	3.14

Table 5 presents the shareholder equity to total asset ratios of select cements company.

Dalmia Cement

The mean value of shareholder equity to total asset ratio is 0.51, which is found least among the sample cement company. The coefficient of variation and CAGR is 12.27 percent and 3.08 percent respectively. It shows that moderate inconsistent compared to the other sample company and has positive growth of total debt over the sample period. It implies that the company gathered more debt fund to finance the company activities.

India Cement

The mean value of shareholder equity to total asset ratio is 0.54, which is found slightly higher than Dalima cement company. The coefficient of variation and CAGR is 9.23 percent and -8.98 percent respectively. It shows that highly inconsistent compared to the other sample company and highly negative growth of debt over the sample period. It indicates that the company relies more on equity finance for their activities.

Ramco Cement

The mean value of shareholder equity to total asset ratio is 0.66, which is found highest among the sample cement company. The coefficient of variation and CAGR is 11.65 percent and -1.65 percent respectively. It shows that lowest inconsistent compared to the other sample company and have negative growth of debt over the sample period. It indicates that the company consistently reduces the debt fund in their capital.

Interest Coverage Ratio

This ratio is used to determine how easily a company can pay interest on outstanding debt. The lower the ratio, the more the company is burdened by debt expense and with high solvency risk. At the same time, if company's interest coverage ratio is lower, its ability to meet interest expenses may be questionable, in turn indicating that the company is not generating sufficient revenues to satisfy interest expenses and may become insolvent in the near future. The lower the ratio, the more the company is burdened by debt expense and the greater the possibility of bankruptcy or default. When a company's interest coverage ratio is only 1.5 or lower, its ability to meet interest expenses may be questionable. It is calculated as:

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings Before Interest and Tax}}{\text{Interest Expense}}$$

Table 6 Interest Coverage Ratio of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	2.11	1.27	1.83
2010-11	2.19	0.96	1.51
2011-12	1.91	0.19	1.34
2012-13	2.13	0.30	2.06
2013-14	2.59	1.03	2.58
2014-15	5.64	1.34	4.18
2015-16	6.49	4.28	20.75
2016-17	4.84	8.69	12.76
2017-18	2.77	6.78	5.93
2018-19	2.16	4.72	4.50
Mean	3.28	2.92	5.74
SD	1.70	3.03	6.28
CV	51.86	103.66	109.26
CAGR	6.66	31.12	24.61

Table 6 presents the interest coverage ratios of select cements company.

Dalmia Cement

The mean value of interest coverage ratio is 3.28, which is found moderate among the sample cement company. The coefficient of variation and CAGR is 51.86 percent and 6.66 percent respectively. It shows that least inconsistent compared to the other sample company and has positive growth of interest coverage over the sample period. It implies that the company's ability to meet interest expenses may be questionable.

India Cement

The mean value of interest coverage ratio is 2.92, which is found least among the sample company. The coefficient of variation and CAGR is 103.66 percent and 31.12 percent respectively. It shows

that highly inconsistent compared to the other sample company and highly positive growth of interest coverage over the sample period. It indicates that the company interest burden increases day by day.

Ramco Cement

The mean value of interest coverage ratio is 6.28, which is found highest among the sample cement company. The coefficient of variation and CAGR is 109.26 percent and 24.61 percent respectively. It shows that lowest inconsistent compared to the other sample company and have positive growth of interest over the sample period. It indicates that the company has high solvency risk among the sample company.

Reserves to Capital Ratio

The reserves to capital ratio is used to establish the relationship between reserves fund and paid up equity capital. The higher proportion of reserves relative to paid up capital for a company reveals the financial soundness of the company because the company shall be able to meet future losses as and when suffered. Further, the company can grow, expand and diversify its business as and when it desires to do so if the reserves to capital is higher. The calculation of this ratio is based on the formula given below.

$$\text{Reserves to Capital Ratio} = \frac{\text{Reserves and Surplus}}{\text{Paid up Equity Share Capital}}$$

Table 7 Reserves to Capital Ratio of select Cement Company

Year	DALMIA Cement	INDIA Cement	RAMCO Cement
2009-10	32.94	3.93	32.58
2010-11	42.97	2.79	20.91
2011-12	43.69	1.56	21.31
2012-13	44.82	7.32	23.23
2013-14	46.01	6.8	26.72
2014-15	54.98	7.08	31.55
2015-16	87.13	7.48	54.16
2016-17	69.94	10.78	79.16
2017-18	77.33	11.86	51.95
2018-19	84.09	12.46	64.47
Mean	58.39	7.21	40.6
SD	19.52	3.72	20.47
CV	33.43	51.6	50.4
CAGR	10.9	20.15	14.11

Table 7 presents the reserves to capital ratios of select cements company.

Dalmia Cement

The mean value of reserves to capital ratios is 58.39 which is found highest among the sample cement company. The coefficient of variation and CAGR is 33.43 percent and 10.90 percent respectively. It shows that least inconsistent compared to the other sample company and has positive growth of reserves over the sample period. It implies that the company shall be able to meet future losses as and when suffered.

India Cement

The mean value of reserves to capital ratio is 7.21, which is found least among the sample company. The coefficient of variation and CAGR is 51.6 percent and 20.15 percent respectively. It shows that highly inconsistent compared to the other sample company and highly positive growth of reserves over the sample period. It indicates that the company may not able to meet future losses as and when suffered.

Ramco Cement

The mean value of reserves to capital ratio is 40.6, which is found moderate among the sample cement company. The coefficient of variation and CAGR is 50.40 percent and 14.11 percent respectively. It shows that inconsistent compared to the other sample company and have positive growth of reserves over the sample period. It indicates that the company shall be able to meet future losses as and when suffered.

Conclusion

The enlistment of Indian economy cannot be done with the assessment of cement industry based on its financial performances. A study of long-term solvency analysis is very much essential the present globalised economic environment. Appropriate analysis of financial performance helps the firms to increase their earning capacity and changes the retained earning process by modifying various revenue ratios.

Good quality control and stable performance are considered to be the vital factors for the better functioning of the industries. But these factors are not the only yardstick in determining the success of the industries. Only, when the management of these firms and their success will stride to the highest level of targeted success in short period. Under this circumstance the present management policies are all reviewed to strengthen country's economic development by way of more productions and increasing the consumption of cement products to construct houses, dams, bridges and mega structures for the betterment of life style in the modern world.

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