

**LONG-TERM AND SHORT-TERM SOLVENCY STATUS OF SELECT CEMENT
INDUSTRIAL UNITS IN TAMIL NADU**

*** R. ANGAMUTHU **Dr. A. SIVANANDAM**

*Assistant Professor, Commerce Wing, DDE, Annamalai University, Chidambaram.

**Assistant Professor, Commerce Wing, DDE, Annamalai University, Chidambaram.

Abstract

In this paper we examine long-term and short-term solvency status of Cement companies between 2000-01 and 2009-10. The five cement companies, four private owned and one Government owned are considered for the study. Results of the analysis reveals that there is no risk of solvency either in fulfilling long-term commitment in most of the cement manufacturing companies under study. Regarding short-term solvency, the study indicates that all cement companies have sufficient liquid assets to cover their short-term debt but a significant decline in short-term solvency level is found for majority of the companies as well as for all selected companies when pooled together. Overall this study envisages that long-term solvency position is good while short-term solvency level is better for cement companies.

Key Words: *Compound Growth Rate (CAGR), Coefficient of Variation (CV), Gearing, Linear Growth Rate (LGR). Long-term solvency, Short-term solvency,*

INTRODUCTION

The financial solvability is an important criteria for investors and financial specialists to judge the healthiness of a business because overall success and continued sustenance of the business enterprise largely depends on its solvency status. Solvency is the state or ability of a firm to stay financially afloat (that is, the state of being liquid) meeting every financial obligation as they fall due without hindrance and the need to borrow further. In simpler terms, solvency is the ability of a business to have enough assets to cover its liabilities.

REVIEW OF LITERATURE

Many of the research works have been conducted, over the period to evaluate the long-term and short-term solvency position of the company with the help of the various ratios. Solvency is another word for liquidity and in the words of Bardia (2006), it is the lifeline of a business organization upon which its sustained growth depends. Solvency is the state or ability of a firm to stay financially afloat (that is, the state of being liquid) meeting every financial obligation as they fall due without hindrance and the need to borrow further. An organization, which is capable of maintaining the status of a “going concern”, may be considered solvent.

One can employ financial ratios to determine a firm’s liquidity, profitability, solvency, capital structure, etc. Altman (1968) used financial ratios to predict corporate bankruptcy. He found that the bankruptcy model has an accuracy rate of 93% and is very successful in predicting failed and non-failed firms. Abu Sina and Arshed Ali (1998) used financial ratios to test the financial strengths and weaknesses of Khulna Newsprint Mills Ltd. He found that due to lack of planning and control of working capital, operational inefficiency, obsolete store, ineffective credit policy, increased cost of raw materials, labor and overhead, the position of the company was not good. Ohlson (1980) employed financial ratios to predict a firm’s crisis. He found that there are four factors affecting a firm’s vulnerability. These factors are the firm’s scale, financial structure, performance and liquidity. Salauddin (2001) examined the profitability of the Pharmaceutical Companies of Bangladesh. By using ratio analysis, mean, standard deviation and co-efficient of variation he found that the profitability of the Pharmaceuticals sector was very satisfactory in terms of the standard norms of return on investment.

STATEMENT OF THE PROBLEM

Managing solvency efficiently is much for an organization to achieve a systematic and sustainable growth in order to keep its identity for longer time period. The most widely emphasized goal a business organization is to maximize its value to its owners which is the driving force to make the organization successful. This is possible only when, it has sufficient financial resources to meet the long term and short term requirements. That is, funds are invariably required to carry on the various activities of a business which should be pursued on fulfilling the firm’s long-term and short-term obligation. To meet long term commitment, a firm needs sufficient long-term assets and it needs short-term assets, i.e., current assets, enough to cover its short-term commitment. So, analyzing a firm’s power of repaying all its commitments (liabilities), either long-term or short-term through is of much importance for the investors as well as for the business organization. So, the present research work is undertaken.

OBJECTIVES OF THE STUDY

The present research work is carried out with objective of finding out the status of long-term and short-term solvency in Select Cement Industrial Units in Tamil Nadu, India.

HYPOTHESIS

The following null hypotheses are framed for the present study:

1. There is no availability of sufficient long-term asset to cover the long-term commitment (long-term solvency risk) in cement manufacturing companies.
2. There is no availability of sufficient liquid assets to cover the short-term commitment (short-term solvency risk) in cement manufacturing companies.

METHODOLOGY

SAMPLE

As on 31st March 2010, there are 14 cement industrial units and 4 grinding units registered in Tamilnadu of which one company belongs to the Public Sector(2 Industrial Units) and 16 are Private Sector Cement Industrial Units. The present study is restricted to 14 cement industrial units which constitute 5 leading cement companies in Tamilnadu Viz., Chettinad Cement Corporation Limited, Dalmia Cement (Bharat) Limited, India Cements Limited, Madras Cements Limited, and Tamilnadu Cements Corporation Limited. The sample of companies has been selected based on a convenient basis.

PERIOD OF THE STUDY

The period of the study is 10 years from 2000-01 to 2009-10.

DATA

The data for present study is Balance sheet and Profit & Loss accounts of the sample companies for the periods under study. The required data were gathered from various annual reports of the companies.

DESIGN

An evaluation of long-term and short-term solvency position of the selected companies is based on the ratio analysis. Two long-term solvency ratios (Gearing ratio and Interest coverage ratio) and two short-term solvency ratios (current ratio and liquid ratio) have been used for the analysis. A brief explanation of above ratios are given below:

GEARING RATIO

Gearing is a measure of a business's long-term financing arrangements. It is essentially the proportion of a business financed via debt compared to equity.

$$\text{Gearing Ratio} = \frac{\text{Interest bearing debt} - \text{Cash}}{[\text{Equity} + (\text{Interest bearing debt} - \text{Cash})]}$$

The ideal proportion is subject to the nature of a business and the current economic climate. In practice many businesses have gearing levels less than 50%.

The higher the gearing, the greater the risks from dilution of earnings and sensitivity to changes in interest rates.

INTEREST COVERAGE RATIO

A ratio 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:

$$\text{Interest Coverage Ratio} = \text{EBIT} / \text{Interest Expense}$$

CURRENT RATIO

The current ratio is the ratio used for testing the basic liquidity (short-term solvency) of a company. It comprises of cash, accounts receivable, marketable securities, prepaid expenses, etc. It signifies a company's ability to meet its short-term liabilities with its short-term assets. A current ratio greater than or equal to one indicates that current assets should be able to satisfy near-term obligations. A current ratio of less than one may mean the firm has liquidity issues.

$$\text{Current Ratio} = (\text{Current Assets}) / \text{Current Liabilities}$$

QUICK RATIO

The quick ratio, also called as Liquid ratio, is a tougher test of short-term solvency (liquidity) than the current ratio. It eliminates certain current assets such as prepaid expenses that may be more difficult to convert to cash. Like the current ratio, having a quick ratio above one means a company should have little problem with liquidity. The higher the ratio, the more liquid it is, and the better able the company will be to ride out any downturn in its business.

$$\text{Quick Ratio} = (\text{Cash} + \text{Accounts Receivable} + \text{Short-Term or Marketable Securities}) / (\text{Current Liabilities})$$

STATISTICAL TOOL

Various statistical measures have been used. The mean, standard deviation and coefficient of variation are calculated to evaluate central tendency and volatility in the solvency position over the time. The linear growth rates and compound growth rates are then calculated to find out trend and growth in solvency position. The statistical significance of the trend and growth in various solvency ratios are tested using student t-test.

RESULTS AND DISCUSSION

Table - I
Gearing Ratio of Cement Companies during 2000-01 and 2009-10

Year	Chettinad Cement	Dalmia Cement	India Cement	Madras Cement	TANCEM	All
2000-01	62.98	48.11	69.05	62.90	117.34	65.88
2001-02	77.43	42.83	74.27	72.52	224.28	70.82
2002-03	70.88	42.89	80.89	71.32	112.56	73.09
2003-04	67.42	42.07	60.03	65.75	119.18	60.63
2004-05	67.74	56.96	60.88	65.92	128.08	62.86
2005-06	61.90	59.31	45.95	58.45	134.90	53.04
2006-07	43.55	54.73	45.29	48.23	130.26	48.66
2007-08	51.11	56.60	29.44	62.84	113.20	46.16
2008-09	72.87	64.29	34.38	65.80	114.57	53.90
2009-10	44.26	65.71	33.45	61.89	67.22	50.07
Mean	62.01	53.35	53.36	63.56	126.16	58.51
SD	11.89	8.87	18.23	6.84	39.18	9.51
CV	19.17	16.63	34.16	10.76	31.05	16.25
CAGR	-3.94*	4.88***	-10.39***	-1.51	-5.52*	-4.45***
t-Value	-(2.08)	(4.57)	-(6.82)	-(1.24)	-(2.07)	-(4.58)
LGR	-2.28*	2.53***	-5.55***	-0.96	-7.13*	-2.67***
t-Value	-(2.02)	(4.84)	-(6.74)	-(1.33)	-(1.87)	-(4.59)

t-table value for 8 d.f @10% = 1.85; @5% = 2.30 @1% = 3.35.

*Significant at 10% level; **Significant at 5% level; ***Significant at 1% level.

Source: Compiled from annual reports

Table I presents the Gearing ratio for selected cement companies and also for all companies pooled together. According to the table, use of external fund (debt) in the capital has been at satisfactory level for all cement companies except TANCEM. Among the four cement companies other than TANCEM, the long-term solvency is more satisfactory in Dalmia cement and India cement (Mean Gearing Ratio = 53.35% and 53.36% for Dalmia and India cement whereas it is 62.01% and 63.56% for Chettinad and Madras cement companies, and Gearing, i.e., proportion of long-term debt in capital of Dalmia and India Cement companies is less than that of pooled companies). As far as the TANCEM is concerned, only in 2009-10, there is no risk of long-term solvency (Gearing Ratio = 67.22%). But from the observation of CAGR and LGR, which are significant and negative for Chettinad Cement, India Cement and TANCEM, and significant and positive for Dalmia Cement, it is understood that there has been a notable improvement in long-term liquidity of Chettind Cement, India Cement and TANCEM whereas it is opposite in the case of Dalmia Cement. When all selected companies are pooled together, there is a significant reduction in the long-term solvency risk, i.e., a significant improvement in availability of long-term assets to cover long-term liabilities. The coefficient of variation, 34.16 for India cement and 31.05 for TANCEM is very high compared to that of other cement companies as well as that of pooled companies. This indicates greater variability in the gearing ratio which is likely due to improper and inefficient debt management.

Table - II
Interest Coverage Ratio of Cement Companies during 2000-01 and 2009-10

Year	Chettinad Cement	Dalmia Cement	India Cement	Madras Cement	TANCEM	All
2000-01	1.29	2.11	1.27	1.83	-0.26	1.38
2001-02	0.85	2.19	0.96	1.51	-0.11	1.15
2002-03	0.49	1.91	-0.19	1.34	0.74	0.31
2003-04	1.78	2.13	0.30	2.06	-0.02	0.96
2004-05	3.02	2.59	1.03	2.58	0.04	1.62
2005-06	4.30	5.64	1.34	4.18	0.19	2.44
2006-07	10.29	6.49	4.28	20.75	2.79	6.75
2007-08	13.58	4.84	8.69	12.76	9.83	8.28
2008-09	0.83	2.77	6.78	5.93	5.23	4.42
2009-10	2.63	2.16	4.72	4.50	47.30	3.59
Mean	3.91	3.28	2.92	5.74	6.57	3.09
SD	4.46	1.70	3.03	6.28	14.67	2.66
CV	114.09	51.86	103.66	109.26	223.28	86.31
CAGR	18.80	6.66	31.12**	24.61**	117.24***	28.10**
t-Value	(1.54)	(1.33)	(3.13)	(2.99)	(4.16)	(3.18)
LGR	0.63	0.21	0.78***	1.03	3.15**	0.61**
t-Value	(1.34)	(1.17)	(3.51)	(1.62)	(2.42)	(2.73)

t-table value for 8 d.f @10% = 1.85; @5% = 2.30 @1% = 3.35.

Significant at 5% level; *Significant at 1% level.

Source: Compiled from annual reports

Table II shows that average interest coverage for all cement companies except for India cement, which ranges between 3.28 times and 6.57 times is more than the average of pooled companies (Mean = 3.09 times) during the period under study. The average interest

coverage for India cement, 2.92 times is substantial and this company has earned sufficient amount to cover the financial charges arising out of debt though it is less than that of pooled companies. The whole picture reveals that the cement companies in Tamil Nadu are not highly burdened with debt expenses and instead they all have ability to meet interest expenses, in turn revealing better long-term solvency position. From the observation of the CAGR and LGR values, which are positive for all but at significant level for India Cement, Madras Cement and TANCEM as well as for pooled companies, it is apparent that there is a notable increase in their ability to meet interest expenses. From the coefficient of variables, it is evident that the interest coverage is less consistent only in respect of TANCEM (CV = 14.67, higher than that of other companies).

From the inferences of the ratios related to long-term solvency, it is found that cement companies have sufficient long-terms assets to cover their long-term liabilities and there is a significant improvement in long-term solvency position of cement companies over the period, rejecting first null hypothesis.

Table – III
Current Ratio of Cement Companies during 2000-01 and 2009-10

Year	Chettinad Cement	Dalmia Cement	India Cement	Madras Cement	TANCEM	All
2000-01	2.32	5.13	4.24	2.23	2.99	3.73
2001-02	2.26	4.63	4.55	2.04	0.95	3.26
2002-03	1.78	4.73	2.92	2.03	2.13	2.74
2003-04	1.87	4.52	5.41	1.80	3.38	3.86
2004-05	2.81	2.96	4.28	2.09	3.08	3.38
2005-06	2.32	2.24	3.91	1.78	3.12	2.91
2006-07	2.92	1.52	4.26	2.52	2.82	2.77
2007-08	2.59	1.90	2.34	2.68	1.96	2.28
2008-09	4.28	1.86	2.01	2.72	1.33	2.19
2009-10	5.25	2.91	2.47	2.66	1.48	2.73
Mean	2.84	3.24	3.64	2.25	2.32	2.98
SD	1.10	1.38	1.13	0.37	0.87	0.56
CV	38.70	42.74	30.96	16.20	37.35	18.83
CAGR	9.40***	-11.22***	-7.29**	3.64**	-2.95	-4.53**
t-Value	(3.73)	-(3.72)	-(2.65)	(2.51)	-(0.60)	-(3.11)
LGR	0.29***	-0.38***	-0.24**	0.08**	-0.08	-0.14**
t-Value	(3.61)	-(4.37)	-(2.47)	(2.75)	-(0.84)	-(3.07)

t-table value for 8 d.f @10% = 1.85; @5% = 2.30 @1% = 3.35.

Significant at 5% level; *Significant at 1% level.

Source: Compiled from annual reports

From Table III, it is evident that the short-term liquidity position of all steel companies, on the average, is more than satisfactory level as mean current ratios for all companies as well as pooled companies are well above 2.0. The CAGR and LGR values are significant and negative for Dalmia cement and India Cement, whereas they are significant and positive for Chettinad Cement and Madras Cement. For TANCEM, it is positive but insignificant. But for pooled companies, the CAGR and LGR values are significant and negative. So, it becomes apparent that the cement companies have sufficient fund to cover their short-term commitments but there is a remarkable decline in short-term solvency position of cement companies over the period.

Table - IV
Liquid (Quick) Ratio of Cement Companies during 2000-01 and 2009-10

Year	Chettinad Cement	Dalmia Cement	India Cement	Madras Cement	TANCEM	All
2000-01	1.25	1.85	3.64	1.62	1.93	2.82
2001-02	1.25	1.54	3.92	1.45	0.76	2.48
2002-03	0.84	1.69	2.58	1.42	1.81	2.14
2003-04	0.89	1.81	4.76	1.41	2.84	3.01
2004-05	1.12	1.41	3.65	1.22	2.52	2.44
2005-06	1.03	1.30	3.36	1.23	2.53	2.21
2006-07	1.87	1.07	3.64	2.00	2.18	2.20
2007-08	1.53	0.96	1.96	1.85	1.55	1.63
2008-09	2.81	0.99	1.64	1.74	1.00	1.53
2009-10	3.68	1.41	2.07	1.70	1.13	1.93
Mean	1.63	1.40	3.12	1.56	1.83	2.24
SD	0.93	0.32	1.01	0.26	0.71	0.47
CV	57.19	23.09	32.26	16.58	38.80	21.14
CAGR	13.30***	-5.86***	-7.83**	2.49	-2.69	-5.44***
t-Value	(3.45)	-(3.35)	-(2.78)	(1.41)	-(0.54)	-(3.51)
LGR	0.24***	-0.08***	-0.22**	0.04	-0.05	-0.12***
t-Value	(3.45)	-(3.49)	-(2.57)	(1.50)	-(0.67)	-(3.46)

t-table value for 8 d.f @10% = 1.85; @5% = 2.30 @1% = 3.35.

Significant at 5% level; *Significant at 1% level.

Source: Compiled from annual reports

Table IV provides the liquidity ratio (quick ratio) for the select companies. As per the table, the liquidity ratio is more than 1.0, the required norm, for all cement companies and also for all companies when pooled together. The liquid ratio is as high as 3.12 times for India cement. From this picture, it is understood that an availability quick assets in cement companies is much higher than sufficient enough to cover their short-term obligations. However, from CAGR and LGR values, it is understood that there is a significant decline in availability of quick assets relative to short-term liabilities in three out of five companies and also in all companies when pooled together. However, in the end year of the study, this ratio is above the required norm of 1.0 for all five cement companies and also for pooled companies. This shows that despite a notable decline, the cement companies are still in better short-term solvency. The coefficient of variation reveals that the quick ratio is less consistent for Chettinad cement followed by TANCEM and India cement.

From the inferences of short-term solvency ratios (current ratio and liquidity ratio), it is found that the short-term solvency position of the cement companies is good but there is a remarkable decline in these ratios either due to increase in short-term obligations or due to decline in liquid assets. However, it is found that there is no dangerous situation in the select cement companies in respect of fulfilling their short-term commitment in supporting better short-term solvency status, in turn rejecting second null hypothesis.

CONCLUSION

From empirical analysis of long-term solvency status of cement companies through gearing ratio and interest coverage ratio it is found that cement companies have sufficient long-term assets to cover their long-term liabilities and there is a significant improvement in long-term solvency position of cement companies over the period. From the analysis short-term solvency condition by means of current ratio and liquidity ratio, it is identified that the short-term solvency position of the cement companies is good but there is a remarkable decline in these ratios either due to increase in short-term obligations or due to decline in liquid assets. However, it is found that there is no dangerous situation the select cement companies in respect of fulfilling their short-term commitment in supporting better short-term solvency status.

REFERENCES:

1. Abu Sina. & Md. Arshed Ali Matubber. (1998). “Financial Statement Analysis of Khulna Newsprint Mills Ltd.”, *Islamic University Studies (part C)*, Vol. 1, No. 2, December, pp179-189.
2. Altman, E.I. (1968). “Financial Ratios, Discriminate Analysis and the Prediction of Corporate Bankruptcy”, *The Journal of Finance*, Vol.4, pp. 589-609
3. Bardia, S. C. (2006), “Liquidity Management: A Case Study of TISCO”, *Towards Better Working Capital Management*, Murthy, G. K. eds., Hyderabad, India: The Icfai University Press
4. Ohlson. J.A. (1980). “Financial Ratios and the Probabilitistic Prediction of Bankruptcy”, *Journal of Accounting Research*, Vol.19, No. 1, pp. 61-80.
5. Salauddin. A. (2001). “Profitability of Pharmaceutical companies of Bangladesh”. *The Chittagong University Journal of Commerce*, Volume 16, pp. 54-64.