

IMPACT OF RECEIVABLES MANAGEMENT ON WORKING CAPITAL AND PROFITABILITY: A STUDY ON SELECT CEMENT COMPANIES IN INDIA

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ABSTRACT

In this paper an attempt is made to study the impact of Receivables Management on Working Capital and Profitability. To accomplish this research objective data have been collected from the annual reports of select cement companies for the period from 2001 to 2010. The ratios which highlight the efficiency of receivables management viz., Receivables to Current Assets Ratio, Receivables to Total Assets Ratio, Receivables to Sales Ratio, Receivables Turnover Ratio, Average Collection Period, Working Capital Ratio and Profitability Ratio, have been computed. Statistical tools like ANOVA were also used to know the impact on working capital and profitability. Working capital and profitability were considered as dependent variables. The investigation reveals that the receivable management across cement industry is efficient and showing significant impact on working capital and profitability.

KEYWORDS: ANOVA, Profitability, Receivables Management, Working Capital.

INTRODUCTION

Management of trade credit is commonly known as Management of Receivables. Receivables is one of the three primary components of working capital, the other two being inventory and cash. Receivables occupy second important place after inventories and thereby constitute a substantial portion of current assets in several firms. The capital invested in receivables is almost of the same as that of the investment made in cash and inventories. Receivables thus, form about one third of current assets in India.

Meaning and Definition:

When goods and services are sold under an agreement permitting the customer to pay for them at a later date, the amount due from the customer is recorded as accounts receivables; so, receivables are assets accounts representing amounts owed to the firm as a result of the credit

sale of goods and services in the ordinary course of business. The value of these claims is carried on to the assets side of the balance sheet under the title such as accounts receivable, trade receivables or customer receivables. This term can be defined as (Joy, 1978) "debt owed to the firm by customers arising from sale of goods or services in ordinary course of business." According to Robert N. Anthony, (Robert & Anthony) "Accounts receivables are amounts owed to the business enterprise, usually by its customers. Sometimes it is broken down into trade accounts receivables; the former refers to amounts owed by customers, and the latter refers to amounts owed by employees and others".

Review of Literature:

Khandelwal. N M (1985) investigated the working capital management process and practices among 40 small scale industries in the state of Rajasthan, between 1975-76 and 1979-80. The study revealed that the management of receivables was highly ineffective and disorderly. It was found that bills of receivables constituted as much as 50% of total current assets. Highlighting the sickness in the Jodhpur industrial estate, the study attributed the main reason to the inefficient management of working capital. The study also revealed that entrepreneurs had to be educated on the concepts of working capital management.

Sinha .KP, Sinha.AK and Singh. SC (1988) in their study on the analysis of working capital management in Fertilizer Corporation of India with reference to Gujarat State Fertilizer Corporation revealed that a huge portion of funds was tied up in the form of working capital, especially in inventories and receivables. The study revealed ineffective management of working capital as the prime cause for erosion in profits. It found that the management of receivables particularly was highly unplanned and ineffective, which resulted in unpredicted cash inflows and huge amount of bad debts. The study strongly recommended urgent action to avoid further deterioration.

Suk. H, Kim.SH and Rowland have conducted a survey among 94 Japanese companies in USA (1992) found that they differed in working capital management practices from the US companies in terms of lower levels of inventory and higher levels of accounts receivables. The study revealed that the US firms piled-up their inventories; Japanese firms had higher percentage of receivables to total assets.

Padachi. K (2006) examined the trends in working capital management and its impact on firm's performance. The results proved that a high investment in inventories and receivables is associated with lower profitability. Further, he showed that inventory days and cash conversion cycle had positive relation with profitability. On the other hand, account receivables days and account payables days correlated negatively with profitability.

Deloof, M (2003) found a significant negative relation between gross operating income and the number of days accounts receivables, inventories and accounts payables of Belgian firms. These results suggested that managers can create value for their shareholders by reducing the number of day's accounts receivables and inventories to a reasonable minimum. The negative relationship between accounts payable and profitability inconsistent with the view that less profitable firms wait longer to pay their bills.

Ramachandran, A and Janakiraman, M (2009) analyzed the relationship between working capital management efficiency and earnings before interest and tax of the paper industry in India. The study revealed that cash conversion cycle and inventory days had negative correlation with earnings before interest and tax. While accounts payable days and accounts receivable days related positively with earnings before interest and tax.

Research Methodology

Objectives of the Study

- To find out the efficiency of Receivables Management.
- To assess the impact of Receivables Management on Working Capital Management.
- To assess the impact of Receivables Management on Profitability.

Hypotheses:

H1: Impact of Receivables Management on Working Capital Management is almost nil.

H2: Impact of Receivables management on Profitability is insignificant.

Sample Design:

For the present study impact of receivables management on working capital and profitability four cement companies viz., India Cement Ltd, Andhra Cement Ltd, Madras Cement Ltd and Bheema Cement Ltd were selected purposively to analyze the data compiled from the financial statements provided by the above companies.

Tools of Analysis:

For the present study secondary data alone have been compiled from the financial statements provided by select sample cement companies of cement industries. Financial tools like ratios have been used to analyze the data.

Tools of Analysis

Receivables to Current Assets Ratio: This ratio reveal the size of receivables in current assets, higher the ratio, higher the cost of carrying the receivables. Therefore every firm needs to carry least percentage of receivables without affecting the sales volume.

$$\text{Receivables to Current Ratio} = \frac{\text{Receivables}}{\text{Current Assets}} * 100$$

Receivables to Total Assets Ratio: It is also one of the indicators to find out whether effective management of receivables or not by using the following formula:

$$\text{Receivable to Total Assets Ratio} = \frac{\text{Receivables}}{\text{Total Assets}} * 100$$

Receivables to Sales Ratio: This ratio indicates the amount of receivables held by the company as a percentage of sales during a given period of time. The efficiency of receivable of management is inversely related to this ratio. Lower ratio reflects the firm's ability in doing larger business with lesser debtors. Increase the sales and decreases in debtors indicate the

company's effective collection mechanism. As suggested by Hampton. JJ (1983) this could be calculated as follows:

$$\text{Receivables to Sales Ratio} = \frac{\text{Receivables}}{\text{Sales}} * 100$$

Receivable Turnover Ratio: It measures the liquidity of debtors of a firm and measures the number of times of receivables are rotated in a year in terms of sales. It is important to maintain a reasonable quantitative relationship between receivables and sales. The average collection period indicates the average time lag (in days) between sales and collection thereof. MathurS B (2002) suggested that these ratios could be calculated by the following formulae.

$$\text{Receivables Turnover Ratio} = \frac{\text{Sales}}{\text{Average Receivables}}$$

$$\text{Average Collection Period} = \frac{365}{\text{Receivable Turnover Ratio}}$$

Working Capital Ratio:It is an indication of short-term financial health of a business. The result of this ratio or measure is either a positive or a negative ratio. A positive ratio indicates that the company has enough liquid assets to pay off short-term obligations. Also, a high working capital ratio can be a signal that the company might be able to expand its operations. Negative working capital ratio means that the business currently is unable to meet its short-term liquidities with its current assets. Therefore, increase in sales or additional capital into the company is necessary in order to continue its operations.

$$\text{Working Capital} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Return on Investment Ratio:It is also called return on capital employed. It is a measure of profitability that indicates whether or not a company is using its resources in an efficient manner.

$$\text{Return on Investment} = \frac{\text{Operating Profit}}{\text{Capital Employed}} * 100$$

Analysis:

Receivables to Current Assets Ratio

Table 1 Receivables to Current Assets Ratio

Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	45.84	44.13	34.16	50.89	43.76
2002	54.99	43.72	32.13	54.57	46.35
2003	44.15	55.20	35.46	55.91	47.68
2004	47.43	50.15	29.77	53.88	45.31
2005	47.47	49.41	20.68	42.45	40.00
2006	52.62	54.06	24.72	50.48	45.47
2007	35.89	36.20	26.12	48.64	36.71
2008	46.45	24.17	18.82	24.60	28.51
2009	47.17	29.68	19.64	38.97	33.87
2010	50.07	22.27	25.76	34.43	33.13
Mean	47.21	40.90	26.73	45.48	40.08

Source: Annual Reports from 2001-10

Table No 1 shows the mean values of receivables. The aggregate mean value of the select cement companies is 40.08. India Cement Ltd had the highest average ratio (47.21) of receivables to current assets, followed by Bheema CementLtd (45.48), Andhra CementLtd (40.90) and Madras CementLtd (26.73).Gitman. L J(2001)suggested that an average manufacturing firm could give the percentage of receivables to current assets is less than or equal to 37%. It is found that the situation across industry was worst because the average of 40.08% is more than 37%. While Madras Cement Ltd had least percentage of receivables to current assets against standard whereas the rest of the companies had highest percentage of receivables to current ratio.

Receivables to Total Assets Ratio

Table 2 Receivables to Total Assets Ratio

Table No 2.Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	6.61	10.18	4.54	21.06	10.60
2002	9.90	10.85	4.87	26.84	13.12
2003	5.67	11.83	5.79	33.40	14.17
2004	4.20	8.22	4.70	36.68	13.45
2005	5.59	7.93	4.41	22.43	10.09
2006	7.33	9.85	4.95	28.44	12.64
2007	6.09	7.26	4.86	18.37	9.15
2008	6.06	5.94	2.37	03.19	4.39
2009	6.29	3.95	2.41	04.64	4.32
2010	7.74	1.42	3.77	04.28	4.30
Mean	6.55	7.74	4.27	19.93	9.62

Source: Annual Reports from 2001-10

Table No 2 shows the receivables to total assets ratio. Bhattacharya. H (2003) stated that in his study standard percentage of receivables to total assets is 26%. As per analysis, industry average percentage of receivables to total assets is 9.62. Which is less than standard percentage of receivables to total assets (26%)?The average percentage of receivables to total assets for select companies namely, India Cement Ltd, Andhra Cement Ltd, Madras Cement Ltd and Bheema Cement Ltd have 6.55%, 7.74%, 4.27% and 19.93% respectively during the study period.All select companieshave less than standard percentage of receivables to total assets (26%). Hence, Find out the situation across the industry is better.

Receivables to Sales Ratio

Table 3 Receivables to Sales Ratio

Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	13.76	22.95	8.31	10.70	13.93
2002	23.41	16.79	6.88	13.73	15.20
2003	14.64	15.97	8.99	19.17	14.69
2004	14.27	16.27	6.11	20.67	14.33
2005	15.77	12.40	6.17	18.15	13.12
2006	15.60	10.13	4.91	24.59	13.80
2007	11.53	10.57	4.16	14.20	10.11
2008	10.21	05.00	3.07	16.57	8.71
2009	10.54	05.06	3.55	18.25	9.35
2010	13.16	02.90	5.53	18.85	10.11
Mean	14.28	11.80	5.76	17.48	12.33

Source: Annual Reports from 2001-10

Table no 3 indicates that the average percentage of amount of receivables to sales across industry is 12.33. The highest average of 15.20 in a year 2002 and least average of 8.71 in a year 2008, mean of mean is 12.33. Madras Cement Ltd and Andhra Cement Ltd were more efficient by holding less investment in receivables as percentage of sales when compared to the aggregate of industry. Whereas India Cement Ltd and Bheema Cement Ltd were inefficient because they had the percentage of receivables to sales more than the industry average.

Receivables Turnover Ratio

Table 4 Receivable Turnover Ratio

Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	7.26	4.35	12.02	9.34	8.24
2002	4.27	5.95	14.51	7.28	8.00
2003	6.83	6.26	11.11	6.92	7.78
2004	7.00	6.14	16.34	4.83	8.58
2005	6.33	8.06	16.19	5.50	9.02
2006	6.40	9.86	20.35	4.06	10.17
2007	8.66	9.45	23.98	7.03	12.28
2008	9.78	19.96	32.54	6.03	17.08
2009	9.48	19.76	28.16	5.47	15.72
2010	7.59	34.37	18.05	5.30	16.33
Mean	7.36	12.42	19.33	6.18	11.32

Source: Annual Reports from 2001-10

Table No 4 refers that the receivable turnover ratio varied between 17.08 times in 2008 and 7.78 times in 2003 and the overall industry average ratio was 11.32 times. India Cement Ltd and Bheema Cement Ltd had yearly average receivable turnover ratio 7.36 times and 6.18 times respectively, which was less than industry average 11.32 times. Hence, these were inefficient companies to achieve higher receivable turnover ratio. Andhra Cement Ltd and Madras Cement Ltd had yearly average receivable turnover ratio 12.42 times and 19.33 times respectively, which was more than the industry average 11.32 times. So, these were efficient companies to achieve higher receivable turnover ratio.

Average Collection Period

Table 5 Average Collection Period

Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	50.27	83.90	30.36	39.07	50.90
2002	85.48	61.34	25.15	50.13	55.53
2003	53.44	58.30	32.85	52.74	49.33
2004	52.14	59.44	22.33	75.56	52.37
2005	57.66	45.28	22.54	66.36	47.96
2006	57.03	37.01	17.93	89.90	50.47
2007	42.14	38.62	15.22	51.92	36.98
2008	37.32	18.28	11.21	60.53	31.84
2009	38.50	18.47	12.96	66.72	34.16
2010	48.08	10.61	20.22	68.86	36.94
Mean	52.21	43.13	21.08	62.18	44.65

Source: Annual Reports from 2001-10

Table No 5 reveals the average aggregate of average collection period across the cement industry over ten years period. The industry mean is 44.65 days. In India Cement Ltd and Bheema Cement Ltd aggregate average collection period is 52.21 days and 62.18 days respectively, which were more than the industry average of 44.65 days. Since, India Cement Ltd and Bheema Cement Ltd were ineffective companies. Whereas Andhra cement Ltd (43.13 days) moderate effective and Madras Cement Ltd (21.08 days) highly effective companies when compared to aggregate across industry during the study period.

Working Capital Ratio

Table 6 Working Capital Ratio

Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	1.13	0.66	1.38	0.73	0.97
2002	0.88	0.64	0.53	0.82	0.71
2003	0.39	0.80	0.53	0.93	0.66
2004	0.67	0.50	0.43	0.92	0.63
2005	0.71	0.36	0.63	1.73	0.85
2006	0.92	0.27	0.52	1.55	0.81
2007	1.56	0.33	0.53	1.46	0.97
2008	0.58	1.10	0.50	0.29	0.61
2009	0.55	0.73	0.55	0.73	0.64
2010	0.65	0.38	0.59	2.04	0.91
Mean	0.80	0.57	0.62	1.12	0.78

Source: Annual Reports from 2001-10

Table No 6 shows the working capital position amongst is highest average working capital 0.97 both in 2001 and 2007. The select cement companies over ten year period. The least average working capital is 0.61 in 2008; the aggregate of working capital ratio across industries is 0.78. Bheema Cement Ltd maintained highest level of working capital (1.12), India Cement Ltd had moderate level of working capital (0.80), Andhra Cement Ltd (0.57) and Madras Cement Ltd (0.62) maintained low level of working capital during the study period from 2001-2010.

Return on Investment Ratio

Table 7 Return on Investment Ratio

Year	India Cement Ltd	Andhra Cement Ltd	Madras Cement Ltd	Bheema Cement Ltd	Mean
2001	14.52	- 07.44	17.51	44.28	17.22
2002	09.06	08.65	25.45	51.00	23.54
2003	02.67	07.09	23.07	46.79	19.91
2004	03.99	-04.96	29.50	52.05	20.15
2005	05.20	-11.49	22.51	18.81	8.76
2006	09.57	-13.69	36.50	21.94	13.58
2007	19.75	-37.30	76.38	46.78	26.40
2008	27.84	28.34	40.94	07.42	26.14
2009	22.39	14.24	27.85	10.56	18.76
2010	16.10	-00.57	28.96	06.31	12.70
Mean	13.11	-17.13	32.87	30.59	14.86

Source: Annual Reports from 2001-10

Table No 7 shows the return on investment across the cement industry over ten year period. The aggregate average return on investment across industry is 14.86. The aggregate highest return on investment is 26.14 in 2008 and the least aggregate return on investment is 8.76 in 2005. Andhra Cement Ltd. Showing negative returns on investment, India Cement Ltd showing less return on investment against industry average. Madras Cement Ltd and Bheema Cement Ltd showing highest return on investment when compared to average return on investment of industry.

ANOVA

Table 8 ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
RTCA	Between Groups	2785.130	3	928.377	13.078	.000
	Within Groups	2555.557	36	70.988		
	Total	5340.687	39			
RTTA	Between Groups	1479.729	3	493.243	12.014	.000
	Within Groups	1477.982	36	41.055		
	Total	2957.710	39			
RTS	Between Groups	737.790	3	245.930	13.388	.000
	Within Groups	661.275	36	18.369		
	Total	1399.064	39			
RTR	Between Groups	1074.236	3	358.079	9.949	.000
	Within Groups	1295.685	36	35.991		
	Total	2369.920	39			
ACP	Between Groups	9223.709	3	3074.570	12.452	.000
	Within Groups	8888.565	36	246.905		
	Total	18112.274	39			
WCR	Between Groups	1.833	3	.611	4.413	.010
	Within Groups	4.985	36	.138		
	Total	6.818	39			
ROI	Between Groups	7901.202	3	2633.734	10.106	.000
	Within Groups	9382.319	36	260.620		
	Total	17283.521	39			

Receivables to Current Assets Ratio, Receivables to Total Assets Ratio, Receivables to Sales Ratio, Receivables Turnover Ratio, Average Collection Period, Working Capital Ratio and Profitability Ratio (ROI) of select cement companies is so significant because, the calculated value of 'F' ratio is greater than critical value of 'F' ratio at 5% level of significance.

Conclusion:

The study reveals that the receivable to current assets ratio across industry worst was not satisfactory, receivables to assets ratio position is better. Andhra Cement Ltd and Madras Cement Ltd had better performance in receivables management, whereas India Cement Ltd and Bheema Cement Ltd had poor performance. The average collection period across industry was less than the suggested norms during the study period. The collection period for India Cement Ltd and Bheema Cement Ltd was higher than the industry average whereas the collection period for Andhra Cement Ltd and Madras Cement Ltd was less than the industry average period. Receivables management showing a significant impact on working capital management

and profitability. However, on whole, the receivable management across the cement industry is more efficient.

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