Research Article

Working capital management efficiency of sugar sector in India

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SUMMARY : Sugar mills performance will be vary based on its cane availability. The inventory level will be varying among the industries. Efficient working capital management is important for the corporate strategy. Firms try to keep the average level of working capital that maximizes their value. This present study attempted to evaluate the efficiency of working capital management of sugar sector in India for the period 2007-2012. Instead of employing the financial ratios, working capital efficiency has been measured in terms of utilization index, performance index and total efficiency index. Findings of the study indicate that the sugar sector as a whole is performing well during the study period.

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BACKGROUND AND OBJECTIVES

India is the second largest producer of sugar in the world. Sugar cane is an important commercial crop in India. Sugarcane is grown in semi-tropical region and accounts for around two-third of world sugar production. The sugar industry is the second largest agricultural industry followed by the textile industry and most of them depend on this sugar sector. The sugar industry in India is well maintained and is growing at a steady pace, boosting up a consumer base of over all billions of people. Uttar Pradesh alone accounts for 24 per cent of the overall sugar production in the nation and Maharashtra's contribution can be totaled to 20 per cent followed by Tamil Nadu and Karnataka. More than 50 million farmers and their families are dependent on sugarcane for their livelihood. The sugar industry caters to an estimated 12 per cent of rural population in these six states through direct and indirect employment.

Sugarcane is grown as a crop with contractual obligations with the sugar mills which provide exclusive reserved cane areas for the development of sugarcane. All the sugar mills are having tie-up arrangements with co-operative and commercial banks facilitating timely provision of agricultural loan to the farmers. Sugarcane crop is cyclic in nature and is subject to volatile market conditions. The supply position of sugarcane to the mills is affected by the climatic conditions like drought, heavy rains and floods and also by other competitive crops. Working capital includes the inventory level of the sugar cane which is available for the crushing to the nearest industry. Based on the inventory level, the performance of the sugar mills will vary from industry to industry. Performance analysis of sugar mills is necessary for the present condition.

Working capital management is one of the most important functions of corporate management. A business enterprise with ample working capital is always in a position to avail advantages of any favorable opportunity either to buy raw materials or to implement a special order or to wait for enhanced market status. Working capital can be utilized for the payment of loans, employee's payroll, and pretty much any other operating costs that are involved in the everyday life of business. Even very successful business owners may need working capital funds when the unexpected circumstances arise. The

overall success of the company depends upon its working capital position. So, it should be handled properly because it shows the efficiency and financial strength of company.

Afza and Nazir (2011) examined the working capital efficiency of cement firms and found that the cement firms of Pakistan did perform remarkably well during the study period. The industry average for efficiency index was greater that one. However, the existence of a very high degree of inconsistency in this matter clearly points out the need for adopting sound working capital management policies to attain the target level of efficiency of the firms.

Bhattacharya (1997) developed an alternative ratio model for the measurement and monitoring of the working capital management. He decomposed the total efficiency of working capital management into performance index and utilization index. Ghosh and Maji (2004) used the model to investigate the efficiency of working capital management of Indian firms and found that these firms did not perform remarkably well with respect of working capital management and there is further need to investigate the application of efficiency index to firms in other sectors as well.

RESOURCES AND METHODS

Forty one sugar companies in India which is listed in Bombay stock exchange were selected for the working capital efficiency analysis. Six years periods from 2007 to 2012 was considered for evaluating the efficiency level of sugar mills in India. This study is based on secondary data which is available from the published and unpublished reports of the Sugar companies. The data were collected from Centre for monitoring Indian Economy (CMIE), PROWESS database, Mumbai. These data were consolidated for the purpose of analysis. Working capital efficiency analysis was used for the study.

Working capital efficiency index :

Working capital efficiency of the sugar companies were calculated by the model suggested by Bhattacharya (1997). For measuring the efficiency of working capital management (WCM), first utilization index of working capital management (UI_{wcm}) was calculated by applying the following model.

$$\text{Working capital utilization index } UI_{wcm} = A_t - 1/A_t$$

where,

A = Current assets/ Total income

Next is the measure the working capital efficiency based on performance index of working capital management (PI_{wcm}), which will be calculated as :

$$\text{Working capital performance index } PI_{wcm} = Is \sum_{i=1}^{n} \frac{W_i (t-1)}{\frac{Wit}{N}}$$

where,

I_s = sales index,

W_i = Individual group of current assets,

N = Number of current assets group,

T = Time period, and N =1,2,......n

Total current assets were divided into three components: Cash and bank balance, inventory and accounts receivables. Finally, the efficiency index of working capital management (EI_{wcm}) was calculated by multiplying the overall performance index of working capital management and with the working capital utilization index :

$$\text{Working capital efficiency index } EI_{wcm} = PI_{wcm} \, x UI_{wcm}$$

Based on the above calculations the companies will be classified into efficient, moderate and less working capital management companies.

OBSERVATIONS AND ANALYSIS

Instead of employing the traditional ratios, working capital has been measures in terms of utilization index, performance index and total efficiency index as suggested by Bhattacharya (1997). When working capital is managed improperly, allocating more than enough of it will render management non-efficient and reduce the benefits of short term investments. On the other hand, if working capital is too low, the company may miss a lot of profitable investment opportunities or suffer short term liquidity crisis, leading to degradation of the company. But, it is very difficult for the management tool to estimate working capital properly because, amount of working capital varies across firms over the periods depending upon the nature of the business, nature of raw material used, process technology used, nature of finished goods, degree of competition in the market, scale of operation, credit policy etc. Therefore, a significant amount of fund is required to invest permanently in the form of different current assets. Keeping in view the pragmatic importance of working capital management in finance, an attempt was made in this study to look into the working capital management of forty one sugar companies and given below.

Table 1 presents the individual firms' working capital utilization statistics for the sugar industry. The index values for working capital utilization varied between 0.75 (KM Sugars) and 1.59 (Ravalgaon sugars). The range for the minimum and maximum values of utilization index clearly indicated the efficiency of the firms belonging to the sugar industry in the matter of utilization of current assets.

Performance index represents average performance index of the various components of current assets. Table 2 showed the working capital performance index of sugar firms. If performance index of a firm is more than 1, it indicates the firm managed their working capital efficiently. It means the proportionate rise in sales (income) is more than the

Table 1 : Working capital utilization index of sugar firms

Sr.No.	Company	2007	2008	2009	2010	2011	2012	Average
1.	Riga sugars	0.57	0.82	2.00	0.33	0.67	1.11	0.92
2.	Balrampur chini	0.40	0.81	1.85	0.62	0.62	0.59	0.82
3.	Bajaj Hindusthan sugars	0.80	0.87	0.67	0.66	3.32	0.75	1.18
4.	Jeypore sugars	0.74	0.73	1.03	1.42	0.64	1.30	0.98
5.	Vishnu sugars	1.01	0.69	0.93	2.24	0.36	0.78	1.00
6.	Simbhaoli sugars	3.24	0.61	0.61	1.32	0.79	0.78	1.23
7.	Shadilal sugars	1.00	0.40	1.53	1.15	0.67	1.09	0.97
8.	Triveni sugars	0.91	0.59	1.19	1.06	0.73	0.94	0.90
9.	Upper ganesh sugars	0.87	0.79	2.10	0.57	2.06	0.74	1.19
10.	JK sugars	0.87	0.64	2.15	0.39	2.88	1.08	1.34
11.	Ravalgaon sugars	0.78	1.23	2.58	1.36	0.54	3.05	1.59
12.	Renuka sugars	0.84	1.42	0.31	2.13	0.87	1.02	1.10
13.	Ugar sugars	0.96	3.35	1.03	0.78	1.19	0.94	1.38
14.	Belapur sugars	0.98	1.17	0.42	1.34	1.11	1.18	0.98
15.	India sugars	0.30	1.98	1.32	0.94	2.08	0.97	1.27
16.	Oudh sugars	1.22	0.52	2.60	0.55	1.79	0.67	1.23
17.	Girdharilal sugars	2.31	1.89	0.35	0.13	6.62	0.34	1.94
18.	Parry's sugars	0.73	1.04	0.52	1.17	1.48	0.70	0.94
19.	Dhampur sugars	0.76	0.43	0.71	0.94	1.75	0.55	0.86
20.	KM sugars	0.17	0.63	1.12	0.85	0.67	1.07	0.75
21.	Rana sugars	0.87	1.64	0.57	1.62	1.03	1.05	1.13
22.	Kesar enterprises	1.24	1.02	0.99	0.59	2.90	0.70	1.24
23.	Dwarikesh sugars	0.32	0.79	2.94	0.78	1.22	0.86	1.15
24.	Venus sugars	2.00	0.52	0.56	3.35	0.49	1.23	1.36
25.	Mawana sugars	0.85	1.15	0.45	0.90	1.09	2.67	1.19
26.	Monnet sugars	1.14	1.23	0.70	1.12	1.04	1.07	1.05
27.	Piccadilly sugars	1.30	1.20	3.00	0.95	0.85	0.97	1.38
28.	Uttam sugars	2.09	0.64	0.45	1.23	1.40	0.93	1.12
29.	SEBC sugars	0.55	0.17	1.31	0.21	1.60	1.07	0.82
30.	Bannari amman sugars	1.27	0.57	1.70	1.40	0.49	1.28	1.12
31.	Sakthi sugars	1.56	2.31	0.77	1.37	0.77	0.56	1.22
32.	Dharani sugars	0.96	1.01	0.34	0.94	4.48	0.71	1.41
33.	Rajashree sugars	1.15	1.04	0.98	0.86	1.48	0.86	1.06
34.	EID parry	0.60	1.54	1.28	1.41	1.12	0.84	1.13
35.	KCP sugars	1.07	0.80	0.85	1.48	0.45	1.48	1.02
36.	Andhra sugars	1.07	0.66	1.31	1.32	0.53	1.17	1.01
37.	Gayatri sugars	1.01	0.57	1.47	0.94	0.65	3.12	1.29
38.	Thiru arooran sugars	1.42	2.00	0.26	1.05	1.25	2.10	1.35
39.	Kothari sugars	0.99	0.96	0.98	1.57	0.69	0.99	1.03
40.	Empee sugars	0.46	0.79	0.52	0.96	1.42	1.84	1.00
41.	Dalmia sugars	1.40	0.85	0.99	0.85	0.59	0.91	0.93

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Table 2: Working capital performance index of sugar mills

Sr. No.	Company	2007	2008	2009	2010	2011	2012	Average
1.	Riga sugars	0.82	1.44	1.20	0.29	0.77	1.44	0.99
2.	Balrampur chini	0.65	0.76	2.07	0.80	0.76	1.09	1.02
3.	Bajaj Hindusthan sugars	1.18	2.03	0.76	0.49	3.14	0.81	1.40
4.	Jeypore sugars	0.64	0.88	1.31	1.74	0.50	1.21	1.05
5.	Vishnu sugars	0.92	0.88	0.70	3.18	0.71	1.45	1.31
6.	Simbhaoli sugars	5.55	0.63	0.63	1.12	0.83	0.92	1.61
7.	Shadilal sugars	0.90	0.90	1.23	1.13	0.81	1.76	1.12
8.	Triveni sugars	0.86	0.73	1.03	1.25	0.81	1.00	0.95
9.	Upper ganesh sugars	0.85	1.12	1.87	0.64	1.78	0.95	1.20
10.	JK sugars	0.97	0.77	4.58	0.40	1.86	1.13	1.62
11.	Ravalgaon sugars	0.67	0.89	2.47	1.03	1.29	2.93	1.55
12.	Renuka sugars	0.76	2.64	0.45	8.30	1.14	1.37	2.44
13.	Ugar sugars	0.99	5.23	1.17	1.01	1.21	1.05	1.78
14.	Belapur sugars	1.08	2.65	0.52	3.43	1.13	1.21	1.08
15.	India sugars	0.43	1.57	1.20	3.22	1.55	0.78	1.46
16.	Oudh sugars	1.25	0.62	1.88	0.84	1.98	0.74	1.22
17.	Girdharilal sugars	2.05	3.24	0.25	0.13	5.25	1.14	2.01
18.	Parry's sugars	0.78	1.13	0.67	1.92	1.40	0.64	1.09
19.	Dhampur sugars	0.67	0.75	1.83	2.01	2.56	0.89	1.45
20.	KM sugars	0.28	1.66	0.78	4.63	1.20	0.97	1.59
21.	Rana sugars	0.73	2.09	0.45	2.44	1.33	0.74	1.30
22.	Kesar enterprises	1.13	1.83	0.90	0.69	2.96	0.79	1.38
23.	Dwarikesh sugars	5.52	1.67	2.69	0.98	0.84	1.60	2.22
24.	Venus sugars	2.70	0.57	0.57	1.07	1.56	1.07	1.26
25.	Mawana sugars	0.82	3.08	0.56	1.06	1.32	1.94	1.46
26.	Monnet sugars	1.21	1.38	0.77	1.43	1.22	1.04	1.17
27.	Piccadilly sugars	0.94	1.89	2.35	1.29	0.81	0.91	1.37
28.	Uttam sugars	2.56	1.75	0.46	1.33	1.55	0.87	1.42
29.	SEBC sugars	1.25	0.31	1.22	1.12	0.82	0.89	0.94
30.	Bannari amman sugars	1.26	0.54	8.31	1.41	0.80	1.31	2.27
31.	Sakthi sugars	1.56	2.98	1.22	1.25	0.88	0.49	1.40
32.	Dharani sugars	0.95	2.33	0.62	1.24	3.24	0.76	1.52
33.	Rajashree sugars	0.80	2.18	1.04	0.79	1.50	0.88	1.20
34.	EID parry	0.69	1.61	1.30	1.50	1.23	1.10	1.24
35.	KCP sugars	1.05	0.93	1.47	1.26	0.54	1.61	1.14
36.	Andhra sugars	1.10	0.63	1.28	1.12	0.61	1.21	0.99
37.	Gayatri sugars	0.97	0.83	3.05	0.67	0.86	3.41	1.63
38.	Thiru arooran sugars	0.86	5.23	0.48	1.50	1.26	3.12	2.08
39.	Kothari sugars	1.07	0.82	1.27	1.48	0.74	1.39	1.13
40.	Empee sugars	0.71	1.04	0.74	0.92	5.45	2.56	1.90
41.	Dalmia sugars	1.31	1.20	1.16	0.79	1.58	0.91	1.16

Table 3: Working capital efficiency index of sugar mills

Sr.No.	Company	2007	2008	2009	2010	2011	2012	Average
1.	Riga sugars	0.47	1.19	2.40	0.10	0.52	1.59	1.05
2.	Balrampur chini	0.26	0.62	3.83	0.50	0.48	0.64	1.06
3.	Bajaj Hindusthan sugars	0.94	1.77	0.51	0.33	10.41	0.61	2.43
4.	Jeypore sugars	0.47	0.64	1.35	2.47	0.32	1.57	1.14
5.	Vishnu sugars	0.93	0.61	0.65	7.12	0.26	1.13	1.78
6.	Simbhaoli sugars	17.98	0.39	0.38	1.49	0.66	0.72	3.60
7.	Shadilal sugars	0.91	0.36	1.89	1.30	0.54	1.93	1.16
8.	Triveni sugars	0.78	0.43	1.23	1.32	0.59	0.94	0.88
9.	Upper ganesh sugars	0.74	0.88	3.92	0.37	3.67	0.70	1.71
10.	JK sugars	0.84	0.49	9.85	0.15	5.37	1.23	2.99
11.	Ravalgaon sugars	0.52	1.10	6.38	1.41	0.70	8.94	3.18
12.	Renuka sugars	0.64	3.76	0.14	17.69	1.00	1.40	4.11
13.	Ugar sugars	0.95	17.50	1.20	0.79	1.44	0.99	3.81
14.	Belapur sugars	1.06	3.09	0.22	4.59	1.26	1.43	1.06
15.	India sugars	0.13	3.11	1.58	3.03	3.22	0.75	1.97
16.	Oudh sugars	1.52	0.32	4.89	0.46	3.55	0.50	1.87
17.	Girdharilal sugars	4.74	6.12	0.09	0.02	34.76	0.39	7.69
18.	Parry's sugars	0.57	1.17	0.35	2.23	2.07	0.45	1.14
19.	Dhampur sugars	0.51	0.32	1.31	1.89	4.49	0.49	1.50
20.	KM sugars	0.05	1.05	0.87	3.93	0.80	1.04	1.29
21.	Rana sugars	0.64	3.41	0.26	3.95	1.37	0.77	1.73
22.	Kesar enterprises	1.41	1.87	0.90	0.41	8.57	0.55	2.29
23.	Dwarikesh sugars	1.78	1.32	7.90	0.76	1.03	1.37	2.36
24.	Venus sugars	5.40	0.30	0.32	3.60	0.77	1.31	1.95
25.	Mawana sugars	0.70	3.54	0.25	0.96	1.44	5.17	2.01
26.	Monnet sugars	1.06	0.85	0.32	0.53	0.56	0.52	0.64
27.	Piccadilly sugars	1.22	2.28	7.04	1.22	0.69	0.88	2.22
28.	Uttam sugars	5.35	1.11	0.21	1.63	2.16	0.81	1.88
29.	SEBC sugars	0.68	0.05	1.60	0.23	1.31	0.95	0.80
30.	Bannari amman sugars	1.60	0.31	14.11	1.99	0.39	1.68	3.35
31.	Sakthi sugars	2.43	6.90	0.94	1.71	0.67	0.27	2.15
32.	Dharani sugars	0.91	2.37	0.21	1.17	14.52	0.54	3.29
33.	Rajashree sugars	0.92	2.27	1.02	0.68	2.22	0.76	1.31
34.	EID parry	0.71	1.88	1.56	2.18	1.35	1.35	1.51
35.	KCP sugars	1.12	0.74	1.25	1.87	0.24	2.38	1.27
36.	Andhra sugars	1.18	0.42	1.68	1.49	0.33	1.42	1.09
37.	Gayatri sugars	0.98	0.48	4.49	0.63	0.56	10.64	2.96
38.	Thiru arooran sugars	1.22	10.45	0.13	1.57	1.57	6.54	3.58
39.	Kothari sugars	1.07	0.79	1.25	2.32	0.51	1.37	1.22
40.	Empee sugars	0.33	0.82	0.39	0.88	7.72	4.72	2.48
41.	Dalmia sugars	1.84	1.03	1.16	0.67	0.94	0.83	1.08

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proportionate rise in current assets. Average performance indices of forty sugars firms showed in Table 3. Average performance index of thirty seven sugar firms showed very good condition ranged from 4.11 (Renuka sugars) to 1.05 (Riga sugars). On the other hand, Monnet, SEBC sugars and Triveni sugars performance index were lesser than one and proved to be the inefficient management of working capital compared with the other sugar firms. The sugar sector has performed well during 2008-2011 and the index values were 2.02, 2.31, 2.00 and 2.29, respectively. The performance level was reduced from 2.29 in 2011 to 1.84 in 2012 year due to the reduction in the area under sugarcane.

Table 3 depicts that the sugar industry efficiency was at its peak during 2007-2009. It could be observed form the table that overall efficiency of sugar sector with respect to working capital had remained satisfactory as index value of EI_{wcm} was greater than 1 for most of the firms. When it comes to the specific analysis with the exception of Triveni (0.88) and SEBC sugars (0.80) whole sugar sector was efficient during the study period.

Table 3 showed the descriptive statistics of sugar sector firms relating to utilization index, performance index and efficiency index of working capital management. Utilization index of working capital management is an indicator of the sugar firms efficiency in utilizing its current assets as a whole to generate sales. Utilization index would be greater than 1, which is the sign of improvement of the firm. In the study period, overall group utilization of the sugar sector was good. Out of 7 years, the group average for 6 years was greater than 1. The year 2008 proved to be the lowest working capital utilization year as it scored 0.99 index value (lowest) whereas the year of 2011 was the most successful where index value of was 1.24 due to increased level of current assets.

The performance index of the sugar sector was found to be good (greater than 1) during the study period. Efficiency index is the product of performance index and utilization index. It is the measure of ultimate efficiency in working capital management. The sugar sector efficiency index was good throughout the study period. The highest index value of 2.31 found in 2008-09 and the lower value of 1.57 found in 2006-07.

From Table 5 firm specific analysis revealed that the utilization index varied from 1.59 to 0.82 (Ravalgaon sugars and SEBC sugars). On average in most of the firms utilization index values were greater than one. This indicated that firms could efficiently utilize its current assets. The highest average performance index value for Renuka sugars and the lowest index vale was for SEBC sugars. On an average, all the firms have achieved the desired index level of PI_{wcm}. Based on the efficiency index of working capital, Simbhaoli, Ugar,

Table 4 : Descriptive statistics of sugar firms: working capital efficiency

Year	Utilization index			Performance index			Efficiency index		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
2006-2007	0.17	3.24	1.00	0.28	5.55	1.23	0.05	17.98	1.57
2007-2008	0.17	3.35	0.99	0.31	5.23	1.51	0.05	17.50	2.02
2008-2009	0.26	3.00	1.20	0.45	8.31	1.48	0.13	14.11	2.31
2009-2010	0.21	3.35	1.11	0.29	8.30	1.52	0.10	17.69	2.00
2010-2011	0.36	4.48	1.24	0.50	5.45	1.41	0.24	14.52	2.29
2011-2012	0.55	3.12	1.15	0.49	3.41	1.28	0.27	10.64	1.84

Table 5 : WCM index value of sugar sector

Year	Utilization Index			Performance index			Efficiency index		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
Riga sugars	0.33	2.00	0.92	0.29	1.44	0.99	0.10	2.40	1.04
Balrampur chini	0.40	1.85	0.82	0.65	2.07	1.02	0.26	3.83	1.05
Bajaj Hindusthan sugars	0.66	3.32	1.18	0.49	3.14	1.40	0.33	10.41	2.43
Jeypore sugars	0.64	1.42	0.98	0.50	1.74	1.04	0.32	2.47	1.14
Vishnu sugars	0.36	2.24	1.00	0.70	3.18	1.31	0.26	7.12	1.78
Simbhaoli sugars	0.61	3.24	1.23	0.63	5.55	1.62	0.38	17.98	3.60
Shadilal sugars	0.40	1.53	0.97	0.81	1.76	1.12	0.36	1.93	1.15
Triveni sugars	0.59	1.19	0.90	0.73	1.25	0.95	0.43	1.32	0.88
Upper ganesh sugars	0.57	2.1	1.19	0.64	1.87	1.20	0.37	3.92	1.71
JK Sugars	0.39	2.88	1.34	0.40	4.58	1.62	0.15	9.85	2.99
Ravalgaon sugars	0.54	3.05	1.59	0.67	2.93	1.55	0.52	8.94	3.17
Renuka sugars	0.31	2.13	1.10	0.45	8.30	2.44	0.14	17.69	4.10
Ugar sugars	0.78	3.35	1.38	0.99	5.23	1.78	0.79	17.50	3.81
Belapur sugars	0.48	1.34	1.03	0.52	3.43	1.67	0.22	5.59	1.94
India sugars	0.3	2.08	1.27	0.43	3.22	1.46	0.13	3.22	1.97
Oudh sugars	0.52	2.6	1.23	0.62	1.98	1.22	0.32	4.89	1.87
Girdharilal sugars	0.13	6.62	1.94	0.13	5.25	2.01	0.02	34.76	7.68
Parry's sugars	0.52	1.48	0.94	0.64	1.92	1.09	0.35	2.23	1.14
Dhampur sugars	0.43	1.75	0.86	0.67	2.56	1.45	0.32	4.49	1.50
KM Sugars	0.17	1.12	0.75	0.28	4.63	1.59	0.05	3.93	1.29
Rana sugars	0.57	1.64	1.13	0.45	2.44	1.30	0.26	3.95	1.73
Kesar enterprises	0.59	2.9	1.24	0.69	2.96	1.38	0.41	8.57	2.28
Dwarikesh sugars	0.32	2.94	1.15	0.84	5.52	2.22	0.76	7.90	2.36
Venus sugars	0.49	3.35	1.36	0.57	2.70	1.26	0.30	5.40	1.95
Mawana sugars	0.45	2.67	1.19	0.56	3.08	1.46	0.25	5.17	2.01
Monnet sugars	0.70	1.23	1.05	0.77	1.43	1.17	0.32	1.06	0.64
Piccadilly sugars	0.85	3	1.38	0.81	2.35	1.36	0.69	7.04	2.22
Uttam sugars	0.45	2.09	1.12	0.46	2.56	1.42	0.21	5.35	1.88
SEBC sugars	0.17	1.6	0.82	0.31	1.25	0.93	0.05	1.60	0.81
Bannari amman sugars	0.49	1.7	1.12	0.54	8.31	2.27	0.31	14.11	3.35
Sakthi sugars	0.56	2.31	1.22	0.49	2.98	1.40	0.27	6.90	2.15
Dharani sugars	0.34	4.48	1.41	0.62	3.24	1.52	0.21	14.52	3.29
Rajashree sugars	0.86	1.48	1.06	0.79	2.18	1.20	0.68	2.27	1.31
EID parry	0.6	1.54	1.13	0.69	1.61	1.24	0.71	2.18	1.51
KCP sugars	0.45	1.48	1.02	0.54	1.61	1.14	0.24	2.38	1.27
Andhra sugars	0.53	1.32	1.01	0.61	1.28	0.99	0.33	1.68	1.09
Gayatri sugars	0.57	3.12	1.29	0.67	3.41	1.63	0.48	10.64	2.96
Thiru arooran sugars	0.26	2.1	1.35	0.48	5.23	2.08	0.13	10.45	3.58
Kothari sugars	0.69	1.57	1.03	0.74	1.48	1.13	0.51	2.32	1.22
Empee sugars	0.46	1.84	1.00	0.71	5.45	1.90	0.33	7.72	2.48
Dalmia Sugars	0.59	1.4	0.93	0.79	1.58	1.16	0.67	1.84	1.08

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Bannari Amman and Arooran sugars got higher efficiency index average value. The least efficient management working capital management was found in SEBC sugars. From the results it could be concluded that the sugar firms are found to be better managing their current assets in order to generate the desired level of sales. The proportionate rise in the level of sales has remained at the higher level as compared to the proportionate increase in the level of individual level of current assets. Hence, the sugar sector firms may be considered as efficient with respect to working capital performance index.

Conclusion :

The present study was an attempt to investigate the efficiency level of the sugar mills in India for the management of working capital during 2007-2012. Instead of using the common method of analyzing different working capital management ratios, three index values representing the average performance of the components of current assets, the degree of utilization of the total current assets in relation to sales and efficiency in the managing the working capital have been computed for the sample mills for the period of 2007-2012. The results showed that sugar sector as a whole was performing well during the study period and Simbhaoli, Ugar, Bannari Amman and Arooran sugars got higher efficiency index average value. The least efficient management working capital management was found in SEBC sugars.

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