

Liquidity management : A case study of Steel Authority of India Ltd.

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A case study on the liquidity maintained by the Steel giant, its year-to-year change and relationship with profitability.

The general state of liquidity in corporate sector in recent past particularly after the sharp decline in the interest rates has tended to be reasonably good in India. However, many companies both in public and private sector irrespective of their size, age or product range have been experiencing difficulties in meeting their short-term maturing liabilities. Liquidity and profitability are two important and vital aspects of corporate business life. No firm can survive without liquidity. A firm not making profit may be considered as sick but, one having no liquidity may soon meet its downfall and ultimately die. As a matter of fact, liquidity is a pre-requisite for the very survival of a business firm. Liquidity management has thus, become a basic and broad aspect of judging the performance of a corporate entity.

It is, therefore, essential to maintain an adequate degree of liquidity for smooth running of the business operations. The liquidity should be neither excessive nor inadequate. Ex-

cessive liquidity indicates accumulation of idle funds which do not earn any profit for the firm and inadequate liquidity not only adversely affects the credit worthiness of the firm but also interrupts the production process and hampers its earning capacity to a great extent. Thus, the need for efficient liquidity management in corporate business life has always been significant for smooth running of the business. In this paper an attempt has been made to analyse the liquidity management of Steel Authority of India (SAIL), one of the largest and important public sector Steel Manufacturing Company of India for the period 1991-92 to 2001-02. Such an analysis is expected to show and highlight the strengths and weaknesses regarding various aspects of its liquidity and working capital management.

Objectives of the Study

This study has the following broad objectives:

1. To workout the overall quantum of liquidity maintained by the steel sector giant namely the Steel Authority of India Ltd. (SAIL) and also to analyse the

amount tied-up in various components of working capital.

2. To examine the liquidity position of the company during the period under study on the basis of some important parameters of liquidity management such as Current Ratio (CR), Quick Ratio (QR), Current Assets to Total Assets Ratio (CTTR), Cash Position Ratio (CPR), Inventory Turnover Ratio (ITR) and Debtors Turnover Ratio (DTR).
3. To compare the liquidity position of the company from year to year by applying Motaal's Comprehensive test.
4. To measure the extent of relationship between liquidity and profitability by using Spearman's rank correlation coefficient and also to test the significance of such correlation coefficient.
5. To offer necessary suggestions to improve the efficiency of liquidity management of SAIL.

Methodology of the Study

The data and information required for this study for the period

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1991-92 to 2001-02 have been collected from the annual reports of SAIL for various years. For the purpose of analysing the efficiency of liquidity management of SAIL in this study, the technique of ratio analysis, Mootal's comprehensive rank test, statistical techniques like averages, standard deviation, co-efficient variation (C. V.) Spearman's rank correlation etc. have been used. In order to test the significance of relationship between liquidity and profitability worked out by rank correlation co-efficient, students 't' test has also been used.

Case Study of SAIL.

Liquidity refers to the short-term financial strength of a company. The word financial strength is composed of two words viz, 'financial', and 'strength'. The term 'financial' relates to different sources of finance. These sources are classified as internal sources and external sources. The term 'strength' indicates the ability to meet obligations when they become due. According to Herbert B. Mayo, "Liquidity is the ease with which assets may be converted into cash without Losses." Liquidity in the balance sheet needs to balance between earning adequate returns, and the need to cover the financial and business risk. Liquidity also enables a company to make a rapid shift in its direction, should the market so demand. In order to measure the liquidity position of steel major SAIL during the period under study the following six important ratios have been computed.

Current Ratio (CR) : This ratio shows the relationship between current assets and current liabilities of a company. It is an important measure of analysing the firm's ability to payoff its current obligations out of its short-term resources. The higher the CR, the higher is the amount available per rupee of current

Table 1
Ratios Relating to Liquidity Management of SAIL

	C.R.	Q.R.	CPR	CTTR	ITR	DTR
1991-92	1.45	0.19	0.07	0.57	2.00	19.82
1992-93	1.68	0.26	0.05	0.56	1.71	11.37
1993-94	1.72	0.38	0.05	0.55	1.82	7.54
1994-95	1.55	0.35	0.04	0.50	2.17	8.34
1995-96	1.76	0.46	0.11	0.50	2.18	7.41
1996-97	1.97	0.45	0.05	0.48	1.80	7.01
1997-98	2.20	0.50	0.10	0.48	1.59	7.78
1998-99	2.07	0.49	0.06	0.47	1.76	7.80
1999-00	1.35	0.39	0.06	0.42	2.48	8.94
2000-01	1.23	0.37	0.10	0.47	2.86	9.62
2001-02	1.05	0.28	0.06	0.45	3.22	11.16
Average	1.64	0.37	0.07	0.50	2.14	9.71
S.D.	0.34	0.09	0.02	0.04	0.49	3.49
C.Y. (%)	20.73	24.32	28.57	8.00	22.90	35.94

Source: Computed from the annual reports of SAIL from 1991-92 to 2001-02

obligations and accordingly, the higher is the feeling of safety and security. The rule of thumb about the CR is 2 : 1. This rule is based on the logic that in the worse situation even if the possibility of 50% shrinkage in the value of current assets, the firm will be in position to payoff its current obligations. This rule, however, can not be treated as a general guide applicable to all types of businesses. Each firm should develop its own standard for CR from past experience.

Table I shows that the CR in SAIL registered a fluctuating trend during the period under study. It varied between 2.20 in 1997-98 and 1.05 in the year 2001-02. On an average, the CR in SAIL was 1.64 during the period under study. The CR of the company in the last three years of the study was far below the conventional norm of 2:1. It indicates that the liquidity position of the company was not satisfactory. However, no definite inference can be drawn on the basis of this ratio about the liquidity position of the company as CR considers the quantity of current

assets only but fails to consider their quality. Thus, it needs a further analysis of quality of short-term assets.

Quick Ratio (QR) : This ratio is yet another widely used parameter of judging the short-term repaying ability of a firm in the near future. This ratio a refinement over CR as it considers the quality of current assets. This ratio excludes inventories, which is considered slow moving assets in relation to other current assets, thus it can assess the liquidity position of a company more effectively. The rule of thumb about QR is 1:1. It is evident from table 1 that the QR also marked a fluctuating trend during the period under study and ranged between 0.19 in the year 1991-92 and 0.50 in the year 1997-98. On an average the QR in SAIL was 0.37 during the period of study. The QR in SAIL was much below than the conventional norm of 1 : 1 throughout the period of study. It clearly indicates that the liquidity position of the company was not at all satisfactory. It can be concluded that

throughout the period under study liquid assets of SAIL were inadequate to meet its short-term obligations. .

Cash Position Ratio (CPR) : This ratio is also known as Super Quick Ratio. This is still a more rigorous test of liquidity position of a concern. Absolute liquid assets (cash in hand, cash at bank and marketable securities) are divided by current liabilities for computation of this ratio. CPR is interpreted in respect of current obligations. A high CPR is good from the creditors point of view whereas from the management point of view it indicates poor investment policy. Table 1 depicts that CPR in SAIL showed a fluctuating trend during the period under study. It ranged between 0.04 in the year 1994-95 and 0.11 in the year 1995-96. On an average, this ratio was 0.07 during the period of study. This ratio was less than the average ratio in seven years out of total eleven years of study and in remaining four years it was greater than or equal to the average of this ratio. This indicates that the liquidity position of the company in most of the years was not good enough to meet its obligations in time. However, to draw any conclusion in this regard the credit facilities granted by the banks to the company should be taken care of.

Current Assets to Total Assets Ratio (CTTR) : This ratio indicates the extent of total funds invested for working capital purpose. Table I presents that this ratio recorded a decreasing trend under the period of study except in last two years. It was as high as 0.57 in the year 1991-92 and as low as 0.42 in the year 1999-2000. The average percentage of current assets in relation to total assets in SAIL was 0.50 which showed that about 50 percent of funds remained tied-up in working capital and another 50percent remained invested in permanent assets during the period

under study.

Inventory Turnover Ratio (ITR): This ratio focuses light on the inventory control policy adopted by a concern. This ratio shows the relationship between the cost of goods sold during a particular year and inventories kept by a concern during that year. Higher ITR shows higher efficiency of the management and vice versa. It is evident from Table1 that the ITR registered a fluctuating trend during the period under study in SAIL. It varied between 1.59 in the year 1997-98 and 3.22 in the year 2001-02. The average of this ratio was 2.14 during the period under study. It can also be observed from table1 that this ratio started improving after reaching at the lowest (1.59) in the year1 997-98 and reached at the highest during the last year i.e. 2001 -02. It is thus, clear that the management tried to control its inventory levels to a great extent during the later period of the study.

As per the study conducted by CMIE, average ITR of Indian Manufacturing Companies was 2.12 (CMIE, 1998, P.7). The average of ITR in SAIL was slightly higher than the standard set by the CMIE. It is thus, clear that in general the inventory management of SAIL was satisfactory during the period under study and it was more efficient during the later years of the study. .

Debtors Turnover Ratio (DTR) : This ratio throws light on the credit and collection policy pursued by a concern. DTR is an important tool of analysing the efficiency of liquidity management of a company. The liquidity position of a company depends on the quality of debtors to a great extent. It measures the rapidity or the slowness of their collectibility. The high DTR implies the prompt payments made by debtors and vice versa. According to the study conducted by CMIE, average DTR of 11 is considered to be satisfactory in an

Indian manufacturing company (CMIE, 1998, P.7). It can be seen from Table 1 that the DTR also recorded a fluctuating trend during the period under study in SAIL. It was highest in the year 1991 -92 and lowest in the year 1996-97.

On an average, the DTR in SAIL was 9.71 during the period under study. The DTR in SAIL was much lower than the standard set by the CMIE in most of the years under study. It signifies slackness of collection efforts and inefficient credit policy followed by the company.

In Table 1 an effort has also been made to measure the consistency among all six parameters of liquidity management more precisely by applying the statistica technique of coefficient of variation (C. V.). The C. V. is the most commonly used method where the variability between two or more variables are compared. The variable for which the C. V. is greater is said to be more fluctuating or conversely less consistent, less stable or less uniform. On the other hand, the variable for which C. V. is less is regarded as less fluctuating, more consistent, more stable or more homogenous. Table 1 reveals that out of the six different parameters of liquidity management, the CTTR is most consistent and stable followed by CR, ITR, QR, CPR and DTR respectively. The DTR in SAIL is highest variable and inconsistent. It further supports our earlier conclusion and signifies slackness of credit and collection policy pursued by SAIL.

Motaal's Comprehensive Test: In Table 2 an attempt has been made to evaluate the overall liquidity position of SAIL during the period under study more precisely by applying Motaal's comprehensive test. In this test, a method of ranking has been applied to reach at a more comprehensive assessment of liquidity in which four different ratios viz. net

working capital to current assets ratio, inventory to current assets ratio, liquid assets to current assets ratio and loans & advances to current assets ratio have been computed and combined in a points score. A high value of net working capital to current assets ratio or liquid assets to current assets ratio shows greater liquidity and accordingly ranking has been done in that order. On the other hand, a low inventory to current assets ratio or loans & advances to current assets ratio indicates more favourable liquidity position and therefore, ranking has been done accordingly in that order. Ultimate ranking has further been done on the basis that the lower the total of individual ranks, the more favourable is the liquidity position of the concern and vice versa. Table 2 furnishes that in SAIL the year 1995-96 marked the most sound liquidity position and it was followed by the years 1998-99, 1994-95, 1996-97, 1993-94, 1997-98, 2000-01, 1999-2000, 1991-92, 1992-93 and 2001-02.

Co-efficient of Rank Correlation and Testing the Significance: In Table 3 an effort has been made to measure the extent of relationship between liquidity and profitability of SAIL by computing Spearman's rank correlation co-efficient. An attempt has also been made to test whether the computed value of such correlation co-efficient is significant or not, Student's 't' test has further been applied. For this purpose, the ratio of current assets to total assets (CTTR) has been used as the liquidity indicator and the ratio of return on capital employed (ROCE) has been taken as the profitability parameter. Table 3 depicts that the rank correlation co-efficient between CTTR and ROCE of SAIL was 0.745. The Student's 't' test proves that the correlation co-efficient between CTTR and ROCE is statistically significant. It is, therefore, concluded that the liquidity and

Table 2
Ranking in order of liquidity of SAIL

Year	NWC to Current Assets Ratio		Inventory to Current Assets Ratio		Liquid Assets to Current Assets Ratio		Loans & Advances to Current Assets Ratio		Total of Ranks	Ultimate Rank
	%	Rank A	%	Rank B	%	Rank C	%	Rank D	(A+B+C+D)	
1991-92	31.09	8	58.47	10	13.33	11	28.20	1	30	9
1992-93	40.41	6	60.52	11	15.60	10	23.88	5	32	10.5
1993-94	41.92	5	54.02	5	21.93	9	24.05	4	23	5
1994-95	35.41	7	50.41	2	22.64	7	26.95	2	18	3
1995-96	43.25	4	49.34	1	26.24	4	24.42	3	12	1
1996-97	49.33	3	55.06	6	22.84	6	22.10	7	22	4
1997-98	54.52	1	56.31	8	22.55	8	21.14	8	25	6.5
1998-99	51.61	2	52.97	3	23.74	5	23.29	6	16	2
1999-00	25.66	9	55.87	7	28.70	2	15.43	11	29	8
2000-01	18.89	10	53.94	4	30.19	1	15.87	10	25	6.5
2001-02	5.20	11	56.68	9	26.64	3	16.68	9	32	10.5

Source: Computed from the annual reports of SAIL from 1991-92 to 2001-02

Table 3
Rank Correlation between Liquidity and Profitability of SAIL

Year	CTTI		ROCE		(R ₁ -R ₂)	D ²
	%	Rank (R ₁)	%	Rank (R ₂)	D	
1991-92	57.37	1	7.05	6	-5	25
1992-93	56.44	2	7.59	4	-2	4
1993-94	54.68	3	7.89	3	0	0
1994-95	50.35	4	10.22	1	+3	9
1995-96	50.00	5	9.66	2	+3	9
1996-97	47.71	7	7.11	5	+2	4
1997-98	48.06	6	6.09	7	-1	1
1998-99	46.62	8	1.45	9	-1	1
1999-00	42.49	11	0.35	10	+1	1
2000-01	46.59	9	5.69	8	+1	1
2001-02	45.33	10	(-)0.92	11	-1	1
						ΣD ² =56

the profitability moves in the same direction. In other words, the positive correlation between CTTR and ROCE imply favourable impact of the liquidity on the profitability of SAIL.

$$r = 1 -$$

$$r = 1 - \frac{6D^2}{n(n^2-1)} = 0.745$$

Testing the Significance of Correlation Co-efficient

H₀: Null hypothesis is $\frac{11(11^2-1)}{11(11^2-1)}$ There is no

correlation between the ranked data.

H_1 : Alternative hypothesis □ There is a correlation between the ranked data of SAIL. .

α : 0.05 □ Level of significance for testing these hypotheses

$$t = \frac{r}{\sqrt{1-r^2}} \times \sqrt{n-2}$$

$$t = \frac{0.745}{\sqrt{1-0.745^2}} \times \sqrt{11-2} = 5.02$$

Conclusion: The computed value of 't' (5.02) is more than the critical value of 't' (2.26) hence, the null hypothesis is rejected which means there is a significant correlation between liquidity and profitability in SAIL.

Suggestions

1. SAIL should always try to maintain an adequate quantum of net current assets in relation of current liabilities as to keep a good amount of liquidity throughout the year.
2. The company must increase its level of quick assets in relation to current liabilities which will also increase the ratio of net working capital to current liabilities.
3. The company must maintain a reasonable level of absolute liquid assets in order to meet short-term commitments and emergency requirements. This will also help the company in increasing its working capital margin. The company may also make adequate arrangement of credit facilities with banks as to maintain good amount of liquidity at its end.
4. The inventory of slow moving items should be reduced to the maximum possible extent. Suitable format presenting the level of different components of in-

ventory at fixed time interval be introduced to exercise an effective control on the overall inventories maintained by SAIL.

5. The company should tighten the debt collection efforts and should reduce the amount tied-up in debtors. In order to improve the quality of debtors and also to bring down the amount tied-up in debtors, a periodical report of the overdue may be prepared and effective action may be taken by the management time to time to expedite the collections.
6. The overall state of liquidity should be improved as to put a favourable impact on the profitability of SAIL. The Spearman's rank correlation co-efficient and student's 't' test has earlier confirmed that there is a significant positive association between liquidity and profitability of the company during the period under study.
7. The management of SAIL should also try to maintain a definite proportion among various components of working capital in relation to overall current assets to keep an adequate quantum of liquidity all the times. Such proportion can be worked out on the basis of past experience by the management of SAIL.

References:

1. Basu S.N. (1992) : "Working Capital Management - Tyre Companies", The Management Accountant, Vol. 27, No.5, Calcutta, P. 332.
2. Bardia Dr. S.C. (2001): Liquidity of Working Capital: An overview of five Indian Petrochemical Companies, Economic Administration Review, Vol. I No.2, Jaipur, P. 151 - 158.

3. George E. Pinches (1990) "Element of Financial Management" Third Edition, Harper Collins Publishers, Newyork.
4. Guthman S.G. and Dougall H.E. (1995) : Corporate Financial Policy, New York, Printice Hall, P 61.
5. "Industry, Financial Aggregates & Ratios", Centre for Monitoring Indian Economy (P) Ltd. Bombay, June 1998, P 7.
6. Pandey I.M. (1995) : "Financial Management" Seventh Edition, Vikas Publishing House (P) Ltd., New Delhi, India. .
7. Parashar S.P. (1996) : "Liquidity Management : Principles and Practices (of Managing Cash Flow", New Delhi, Vision Book (P) Ltd., P 9.
8. Ravi M. Kishore (2001) : "Financial Management" Second Edition, Taxmann allied Services (P) Limited, New Delhi, India.
9. Richard I. Levin and David S. Rubin (1995) : "Statistics for Management", Prentice - Hall (of India (P) Ltd., New Delhi, P 738.
10. S. H., PM. Reddy and C.S. Reddy (1999) : "Liquidity in Small Scale: Industries : An Analysis", Management Perspective Journal, Vol. 2 No. 1, P 48.
11. Sur D. (2001) : "Liquidity Management : An overview (of four Companies in Indian Power Sector", The Management Accountant, " Vol. 36, No.6, Kolkata, P 407-412.
12. Valrshney Satish- Chandra (2001) : "Trade Credit & Company Liquidity", The Management Account, Vol. 36, No. 10, Kolkata, .p 738-756. □