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Analysis of Liquidity Management in Companies Registered with BSE Sensex

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Abstract

Inefficient management of working capital leads to not only loss of profits but also to the state of insolvency and the closure of the business. Sufficient liquidity is important to provide funds to pay off obligations as they arise or mature. The adequacy of cash and other current assets together with their efficient handling, virtually determine the survival of the company. With the aim of analyzing the liquidity performance during the Post-Liberalization Period of companies which were listed in the BSE Sensex Index, the present study was carried out during the period from 1994 to 2008. It is found that the sample companies during the second phase were better with reference to the liquidity position.

Key words: Asset-liability Management, Sensex, Liquidity Management, Ratio analysis

Introduction

Any business requires funds to meet short-term purposes such as purchase of raw materials, payment of wages and other day-to-day expenses. These funds are called Working Capital. An inefficient management of working capital leads to not only loss of profits but also to the state of insolvency and closure of business. Solvency means the ability of the firm to pay its obligations and Short Term Solvency Position means the ability of the firm to pay its obligations in the short term period. Sufficient liquidity is important and must be achieved and maintained to provide funds to pay off

obligations as they arise or mature. The adequacy of cash and other current assets together with their efficient handling, virtually determine the survival of the company. A businessman should be able to judge the accurate requirement of Working Capital and should be quick enough to raise required funds to meet them.

Review of Literature

There have been numerous studies on Liquidity Management both in India and abroad in the last four decades and several theories

have been proposed and tested for empirical validation. To evaluate the liquidity performance, the following reviews were collected.

Bardia (2002) in his study focused on measuring the relationship between liquidity and profitability of the firm and found that there is a significant correlation between liquidity and profitability. Marc Deloof (2003) made an attempt to examine the relationship between Working Capital Management and Corporate Profitability in a sample of 1009 large Belgian non-financial firms for the period 1992-1996. The results suggest that managers can increase corporate profitability by reducing the number of days of accounts receivable and inventories. Ioannis Lazaridis and Dimitrios Tryfonidis (2006) in their paper investigated the relationship between Corporate Profitability and Working Capital Management, the Cash Conversion Cycle and its components for listed firms in the ASE. They found that there was a strong negative relationship between the Cash Conversion Cycle and Corporate Profitability in the listed American firms during the study period.

A research paper by Kessavan Padachi (2006) focused on Working Capital Management and its impact on the firms' performance in 58 Mauritian Small Manufacturing Firms using panel data analysis for the period 1998-2003. The findings of the study revealed an increasing trend in the short-term component of working-capital financing. They found very little evidence for the existence of a positive relationship between a firm's Working Capital Management and its Profitability. The above studies established that the liquidity

performance of the companies in the samples were better in the Post LPG Era i.e. after 1991.

A study done by Jeyachitra *et al.*, (2010) investigated that the Cement Industry was efficiently managing their receivables.

Statement of the Problem

The need for Working Capital Management arises from two considerations. First, the fixed assets, which usually require a large amount of total funds, can be used at the optimum level only if supported by adequate working capital and secondly, it involves the investment of the funds of the firm. If the Working Capital is not properly maintained and managed, then it may result in unnecessary blocking of the scarce resources of the firm. Insufficient Working Capital will impose hindrances on the smooth working of the firm. If the firm maintains standard and sufficient level of current assets to be covered with current liabilities, the firm is deemed to be solvent. This study was conducted to analyze the liquidity position of the BSE-SENSEX-Companies. Many studies were conducted to find the relationship between the Liquidity and Profitability of particular firms over a limited period. But the present study tries to find the liquidity management practices of the sample companies and the mode of financing of short term assets during a long period of time from 1994 to 2008 in two phases, i.e. 1994-2000 as the First Phase and 2001-2008 as the Second Phase.

Need for the Study

Working Capital Management is concerned with the management of current assets and current liabilities of a firm and the

relationship between them in such a way that a satisfactory level of Working Capital is maintained to prevent the firm from going insolvent. Current assets should be large enough to cover current liabilities in order to ensure a reasonable margin of safety. At the same time, current assets must be managed efficiently in order to maintain an optimal liquidity level. The present study tries to find the changes, which may be either positive or negative, in the two phases by comparing the liquidity position of the sample companies in the Second Phase with that in the First Phase.

Objectives of the Study

The main objective of the present study is to examine the Liquidity Management Practices followed by the sample companies during the Post-Liberalization Period. It also proposes to offer findings and suggestions based on the analysis.

Hypothesis of the Study

The following null hypothesis was formulated to test the present study. H_0 : There is no significant change in the liquidity ratios of sample companies during the second phase of the study period compared with that in the first.

Methodology of the Study

a) Sample Selection

The study was concerned with the companies listed on the BSE SENSEX as on 24th

December 2008. Among 30 companies listed, only 26 were chosen for this study because the other 4 companies belong to the bank and financial sector. The details of companies in the sample are depicted in Table 1.

b) Period of the Study

To analyze the liquidity position of the companies and the impact of liberalization and globalization, relevant data were collected from 1994 to 2008. For the purpose of analysis, the study period was divided into two phases i.e. First Phase as 1994 to 2000 and Second Phase as 2001 to 2008. The study could not be extended beyond 1991 for want of data.

c) Sources of Data

To know the liquidity position of the companies and to the impact of liberalization and globalization, relevant data were collected from Centre for the Monitoring the Indian Economy (CMIE) Corporate Database. Other relevant information was obtained from books, journals and websites.

d) Tools used in the study

The collected data were analyzed with the help of Ratio Analyses and statistical tools used to test the liquidity position of the sample companies during the Post Liberalization Period.

Table.1 The Details of Sample Companies

Sl. No.	Name of the Sample Companies	Sector
1.	ACC Ltd.	Housing Related
2.	Ambuja Cements Ltd.	Housing Related
3.	Bharat Heavy Electricals Ltd.	Capital Goods
4.	Bharti Airtel Ltd.	Telecom
5.	Cipla Ltd.	Healthcare
6.	DLF Ltd.	Housing Related
7.	Grasim Industries Ltd.	Diversified
8.	Hindalco Industries Ltd.	Metal, Metal Products & Mining
9.	Hindustan Unilever Ltd.	FMCG
10.	Infosys Technologies Ltd.	Information Technology
11.	ITC Ltd.	FMCG
12.	Jaiprakash Associates Ltd.	Housing Related
13.	Larsen & Toubro Limited	Capital Goods
14.	Mahindra & Mahindra Ltd.	Transport Equipments
15.	Maruti Suzuki India Ltd.	Transport Equipments
16.	NTPC Ltd.	Power
17.	ONGC Ltd.	Oil & Gas
18.	Ranbaxy Laboratories Ltd.	Healthcare
19.	Reliance Communications Limited	Telecom
20.	Reliance Industries Ltd.	Oil & Gas
21.	Reliance Infrastructure Ltd.	Power
22.	Satyam Computer Services Ltd.	Information Technology
23.	Tata Consultancy Services Limited	Information Technology
24.	Tata Motors Ltd.	Transport Equipments
25.	Tata Steel Ltd.	Metal, Metal Products & Mining
26.	Wipro Ltd.	Information Technology

Source: www.bseindia.com

I. Analysis of Liquidity Management

In order to measure the liquidity position of the sample companies, Current Ratio (CR), Quick Ratio (QR) and Current Assets Turnover Ratio (CATR) were used.

II. Statistical Tools

To test significance level of the calculated ratios, t- Test was used. In addition to this descriptive statistics like Mean, Median and Quartiles were computed. Correlation was used

to measure the association (strength) or the relationship between two variables. It varies from 0 (random relationship) to 1 (perfect linear relationship) or -1 (perfect negative linear relationship). It is usually reported in terms of its square (r^2) and interpreted as percentage of variance.

Analysis of the Study

Maintenance of adequate liquidity to honor current / short-term maturing obligations without impairing profitability is the foremost

requirement of sound and efficient Working Capital Management. Current Ratio (CR), Quick Ratio (QR) and Current Asset Turnover Ratio (CATR) are standard measures of efficiency of Liquidity Management. Efficiency of the business processes, managing inventories, debtors and cash, access to sources of funds and the ease with which these funds can be tapped, have a direct impact on these ratios.

a) Current Ratio (CR)

Table 2 shows the mean, median and quartile values of Current Ratio of the sample BSE SENSEX companies during 1994 to 2008. The table indicates that the companies in the sample have generated different levels of mean, mode and quartile values.

Table. 2 Mean, Median and Quartile Values Related to Current Ratio of Sample BSE Sensex Companies, 1994-2008

Year	No. of Companies	Mean	Median	Quartile 1	Quartile 3
1994	20	1.75	1.64	1.22	2.27
1995	21	1.60	1.41	1.07	2.06
1996	21	1.57	1.43	1.04	1.88
1997	21	1.60	1.50	1.14	1.86
1998	20	1.73	1.58	1.18	2.17
1999	23	1.72	1.39	1.10	1.75
2000	23	1.52	1.23	0.92	1.62
1994-2000	21	1.64	1.45	1.09	1.94
2001	23	1.38	1.33	0.81	1.71
2002	25	1.54	1.23	0.83	1.64
2003	25	1.31	0.95	0.70	1.44
2004	26	1.12	0.92	0.72	1.21
2005	26	1.42	1.20	0.70	1.46
2006	26	1.40	1.17	0.67	1.69
2007	23	1.42	1.22	0.94	1.57
2008	23	1.27	0.97	0.71	1.61
2001-2008	25	1.36	1.12	0.76	1.54
1994-2008	23	1.50	1.29	0.93	1.74

Source: Computed from PROWESS Database

It is observed from the Table that mean and median values of sample companies have consistently decreased from 1.75 and 1.64 in 1994 to 1.27 and 0.97 in 2008 respectively. During the first phase of the study from 1994 to 2000, the sample companies maintained their cash and bank balances, sundry debtors and inventories to the level of 1.64. But, during the second phase of study period from i.e. 2001 to 2008, the sample companies obtained the lowest average value of 1.36. This is again proved by other measures of central tendency like quartile 1 (median of the lower half of the data) and quartile 3 (median of the upper half of data). From the overall analysis of the study, all the sample companies have possessed lower average value of Current Ratio than the standard ratio of 2:1 during the whole period of study. This may perhaps to be attributed to mismanagement of business processes like inventory management and inefficient use of flexible working finance options like cash-credit limits and overdrafts. Therefore the sample companies should concentrate on the maintenance of adequate inventory according to production requirements and should limit the credit period to the debtors.

Frequency-distribution related to the Current Ratio of the sample BSE SENSEX companies for the period 1994-2008 are clearly shown in Table 3. About 19 percent of sample companies maintained their Current Ratio below 1 in the First Phase (1994-2000). On the other hand, in the Second Phase (2001-2008), the Current Ratio increased to 43 percent. During the First Phase, about 18 percent of sample companies maintained their Current Ratio between 1.75 and 2.25 and in the Second Phase, it decreased to about 8 percent. This illustrates

the poor management as the sample companies have shown a Current Ratio deviant from the standard ratio of 2:1. The Second Phase was much lower than the First Phase. Hence the sample companies should try to improve all types of current assets like stock, sundry debtors, cash and bank balances.

b) Quick Ratio (QR)

Mean, Median and Quartile Values related to Quick Ratio of the sample BSE SENSEX companies are given in Table 4. This Table explains that the mean and median values decreased from 1.08 and 0.76 to 0.81 to 0.46 respectively. Quartile 1 and Quartile 3 also prove the above results. The average of First Phase (1994-2000), 0.97, was higher than the average of Second Phase (2001-2008), 0.86, which was below the standard ratio of 1:1. This reflects the insufficient management of monetary assets. Hence the sample companies must take adequate control over the financing facilities like cash credit limit and overdraft provided by banks.

Table 5 represents the percentage holding of various levels of Quick Ratio i.e. the frequency distribution related to Quick Ratio of the sample BSE SENSEX companies during the period 1994-2008. About 16 percent of sample companies maintained their Quick Ratio between 0.8 and 1.20 in the First Phase while in the Second Phase it fell to about 11 percent. Then about 16 percent of the sample companies maintained Quick Ratios between 1.2 and 2.0 in the First Phase, whereas in the Second Phase, it went to about 7 percent. This shows that in the Second Phase the companies had the lower Quick Ratio compared to the standard level of 1:1. This

implies that the liquidity position of the sample companies were very poor. Hence they need to increase their monetary assets in order to satisfy current obligations.

c) Current Assets Turnover Ratio (CATR)

Mean, Median and Quartile Values of Current Assets Turnover Ratio are clearly shown in the Table 6. All the values i.e., mean, median, quartile 1 and quartile 3 considerably rose during the study period. The average value for the entire period (1994-2008) is 2.65 and this shows that the sample companies were able to sustain sales at the rate of more than 2.5 times their investment in current assets. With reference to the First Phase, this is about 2.4 times and in Second Phase, it is about 2.8 times. This indicated a marginal increase in efficiency. In the Second Phase, the sample companies have tried to improve their sales. To maintain this efficiency, the companies should take some steps to increase their sales.

Table 7 represents the t-test related to liquidity ratios of sample BSE SENSEX companies during the period 1994-2008. This test was conducted for the set of liquidity ratios like Current Ratio, Quick Ratio and Current Assets Turnover Ratio in order to ascertain whether there was any significant change in the Liquidity Management Practices of the sample companies during the Second Phase (2001-2008). This test proved that there was significant change in the Second Phase.

Testing of Hypothesis

The significant values i.e. Current Ratio of 0.003, Quick Ratio of 0.0152 and Current Asset

Turnover Ratio of 0.015 were less than or equal to 0.05, confirming the significance of the change in the Second Phase (2001-2008). Therefore, the null hypothesis i.e. there is no significant change in the liquidity ratios of sample companies during the Second Phase of the study period, is rejected. The alternate hypothesis i.e. there is significant change in the liquidity ratios of sample companies during the Second Phase of the study period is accepted.

Findings of the Study

1. During the First Phase, about 18 percent of sample companies maintained their Current Ratio between 1.75 and 2.25 and in the Second Phase, it decreased to about 8 percent. This indicates the poor management as the sample companies had a lower percentage of holding when compared to the standard ratio of 2:1. The Second Phase registered a much lower percentage. This may perhaps be attributed to mismanagement of business processes like inventory and inefficient use of flexible working financing options like cash-credit limits and overdrafts.

2. About 16 percent of sample companies maintained the Quick Ratio between 0.8 and 1.20 in the First Phase and in the Second Phase it fell to about 11 percent. This means that the Second Phase had a much lower percentage of holding as reflected in the Quick Ratio compared to the standard level of 1:1. This indicates the insufficient management of monetary assets.

3. With reference to the First Phase, Current Assets Turnover Ratio was about 2.4 times and in Second Phase, this was about 2.8 times. This proves the efficient functioning of

the sample companies. In the Second Phase, the sample companies tried to improve their sales more than in the First Phase, and this implies their improvement.

4. About 34 percent of sample companies maintained this ratio to the level of 70 percent to 90 percent in the First Phase and in the Second Phase, it increased i.e., about 61 percent of sample companies maintained this level. This shows that there was an increasing trend in the Second Phase (2001-2008) when compared with the First Phase (1994-2000). This points to the efficient handling of the current liabilities.

Suggestions of the Study

- ❖ The sample companies need to concentrate on the maintenance of adequate inventory according to production needs and should limit the credit period to the debtors.
- ❖ The sample companies need to increase their monetary assets in order to satisfy current obligations. They must take adequate control over financing facilities like cash-credit limit and overdraft provided by banks.
- ❖ To maintain the efficiency, the companies should take some steps to increase further sales.
- ❖ The Second Phase was better than the First Phase in the current liabilities to current assets ratio but the sample companies should try to improve further.

Conclusion

Gradual increase in profit results in capital growth of the firm. Increasing sales volume results in increasing profits. Sales are done on either cash or credit basis. Sale of goods will not be converted into cash immediately, when sales are executed on credit basis. Therefore, additional capital was required to have uninterrupted business operations as the sales amount got locked up in current assets like accounts receivable, inventory etc. The firm needed extra funds for carrying out regular operations on day-to-day basis till accounts receivables are converted into cash and hence experienced the shortage of Working Capital. From the overall analysis, it is concluded that the Second Phase was better with reference to the Current Assets Turnover Ratio and current liabilities to current assets ratio and the liquidity ratios like Current Ratio and Quick Ratio were much lower compared with the standard level. The sample companies should improve them immediately. Other factors like share of creditors, short-term bank borrowings, and provisions increased in the Second Phase but not to a satisfactory level. Hence they should be improved further. The money raised through short term debts, necessarily need to be invested efficiently in order to get adequate profits from the business.

Table - 3 Frequency Distribution Related to Current Ratio of Sample BSE Sensex Companies, 1994-2008

Current Ratio	First phase							Second phase							
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<1.0	14.29	18.18	18.18	18.18	19.05	16.67	33.33	37.50	33.33	53.85	61.54	40.74	37.04	33.33	54.17
1.0-1.75	33.33	40.91	40.91	45.45	42.86	58.33	50.00	37.50	41.67	26.92	30.77	44.44	40.74	51.85	29.17
1.75-2.25	19.05	27.27	27.27	22.73	19.05	8.33	4.17	16.67	8.33	7.69	3.85	3.70	11.11	7.41	8.33
2.25-5.0	33.33	13.64	13.64	13.64	19.05	12.50	12.50	8.33	12.50	7.69	0.00	7.41	7.41	3.70	8.33
>5.0	0.00	0.00	0.00	0.00	0.00	4.17	0.00	0.00	4.17	3.85	3.85	3.70	3.70	3.70	0.00
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
No. of Companies	20	21	21	21	20	23	23	23	23	25	25	26	26	26	23

Source: Computed from PROWESS Database

Table - 4 Mean, Median and Quartile values related to Quick ratio of sample BSE Sensex Companies, 1994-2008

Year	No. of Companies	Mean	Median	Quartile 1	Quartile 3
1994	20	1.08	0.76	0.61	1.29
1995	21	0.93	0.65	0.44	0.99
1996	21	0.87	0.64	0.42	1.28
1997	21	0.87	0.73	0.40	1.16
1998	20	1.07	0.82	0.60	1.30
1999	23	1.07	0.73	0.51	1.00
2000	23	0.91	0.53	0.40	0.81
1994-2000	21	0.97	0.69	0.48	1.12
2001	23	0.76	0.50	0.35	0.75
2002	23	0.91	0.55	0.36	0.71
2003	25	0.78	0.39	0.27	0.66
2004	25	0.70	0.50	0.19	0.66
2005	26	0.98	0.60	0.25	1.05
2006	26	0.96	0.63	0.32	1.07
2007	26	0.96	0.62	0.38	1.10
2008	23	0.81	0.46	0.33	0.70
2001-2008	25	0.86	0.53	0.31	0.84
1994-2008	23	0.91	0.61	0.39	0.97

Source: Computed from PROWESS Database