Mizoram University Journal of Humanities & Social Sciences
(A National Refereed Bi-Annual Journal) Vol I Issue 2, Dec 2015 ISSN: 2395-7352

An Empirical Study of Liquidity Management in Indian Public Sector Petroleum Companies

Pranesh Debnath

Abstract

The Public Sector Enterprises (PSEs) are considered as major instruments of state intervention in economic activities, especially in developing economies. Liquidity is the ability of a company to meet the short term obligations. Liquidity management is very important issue in the growth and survival of business. In this paper, a comparative study on the liquidity position of the select public sector petroleum companies in India during the period of 15 years (i.e. from 1998-99 to 2012-13) has been made. The study is based on secondary data collected from the Annual Reports published by the Department of Public Enterprise, Government of India. The techniques of mean, standard deviation, coefficient of variation, and ratio analysis, have been applied to analyse the data and Motaal's ultimate rank test has been used for ranking the companies based on liquidity position during the study period. The study found that the liquidity position of the companies under the study was not so good over the study period. Further, it is found that the GAIL is awarded Rank I, indicating the most liquid company among the five, followed by the IOCL (ranked II), the BPCL and the CPCL (both ranked III), and the HPCL (ranked IV).

Key words: Liquidity, Public enterprise, Motaal's ultimate rank test, Working capital.

Introduction

Liquidity is the ability of a company to meet the short term obligations. It indicates how fast the company is in converting its assets into cash. Short term liabilities generally signify obligations which are supposed to mature within one accounting year. A company has to meet its short term liabilities in time. It must confirm that it has sufficient cash and cash equivalents to be able to meet its short term obligations. This is indicated by the company's level of liquidity. Failure to meet the short term liabilities may affect the company's operations and in many cases it may affect its reputation too. Lack of cash or liquid assets on hand may force a company to miss the incentives given by the suppliers of credit. Loss of such incentives may result in higher cost of goods which in turn affect the profitability of the business in long run. So there is always a need for the company to maintain

certain degree of liquidity. However, there is no standard norm for liquidity. It depends on the nature of the business, scale of operations, location of the business and many other factors.

Every stakeholder has interest in the liquidity position of a company. Supplier of goods will check the liquidity of the company before selling goods on credit. Employees are also having interest in the liquidity to know whether the company can meet their obligations: salary, pension, provident fund etc. Shareholders are interested in understanding the liquidity due to its huge impact on the profitability. Shareholders may not like high liquidity as profitability and liquidity are inversely related. However, shareholders are also aware that non-liquidity will deprive the company from getting incentives from the suppliers, creditors, and bankers.

Every business organisation has to manage its liquidity position properly in order to avoid or minimise the risk related to it. The two key elements of liquidity risk are short-term cash flow risk and long-term funding risk. The long-term funding risk includes the risk that loans may not be available when the business requires them or that such funds will not be available for the required term or at acceptable cost. All businesses need to manage liquidity risk to ensure that they remain solvent. Liquidity risk can arise from a number of areas within the business, including: seasonal fluctuations, unplanned reduction in revenue, sustained reduction in profitability, unplanned capital expenditure, and increase in operational costs. Liquidity is dynamic and can change according to both business and market conditions. These conditions can be both expected and unexpected, and will give rise to the need to ensure adequate liquidity to cover all events. In the event that a business faces a cash flow crisis, then the consequences can be: impact on supply of goods or services due to inability to meet payment terms, inability to meet capital expansion plans, breaching bank loan covenants, increase in penalties for non-payments and late payments, such as tax obligations. It is common phenomena that every firm attempts to exploit the profitability leaving the much bothering about liquidity position. However, boosting the profits by compromising liquidity might cause serious trouble to the firm and this problem might lead to financial downfall as well in long run. Thus an effective and efficient working capital management would be needed to strike a balance between the two core objectives of the firm. It is crucial that the firm's liquidity should be properly balanced. Because, excessive liquidity on one hand indicates the accumulation of idle funds that don't fetch any profits for the firm and on the other hand, inadequate liquidity might harm the firm's goodwill, weaken firm's credit standings and that might lead to forced liquidation of firm's assets. Afterwards problems like bankruptcy and insolvency might happen.

To sum up, a company unable to make profits might be termed as a sick company

but, a company having insufficient liquidity might cease to exist. Working capital management is one of the most important areas while making the liquidity and profitability comparisons among firms involving the decision of the amount and composition of current assets and the financing of these assets. In this context, the liquidity ratios are a good measure to know whether a company will be able to meet its short term obligations comfortably. Shin and Soenem (1998) argued that efficient working capital management is very important to create value for the shareholders while Smith (1980) emphasized that profitability and liquidity are the salient goals of working capital management. Therefore, there is a need to balance working capital position of the business enterprise in order to maintain adequate liquidity, minimize risks and raise profitability, at all times, and especially in periods of intense financial crises as it exists at the global level today.

Literature Review

Anitha and Nowfal (2014) have made an attempt to investigate the relationship between liquidity management and profitability. To achieve this objective, the financial ratios, Mootal's comprehensive test, Spearman's rank correlation, etc were applied. This study also explored the impact of liquidity components viz, size of working capital, current ratio, absolute liquidity ratio, current assets to total assets, current assets to turnover ratios, working capital turnover ratio, and debtors' turnover ratio on profitability. The study concluded that the liquidity components were having high influence over profitability of any company. Panigrahi (2014) found that even with having negative working capital in most of the times, the company was able to earn a good rate of return because of its aggressive working capital policy but its solvency was ultimately at a stake.

Priya and Nimalathasan (2013) attempted to study the effect of changes in liquidity levels on profitability of manufacturing companies in Sri Lanka. Correlation and regression techniques were used for the analysis, and the findings suggest that there was a significant relationship between liquidity and profitability of the listed manufacturing companies in Sri Lanka.

Panigrahi (2013) found that the selected companies are having low average return on asset and return on equity with significantly negative cash conversion cycle.Panigrahi (2013a) attempted to examine the relationship between inventory conversion period and firm's profitability. The findings indicate that inventory conversion period has an inverse relationship with firm's profitability i.e. when the inventory conversion period days increase the profitability of firm decreases and vice versa.

Egbideet et al (2013) observed that the current ratio and the liquidity ratio were positively associated with profitability while the cash conversion period was negatively related with the

profitability of manufacturing companies in Nigeria. The association in all the cases was however, statistically insignificant, indicating a low degree of influence of liquidity on the profitability of manufacturing companies.

Panigrahi (2013b) made a comparative study on the liquidity position of five leading Indian cement companies.

The study covers a period of 10 years viz, 2000-2001 to 2009-2010. For the purpose of investigation, the secondary data was used. The techniques of mean, standard deviation, coefficient of variation, ratio analysis, and Motaal's ultimate rank test have been applied to analyse the data. The study found that the liquidity position of small companies was better than the big ones, and most interestingly the growth rate of current ratio, quick ratio and working capital to current assets of all the companies were negative which indicates an unsound liquidity position. Panigrahi (2013c) documented the experiences of companies generating good profit with a negative working capital as well as companies not able to generate good profit even with having good amount of positive working capital.

Nandi (2012) made an attempt to assess the trends in liquidity management and their impact on profitability. On the basis of overall analysis, it was found that the selected company always tries to maintain adequate amount of net working capital in relation to current liabilities so as to keep a good amount of liquidity throughout the study period.

Panigrahi (2012) observed that there is a moderate relationship between working capital management and firm's profitability. It can be said that there exists a relationship between the efficiency of working capital and the profitability, but the relationship is not statistically significant. De Zoysa et al (2009), by using the pragmatic data on 161 listed manufacturing companies in Sri Lanka and Malaysia over the period of 2006-2008, found that during this period Sri Lankan manufacturing companies were considerably more profitable than their counterparts in Malaysia in terms of ROA but less profitable in terms of ROE.

Koumanakos (2008) stated that the higher the average inventories are conserved the lower the rate of return.

Teruel and Solano (2007) explained that a company's profitability would be increased by reducing days in receivables, days in inventories and length of cash cycle.

Padachi (2006) found that if the firm is invested higher in the inventories then the optimum level will diminish and profit will go down.

Abuzar and Elijelly (2004) in their study empirically scrutinized the association between profitability and liquidity, as measured by current ratio and cash gap (cash conversion cycle) for a sample of joint stock companies in Saudi Arabia. The study concluded that there

exists a significant negative association between the firm's profitability and its liquidity level, as measured by current ratio.

Richard and Oppedahl (1990) stated that the goals of investment in working capital were threefold: to find income producing opportunities for cash that is temporarily idle, to maximize yield, and to maintain the liquidity of the investment.

Shin and Soenen (1998) found significant impact of efficient cash cycle conversion management on profitability and liquidity of companies.

Rajeswara (1985) observed the working capital policies of public enterprises in India and found that working capital efficiency could not be attained by majority of the selected companies.

The results of the study conducted by Marcus (1969) suggest that the firm's size influences profitability in some, but not all industries.

Objectives and Methodology

Objectives: Keeping in view the importance of petroleum sector in India's economic growth scenario, this paper aims at evaluating the liquidity management of five leading petroleum companies over a period of 15 years (1998-99 to 2012-13). More specifically, the objectives of the study are: to assess the management of liquidity and its adequacy in the select petroleum companies; and to compare the liquidity position of the companies under the study.

Sample: A sample of five petroleum companies viz, Bharat Petroleum Corporation Ltd (BPCL), Hindustan Petroleum Corporation Ltd (HPCL), Indian Oil Petroleum Corporation Ltd (IOCL), Gas Authority of India Ltd (GAIL), and Chennai Petroleum Corporation Ltd (CPCL) were selected for the study. The criteria followed for selecting the companies are: the company must be a public enterprise; it must be in operation at least since 1998-99; and it must be within top 25 ranks as per ET-500 rankings.

Data: The data for the study period of 15 years starting from 1998-99 to 2012-13 have been collected from secondary sources i.e. Annual Reports published by the Department of Public Enterprise, Government of India.

Techniques: The statistical techniques viz, percentages, mean, Standard Deviation (SD), Coefficient of Variation (CV), Motaal's ultimate rank test have been used for data analysis in this study.

Motaal prescribes a comprehensive test for determining the soundness of a firm as regards liquidity position. According to him, a process of ranking is used to arrive at a more comprehensive measure of liquidity in which the three ratios are combined in a point score as Working Capital (WC) to Current Asset Ratio; Stock to Current Asset Ratio; and Liquid Resources (LR) to Current Asset Ratio.

The higher the value of both working capital to current asset ratio, and liquid resources to current asset ratio,

relatively the more favourable will be the liquidity position of a firm and vice-versa. On the other hand, lower the value of stock to current assets ratio, relatively the more favourable will be the liquidity position of the firm. The ranking of the above three ratios of a firm over a period of time is done in their order of preferences. Finally, the ultimate ranking is done on the basis of the principle that the lower the points score, the more favourable will be the liquidity position and vice-versa.

Results and Discussion

In order to study the liquidity position of the select petroleum companies, the liquid ratios, amount invested in liquid assets, working capital and other related ratios were calculated as shown in Tables 1-5.

Table 1: Ratios in respect of Bharat Petroleum Corporation Ltd (BPCL)

Bharat Petroleum Corporation Ltd (Rs in Lakh)										
Year	CA	CL	WC	Stock	QA	CR	QR	WC to CA	Stock to CA	QA to CA
Mean	1602437	1563459	38977.7	804730	797707	1.13	0.53	8.95	52.58	47.42
Growth	3514535	3978802	-464267	1532199	1982336	-0.22	-0.14	-21.6613	1.3	-1.3
Growth Rate	1083.24	1369.46	-1369.2	1119.72	1056.64	-19.48	-21.29	-207.264	3.08	-2.25
SD	1191685	1442023	383917	511058	704507	0.19	0.1	16.3482	8.1	8.1
CV	74.37	92.23	984.96	63.51	88.32	16.95	18.01	182.732	15.4	17.07

Note: CA stands for Current Assets, CL stands for Current Liabilities, WC stands for Working Capital, QA stands for Quick Assets, CR stands for Current Ratio, QR stands for Quick Ratio.

Source: Calculations are based on information provided in the Annual Reports of the Department of Public Enterprise, Government of India.

It is evident from the Table 1 that in case of BPCL, the current assets have shown a growth rate of around 1083% whereas the current liabilities have grown around 1370% which is more than the growth rate of current assets in last 15 years. The standard deviation of the current assets was Rs.11, 91,685.05 lakhs and the coefficient of variation was 74.37%, which shows a steady and fast growth of current assets during the period of study. The growth rate of current liabilities was 1369.46% with a standard deviation of Rs. 14, 42,023.20 lakhs and a CV of 92.23%. The growth rate of working capital was negative to the extent of -1369.20% with a SD of Rs.3, 83,916.81 lakhs and a CV of 984.96%. A negative growth in working capital and a higher CV rate indicates a faster growth of current liabilities as compared to current assets with a greater variation during the period. The quick assets also have registered a growth rate of 1056.64% with a SD of Rs. 7, 04,506.63 lakhs and a CV of 88.32%. These findings indicate a very worse liquidity crunch in the company and the variability in working

capital as well as quick assets are much lower than the expected, which indicates a constant instability in the liquidity position of the company. When the liquidity ratios of BPCL were analysed, it is found that both the current ratio and quick ratio have registered a negative growth i.e. -19.48% and -21.29% respectively. The negative growth in both the ratios indicates that the liquidity position of the company has been degraded over the years. The average current ratio of the company was 1.13 and average quick ratio was 0.53, which is far less than the ideal rule of thumb i.e. 2 and 1, indicates an unsatisfactory liquidity position of the company during the years of study. Moreover, a higher CV percentage i.e. in case of the current ratio 16.95%, and in case of the quick ratio 18.01% is also an indication of little more instability in the liquidity position of the company.

When it was attempted to find out the overall liquidity position of the company by applying Motaal's comprehensive test of liquidity, it is found that working capital to current assets ratio has shown a negative growth of -19.48%. This indicates that the growth rate of current liabilities was more as compared to the growth rate of current assets and hence the working capital is decreasing slowly and slowly. This aggressive approach in the working capital might be the policy of the firm to enhance the profitability but no doubt it endangers the liquidity position of the company. The positive growth in stock to current assets ratio which is 3.08% is a bad sign for the company because it indicates that investment in inventories is increasing gradually, which has to be stopped. The quick asset to current assets has registered a negative growth of -2.25% during the study period, which shows that company's liquid assets position has also deteriorated successively during the period of study.

Table 2: Ratios in respect of Hindustan Petroleum Corporation Ltd (HPCL)

Hindustan Petroleum Corporation Ltd (Rs in Lakh)										
Year	**CA**	**CL**	**WC**	**Stock**	**QA**	**CR**	**QR**	**WC to CA**	**Stock to CA**	**QA to CA**
Mean	1561744	1460002	101741	875265	686479	1.23	0.51	15.59	57.97	42.03
Growth	3491165	4047849	-556684	1486219	2004946	-0.31	-0.12	-29.2765	-4.500934	4.5
Growth Rate	1051.88	1453.89	-1040.86	942.73	1150.63	-25.87	-19.52	-181.681	-9.475712	8.57
SD	1115354	1383559	367496	546683	597750	0.24	0.12	18.08	7.87	7.87
CV	71.42	94.76	361.21	62.46	87.07	19.28	23.98	115.9713	13.57248	18.72

Note: CA stands for Current Assets, CL stands for Current Liabilities, WC stands for Working Capital, QA stands for Quick Assets, CR stands for Current Ratio, QR stands for Quick Ratio.

Source: Calculations are based on information provided in the Annual Reports of the Department of Public Enterprise, Government of India.

It is evident from the Table 2 that in case of HPCL, the current assets have shown a growth rate of around 1051% whereas the current liabilities were grown around 1453% which is more than 1.4 times of the growth rate of current assets over the study period. The standard deviation of the current assets was Rs.11, 15,353.79 lakhs and the coefficient of variation was 71.42%, which shows a steady growth of current assets during the period of study. The growth rate of current liabilities was 1453.89% with a standard deviation of Rs.13, 83,559.28 lakhs and a CV of 94.76%. The growth rate of working capital shows negative, which was 1040.86%. A CV rate of just 361.21% coupled with a negative growth in working capital and a higher CV rate indicates a faster growth of current liabilities as compared to current assets with a greater variation during the period. The quick assets also have registered a growth rate of 1150.63%with a SD of Rs. 5, 97,750 lakhs and a CV of 87.07%. This indicates a very worse liquidity position in the company and the variability quick assets are much more than the expected, which indicates a constant instability in the liquidity position in the company. When the liquidity ratios of HPCL were analysed, we found that both the current ratio and quick ratio have registered a negative growth i.e. -25.87% and -19.52% respectively. The negative growth in both the ratios indicates that the liquidity position of the company has been degraded over the years. The average current ratio of the company was 1.23 and the average quick ratio was only 0.51, which is far less than the ideal rule of thumb i.e. 2 and 1, indicates an unsatisfactory liquidity position of the company during the years of study. Moreover, a higher CV percentage i.e. in case of the current ratio 19.28% and, in case of the quick ratio 23.98% is also an indication of instability in the liquidity position of the company. Hence, the company should take necessary steps to reduce the inventory level from current assets and to increase other liquid resources in current assets. Further, it was attempted to find out the overall liquidity position of the company by applying Motaal's Comprehensive Test of Liquidity. It is found that the working capital to current assets ratio has shown a negative growth of 181.68%. This indicates that the growth rate of current liabilities was more as compared to the growth rate of current assets and hence the working capital is decreasing slowly over a period of time. This aggressive approach in the working capital might be the policy of the firm to enhance the profitability but no doubt it endangers the liquidity position of the company. The negative growth in stock to current assets ratio which is 9.48% can be treated as positive action towards liquidity management assuming that the company was reducing its inventory level to the extent possible so as to free up the cash tied up with inventories. The quick asset to current ratio has registered a positive growth of 8.57% during the study period, which is an indication of company's concern and steps to maintain liquidity.

Table 3: Ratios in respect of Indian Oil Corporation Ltd (IOCL)

Indian Oil Corporation Ltd (Rs in Lakh)										
Year	**CA**	**CL**	**WC**	**Stock**	**QA**	**CR**	**QR**	**WC to CA**	**Stock to CA**	**QA to CA**
Mean	4928551	3024419	1904132	2618156	2310395	1.82	0.85	32.6	54.71032	45.29
Growth	1.2E+07	1.1E+07	220753	5370402	6336943	-0.18	-0.05	-14.1912	-3.748962	3.75
Growth Rate	1042.96	1239.42	112.78	957.23	1128.62	-14.67	-8.27	-81.3834	-7.50085	7.49
SD	3708541	2761146	2802714	1727396	2033544	1.23	0.68	20.78	7.35	7.35
CV	75.25	91.3	147.19	65.98	88.02	67.77	80.07	63.75	13.43	16.23

Note: CA stands for Current Assets, CL stands for Current Liabilities, WC stands for Working Capital, QA stands for Quick Assets, CR stands for Current Ratio, QR stands for Quick Ratio.

Source: Calculations are based on information provided in the Annual Reports of Department of Public Enterprise, Government of India.

It is evident from Table 3 that in case of IOCL, the current assets have shown a growth rate of 1042.96% whereas the current liabilities have grown to the extent of 1239.42% in last 15 years. The standard deviation of the current assets was Rs.37, 08,540.84 lakhs and the coefficient of variation was 75.25%, which shows a steady and fast growth of current assets during the period of study. The working capital has also registered a positive growth of 112.78% which indicates that the company has always tried to maintain the required amount of working capital. The quick assets have registered a positive growth rate of 1128.62% with a SD of Rs. 20, 33,544.03 lakhs and a CV of 88.02% which indicates that during the period company has invested enough money in liquid resources. When the liquidity ratios of IOCL were analysed, it was found that both the current ratio and quick ratio have registered a negative growth i.e. -14.67% and -8.27% respectively. The negative growth in both the ratios indicates that the liquidity position of the company has been degraded over the years. The average current ratio of the company was 1.82, and the average quick ratio was 0.85, which is far less than the ideal rule of thumb i.e. 2 and 1, indicating an unsatisfactory liquidity position of the company during the years of study. But, the overall position is satisfactory as compared to other companies under the study. When we tried to find out the overall liquidity position of the company by applying Motaal's Comprehensive Test of Liquidity, we found that working capital to the current assets ratio has shown a negative growth of 81.38%. This indicates that the growth rate of current liabilities was more as compared to the growth rate of current assets and hence the working capital was decreasing slowly and slowly. This aggressive approach in the working capital might be the policy of the firm to enhance

the profitability but no doubt it endangers the liquidity position of the company. The negative growth of 7.5% in the stock to current assets ratio can be treated as a positive action towards liquidity management assuming that the company was reducing its inventory level to the extent possible so as to free up the money tied up with the inventories. The quick asset to current ratio has registered a positive growth of 7.49% during the study period, which is an indication of the company's concern and steps to maintain liquidity. After analysing all the aspects of liquidity, it can be inferred that the overall liquidity position of the company is good. It is suggested that the company should try to increase its current assets level at par with the increase in current liabilities.

Table 4: Ratios in respect of Gas Authority of India Ltd-India (GAIL-India)

Gas Authority of India Ltd (India) (Rs in Lakh)										
Year	**CA**	**CL**	**WC**	**Stock**	**QA**	**CR**	**QR**	**WC to CA**	**Stock to CA**	**QA to CA**
Mean	1092076.667	580744.13	511332.53	62701.93	1029374.73	1.67	1.56	28.87	8.17	91.83
Growth	681559	637794	43765	131191	550368	0.15	0.06	16.74944	6.976777	-6.98
Growth Rate	304.46	245.97	-123.5	587.19	273.11	16.9	7.84	-105.81	69.91	-7.75
SD	1075131.12	304868.63	870916.98	37446.04	1050576.32	0.89	0.89	25.38	4.09	4.09
CV	98.45	52.5	170.32	59.72	102.06	53.04	56.92	87.91	50.01	4.45

Note: CA stands for Current Assets, CL stands for Current Liabilities, WC stands for Working Capital, QA stands for Quick Assets, CR stands for Current Ratio, QR stands for Quick Ratio.

Source: Calculations are based on information provided in the Annual Reports of Department of Public Enterprise, Government of India.

As shown in Table 4, in case of GAIL-India, the current assets have shown a growth rate of around 304% whereas the current liabilities have grown around 246% which is less than the growth rate of current assets during the study period. The standard deviation of the current assets was Rs.10, 75,131.12 lakhs and the coefficient of variation was 98.45%, which shows a steady and fast growth of current assets during the period of study. As evident from the table, the current liabilities, working capital and quick assets were also changed in the similar fashion as that of current assets. The growth rate of current liabilities was 245.97% with a standard deviation of Rs.3, 04,868.63 lakhs and a CV of 52.50%. The growth rate of working capital was negative to the extent of -123.50% with a SD of Rs.8, 70,916.98 lakhs and a CV of 170.32%. A negative growth in working capital and a higher CV rate indicates a faster growth of current liabilities as compared to current assets with a greater variation during the period. The quick assets also have registered a growth rate of 273.11% with a SD of

Rs. 10, 50,576.32 lakhs and a CV of 102.06%. All these indicate a very worse liquidity crunch in the company, and the variability in working capital as well as quick assets are much more than the expected, which indicates a constant instability in the liquidity position of the company. When the liquidity ratios of the GAIL-India were analysed, it is found that both the current ratio and quick ratio have registered a positive growth i.e, 16.90% and 7.84% respectively. The positive growth in both the ratios indicates that the liquidity position of the company has been upgraded over the years. The average current ratio of the company was 1.67 and the average quick ratio was 1.56, which indicates that though the company maintains sufficient liquid resources, the current assets position is not up to the expectation. But, the overall position is satisfactory as compared to other companies under the study. Moreover, a higher CV percentage i.e. in case of the current ratio 53.04%, and in case of the quick ratio 56.92% is also an indication of instability in the liquidity position of the company. When we tried to find out the overall liquidity position of the company by applying Motaal's Comprehensive Test of Liquidity, we found that the working capital to current assets ratio has shown a negative growth of 105.81%. This indicates that the growth rate of current liabilities was more as compared to the growth rate of current assets and hence the working capital is decreasing over the years. This aggressive approach in the working capital might be the policy of the firm to enhance the profitability but no doubt it endangers the liquidity position of the company. The positive growth in the stock to current assets ratio which is 0.45% is though a bad sign for the company, the rate is very low. The quick asset to current ratio has also registered a negative growth of 7.75% during the study period, which shows that company's liquid assets position has also deteriorated subsequently during the period of study.

Table 5: Ratios in respect of Chennai Petroleum Corporation Ltd (CPCL)

Chennai Petroleum Corporation Ltd (Rs in Lakh)										
Year	**CA**	**CL**	**WC**	**Stock**	**QA**	**CR**	**QR**	**WC to CA**	**Stock to CA**	**QA to CA**
Mean	502704.87	377065.13	125639.73	290281.47	212423.4	1.7	0.69	33.9	57.38	42.62
Growth	400559	568325	-167766	574949	-174390	-0.26	-0.74	-24.22	56.9	-56.9
Growth Rate	76.38	126.08	-227.77	902.55	-37.85	-21.98	-72.51	-172.44	468.4	-64.76
SD	270475.7	318826.01	115670.24	202703.44	168701.66	0.62	0.3	23.43	20.1	20.1
CV	53.8	84.55	92.07	69.83	79.42	36.34	44.04	69.11	35.03	47.17

Note: CA stands for Current Assets, CL stands for Current Liabilities, WC stands for Working Capital, QA stands for Quick Assets, CR stands for Current Ratio, QR stands for Quick Ratio.

Source: Calculations are based on information provided in the Annual Reports of Department of Public Enterprise, Government of India.

It is evident from the Table 5 that in case of CPCL, the current assets have shown a growth rate of around 76% whereas the current liabilities have grown around 126% which is around 1.65 times of the growth rate of the current assets during the study period. The standard deviation of the current assets was Rs.270475.70 lakhs and the coefficient of variation was 53.80%, which shows a steady and fast growth of current assets during the period of study. The growth rate of current liabilities was 126.08% with a standard deviation of Rs.3, 18,826.01 lakhs and a CV of 84.5%. The growth rate of working capital was negative to the extent of 227.77% with a SD of Rs.1, 15,670.24 lakhs and a CV of 92.07%. A negative growth in working capital and a higher CV rate indicates a faster growth of current liabilities as compared to current assets with a greater variation during the period. The quick assets have registered a negative growth rate of 37.85% with a SD of Rs. 1, 68,701.66 lakhs and a CV of 79.42%t indicates that during the period company has not been invested enough money in liquid resources suggesting a very worse liquidity condition. When the liquidity ratios of CPCL were analysed, it is found that both the current ratio and quick ratio have registered a negative growth i.e. 21.98% and 72.51% respectively. The negative growth in both the ratios indicates that the liquidity position of the company has been degraded over the years. The average current ratio of the company was 1.70 and the average quick ratio was 0.69, which is far less than the ideal rule of thumb i.e. 2 and 1, indicating an unsatisfactory liquidity position of the company during the years of study. When it was attempted to find out the overall liquidity position of the company by applying Motaal's Comprehensive Test of Liquidity, it is found that the working capital to current assets ratio has shown a negative growth of 172.44%. This indicates that the growth rate of current liabilities was more as compared to the growth rate of current assets and hence the working capital was decreasing slowly and slowly. This aggressive approach in the working capital might be the policy of the firm to enhance the profitability but no doubt it endangers the liquidity position of the company. The positive growth in the stock to current assets ratio which is 468.40% is a bad sign for the company because it implies that investment in inventories were increasing gradually, and it has to be stopped. The quick asset to current ratio has also registered a negative growth of 64.76% during the study period, which suggests that the company's liquid assets position as a part of current assets has also deteriorated subsequently during the period of study.

Table 6: Ranking of the Select Companies based on the Motaal's Comprehensive Test of Liquidity

Companies	WC to CA Ratio (%)	Rank	Stock to CA Ratio (%)	Rank	LA to CA Ratio (%)	Rank	Total Rank	Ultimate Rank
BPCL	8.95	5	52.58	2	47.42	2	9	3
HPCL	15.59	4	57.97	5	42.03	5	14	4
IOCL	32.6	2	54.71	3	45.29	3	8	2
GAIL	28.87	3	8.17	1	91.83	1	5	1
CPCL	33.9	1	57.38	4	42.62	4	9	3

Source: Author's Calculation

Table 6 shows the ranking of the select companies based on the Motaal's Comprehensive Test of Liquidity. The GAIL was the most liquid company among the five, followed by IOCL (ranked II), BPCL and CPCL (jointly ranked III), and HPCL (ranked IV).

Conclusions

The findings suggest that the liquidity position of the companies under the study was very much worse because in all the cases, except in case of IOCL, the growth rate of working capital shows negative trend during the study period. It signifies that the growth rate of current liabilities was much more than the growth rate of current assets and thereby most of the funds required for day to day activities were financed by current liabilities, which in the long run would affect the working capital position of the company adversely ultimately affecting the liquidity position of the companies. Hence, the companies under the study should ensure that the current assets and current liabilities grow at a similar rate. In other words, a company must ensure that it has access to sufficient cash to be able to meet its current commitments, and enjoy the advantage of tapping the future business opportunities. This is indicated by the company's level of liquidity, which means having ability to continue to meet its short-term financial obligations. Therefore, all the companies under the study should take serious steps to increase the level of working capital, to increase the current ratio and quick ratio. The current assets should be increased at a faster rate as compared to the current liabilities. The companies must ensure that they have enough liquid resources to meet the short term obligations as they fall due. Moreover, as per Motaal's comprehensive test of liquidity, the GAIL is the most liquid company, followed by IOCL, BPCL, CPCL and HPCL in that order. If a company operates strictly or mostly on cash basis or it is able to pay its creditors

after it collects from its debtors, then the situation is in favour of the company. Otherwise, any moment the present situation may create serious financial troubles for the company which may even lead the company towards bankruptcy.

References

Abuzar, M. A., and Elijelly. (2004). Liquidity- Profitability Tradeoff: An Empirical Investigation in an Emerging Market. *International Journal of Commerce and Management,* 14(2), 48-61.

Amato, L., and Wilder, R. P. (1990). Firm and Industry Effects in Industrial Economics. *Southern Economic Journal , 50*, 93-105.

Anitha , R., and Nowfal. (2014). Impact of Liquidity Management on Profitability: A Case Study of Malappuram Co-Operative Spinning Mills Limited, Kerala. *Asian Journal of Management*, 5(3), 353-358.

De Zoysa, A., Manawaduge, A. S., and Chandrakumara, A. (2009). Profitability Analysis of Listed Manufacturing Companies in Sri Lanka and Malaysia: An Empirical Investigation. *Asian Academy of Applied Business*, 34-43.

Egbide, B.-C., Uwuigbe, O., and Uwalomwa, U. (2013). Liquidity Management and Profitability of Manufacturing Companies in Nigeria. *IOSR Journal of Business and Management*, 9 (1), 13-21.

Koumanakos, D. P. (2008). The Effect of Inventory Management on Firm Performance. *International Journal of productivity and performance management, 57*(5), 335-369.

Kumar, D., and Agarwal, C. (2012). Liquidity Management in Indian Electrical Equipment Companies (A Comparative Study of Companies Listed in Nifty 50). *International Journal of Trade and Commerce , 1* (2), 367-389.

Mandal, N., Datta, B. N., and Goswami, S. (2010). Impact of Working Capital Management on Liquidity, Profitability and Non-insurable Risk and Uncertainty bearing: A Case Study on Oil and Natural Gas Commission. *Great Lakes Herald, 4*(2), 21-42.

Marcus, M. (1969). Profitability and Size of Firms. *Review of Economics and Statistics , 51*, 104-107.

Nandi , K. C. (2012). Trends in Liquidity Management and their Impact on Profitability- A Case Study. *Great Lakes Herald, 6*(1), 16-30.

Padachi, K. (2006). Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms. *International Review of Business Research Papers, 2*(2), 45-58.

Panigrahi, A. K. (2012). Impact of Working Capital Management on Profitability: A Case Study of. *Asian Journal of Management, 3*(4), 210-218.

Panigrahi, A. K. (2013). Cash Conversion Cycle and Firms' Profitability: A Study of Cement Manufacturing Companies of India. *International Journal of Current Research, 5*(6), 1484-1488.

Panigrahi , A. K. (2013a) Relationship between Inventory Management and Profitability- An Empirical Analysis of Indian Cement Companies. *Asia Pacific Journal of Marketing and Management Review, 2*(7), 107-120.

Panigrahi, A. K. (2013b) Liquidity Management of Indian Cement Companies: A Comparative Study. *IOSR Journal of Business and Management, 14*(5), 49-61.

Panigrahi, A. K. (2013c) Negative Working Capital and Profitability: An Empirical Analysis of Indian Cement Companies. *International Journal of Research in Commerce and Management, 4*(6), 41-45.

Panigrahi, A. K. (2014). Relationship of Working Capital with Liquidity, Profitability and Solvency: A Case Study of ACC Limited. *Asian Journal of Management Research, 4*(2), 308-322.

Priya, K., and Nimalathasan, B. (2013). Liquidity Management and Profitability: A Case Study of Listed Manufacturing Companies in Sri Lanka. *International Journal of Technological Exploration and Learning, 2*(4), 161-165.

Raheman, A., and Nasr, M. (2007). Working Capital Management and Profitability: Case Of Pakistani Firms. *International Review of Business Research Papers, 3*(1), 279-300.

Rajeswara, R. K. (1985). *Working Capital Planning and Control in Public Enterprises in India.* Jaipur: Ajantha Publications.

Richard and Oppedahl. (1990). Working Capital Management. *Business Review, 49*(2), 1-4.

Shin, H., and Soenem (1998). Efficiency of Working Capital and Corporate Profitability. *Financial Practice and Education, 8*(2), 37–45.

Smith, K. V. (1980). *Profitability Versus Liquidity Tradeoffs in Working Capital Management. In: Readings on the Management of Working Capital.* USA: West Publishing Firm.

Teruel, P. J., and Solano, P. M. (2007). Effects of Working Capital Management on SME Profitability. *International Journal of Managerial Finance, 3*(2), 164-177.

About the Author:

Mr. Pranesh Debnath is Research Scholar in Commerce & Assistant Registrar (Finance) in Tripura University, Agartala, West Tripura-799022, Email: praneshdebnath@gmail.com