

## Working Capital Analysis of HPCL-A Case Study

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### ABSTRACT

Working capital is just like a blood of the company as without blood human body cannot survive in the same logic company cannot survive without working capital. Excess blood or low blood both the situation are dangerous for the human body in the same way excess or low working capital are harmful for the company. There should be fair amount of working capital in the business. In this regard we have analysed the working capital position of HPCL with the help of various ratio's of working capital. In this study mainly, current ratio, quick ratio, absolute liquid ratio, debtor's turnover, debtor's collection period, Age of inventory and working capital turnover ratio were calculated. The statistical tools like mean, growth rate standard deviation and coefficient of variation were applied. Liquidity position was also analyzed by liquidity ranking method.

**KEYWORDS:** - *Key Words: Net Current assets, quick assets, absolute liquid asset, debtor's collection age of inventory, working capital turnover*

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### INTRODUCTION

“Working capital could be defined as the portion of asset used in current operations. The movement of funds from working capital to income and profits and back to working capital is one of the most important characteristics of business. This cyclical operation is concerned with utilization of funds with the hope that they will return with an additional amount called income. If the operations of a company are to run smoothly a proper relationship between fixed capital and current capital has to be maintained.”

Working capital also called net current assets is the excess of current assets over current liabilities. All organisations have to carry working capital in 811

one form or the other. The efficient management of working capital is important from the point of view of both liquidity and profitability. Poor management of working capital means that funds are unnecessarily tied up in idle assets hence, reducing liquidity and also reducing the ability to invest in productive asset such as plant and machinery, so affecting the profitability.

The term working capital refers to current assets, which may be defined as:-

- Those which are convertible into cash or equivalent within a period of one year or
- Those, which are required to meet day-to-day operations. The fixed as well as the

current assets, both requires investment of funds. The management of working capital involves different concepts and methodology than the techniques used in fixed assets management.

“The working capital management refers to management of the working capital or to be more precise the management of current assets. A firm working capital consist of its investment in current assets which include short term assets such as cash and bank balance, inventories, receivables and marketable securities. So the working capital management refers to the management of the level of all those individual current assets. If the working capital level is not properly maintained and managed, then it may result in unnecessary blocking of scarce resources of the firm. Therefore, the working capital management needs attention of all the financial managers.”

## COMPANY PROFILE

HPCL, a Government of India undertaking and a Fortune 500 company, is one of the major integrated oil refining and marketing companies in India. It is a Mega Public Sector Undertaking (PSU) with Navaratna status.

HPCL accounts for about 20% of the market share and about 10% of the nation's refining capacity with two coastal refineries, one at Mumbai (West Coast) having a capacity of 6.5 Million Metric Tonnes Per Annum (MMTPA) and the other in Vishakhapatnam (East Coast) with a capacity of 8.3 MMTPA. HPCL also holds an equity stake of 16.95% in Mangalore Refinery & Petrochemicals Limited (MRPL), a state-of-the-art refinery at Mangalore with a capacity of 9 MMTPA. In addition, HPCL, in collaboration with M/s Mittal Energy Investment Pte.Ltd. has set up a 9

MMTPA refinery at Bathinda, in the state of Punjab, as a Joint venture.

HPCL owns the country's largest Lube Refinery with a capacity of 335,000 Metric Tonnes which amounts to 40% of the national capacity of Lube Oil production. HPCL has given India a firm ground in this sector with its world class standard of Lube Base Oils. Presently HPCL produces over 300+ grades of Lubes, Specialities and Greases.

HPCL has earned "Excellent" performance from FY1991-92 (basis signing of the first MOU with the Ministry of Petroleum & Natural Gas, GOI in FY 1991-92), till FY 2012-13, except for the single FY 2006-07, when it was adjudged as Very Good. HPCL has won the prestigious MOU Award for the year 2007-08 for Excellent Overall Performance, and for being one of the Top Ten Public Sector Enterprises who fall under the 'Excellent' category. HPCL has also earned the TOP PERFORMER status for two consecutive FY 2011-12 and 2012-13, as the topper in the MOU ratings, amongst the Oil Industry.

HPCL continually invests in innovative technologies to enhance the effectiveness of employees and bring qualitative changes in service. Business Process Re-Engineering exercise, creation of Strategic Business Units, ERP implementation, Organizational Transformation, Balanced Score Card, Competency Mapping, benchmarking of refineries and terminals for product specifications, ISO certification of Refineries and Supply Chain Management are some of the initiatives that broke new grounds.

HPCL has successfully integrated Information Technology in its activities at different levels. The Enterprise Resource Planning (ERP) system is now operational on J.D.Edwards, an Oracle product, across the Corporation.

## REVIEW OF LITERATURE

1. (Shin & Soenen, 1998) used net-trade cycle (NTC) as a measure of working

capital management. NTC is basically equal to the Cash Conversion Cycle (CCC) whereby all three components are expressed as a percentage of sales. The reason for using NTC because it can be an easy device to estimate for additional financing needs with regard to working capital expressed as a function of the projected sales growth.

2. **Misra (1975)** studied the problems of working capital with special reference to six selected public sector undertakings in India over the period 1960-61 to 1967-68. Analysis of financial ratios and responses to a questionnaire revealed somewhat the same results as those of NCAER study with respect to composition and utilization of working capital.
3. **Agarwal (1983)** also studied working capital management on the basis of sample of 34 large manufacturing and trading public limited companies in ten industries in private sector for the period 1966-67 to 1976-77. Applying the same techniques of ratio analysis, responses to questionnaire and interview, the study concluded the although the working capital per rupee of sales showed a declining trend over the years but still there appeared a sufficient scope for reduction in investment in almost all the segments of working capital.
4. **Sastry's study (1966)** was a cross section analysis of total inventories of companies across several heterogeneous industries for the period 1955-60 using balance sheet data of public limited companies in the private sector. The study brought out the importance of accelerator represented by change in sales. It also showed negative influence of fixed inventory investment.
5. The study by **George (1972)** was cross section analysis of balance sheet data of 52 public limited companies for the period 1967-70. Accelerator, internal and external

finance variables were considered in the equations for raw materials including goods-in-process and total inventories. However, equations for finished goods inventories considered only output variable. Accelerator and external finance variables were found to be important.

6. The analysis by **Seamy and Rao (1975)** of the flow of funds of public limited companies had an equation for aggregate inventory investment. RBI data for the period 1954-70 had been used. The explanatory variables considered were accelerator, flow of bank borrowings, an index of man-days lost, capacity by the call rate. Accelerator, bank finance and fixed investment were found to be significant.
7. **Adesh Sharma (1994)** applied accelerator model with financial variables to determine the factors influencing investment in inventories in pesticides industry in India. Data had been taken from the Stock Exchange Official Directory, Mumbai for the period 1978-1992 in respect of 18 firms in this industry. The coefficients of the accelerator and financial variables were found to be significant and positive. The coefficient of inventory of inventory stock was significant and negative.

#### OBJECTIVES OF THE STUDY

Working capital management is very important in modern business. Financial statement analysis of working capital is also very useful for short-term management of time. The following are the main objective of our study.

- To access the significance of working capital by selecting few important parameters such as working capital ratio, acid test ratio and current assets to total assets, total assets to sales ratio, debtor to sales and age of debtors etc.

- To make item wise analysis of the element or components of working capital and to identify the items responsible for changes in working capital.

- Data's are grouped and sub-grouped as per the requirement of the study
- This study is based on secondary data
- It has covered the limited time period i.e.2007-08 to 2014-15

## RESEARCH METHODOLOGY OF THE STUDY

This research study has been based on secondary data and sources of these data's are annual reports, budget, statistical report and other published documents. On the basis of this information, data are grouped and sub-grouped as per the requirement of the study. The nature of this study is micro and exploratory research. The objectives of the study which were taken, has been analysed by different ratios of working capital of HPCL. In this research study the research tools like growth rate, mean, standard deviation and coefficient of variation have been applied. Liquidity position is also analysing with the help of liquidity ranking method.

## LIMITATION OF THE STUDY

- Non availability of sufficient literature and data

**Current Ratio = Current Assets/Current Liabilities**

**Table No. 1: Statement of Current Assets to Current Liabilities (Rs in Crores)**

YEAR	CURRENT ASSETS (Rs.)	CURRENT LIABILITIES (Rs.)	RATIOS
2007-2008	19297.37	12433.69	1.55
2008-2009	15992.69	11755.81	1.36
2009-2010	20641.94	16555.11	1.25
2010-2011	26590.97	19606.60	1.36
2011-2012	36759.74	42700.36	0.86
2012-2013	38230.64	43262.65	0.88
2013-2014	39736.78	35307.26	1.12
2014-2015	27599.48	23695.30	1.16

**Source:** Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per table-1, current ratio of HPCL was below the ideal standard of 2:1. Current ratio was in between 1.55 to 1.16 during 814

the study period, which actually shows an increasing and decreasing trend. In 2008, the higher ratio is 1.55 & in 2012, the lower ratio is

0.86. It showed a fluctuating trend during the study period. Average current ratio is 1.19. So that Current ratio of the co. is not satisfactory because the ratio is 1.19 is much below the accepted standard of 2:1.

## 2. Liquidity/Quick/Acid test Ratio:-

Quick ratio also known as acid test or liquid ratio is more vigorous test to liquidity then the current ratio. The term 'liquidity' refers to the ability of firm to pay its short- term obligation as and when they become due. The two determinants of current

ratio as a measure of liquidity are current assets and liabilities. Current assets included inventories and prepaid expenses, which are not easily convertible into cash within a short- term period. Quick ratio may be defined as the relationship between quick/current assets and current or liquid liabilities. An asset is said to be liquid if it can be converted into cash within short period without loss of value. In that sense, cash in hand and cash at bank are the most liquid assets, ideal liquid ratio is 1:1.

**Quick Ratio = Quick Assets/Current Liabilities**  
(Current Assets – Inventory = Quick Assets)

**Table No. 2: Statement of Quick Assets to Current Liabilities (Rs in Crores)**

YEAR	QUICK ASSETS (Rs.)	CURRENT LIABILITIES (Rs.)	RATIOS
2007-2008	7277.09	12433.69	0.59
2008-2009	7199.45	11755.81	0.61
2009-2010	8062.72	16555.11	0.49
2010-2011	9968.69	19606.60	0.51
2011-2012	17305.21	42700.36	0.40
2012-2013	21791.94	43262.65	0.50
2013-2014	20961.37	35307.26	0.59
2014-2015	14627.22	23695.30	0.62

**Source:** Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-2 the liquid ratio was also not satisfactory position. Generally, this ratio of 1:1 is considered. The ratio was more than the ideal position of 1:1. Highest ratio during the study period was in 2015 when it was 0.62. and the lowest ratio was 0.40 during the year 2012. Average quick ratio is 0.54 so that this ratio is much below the accepted standard of 1:1. Overall average during the study period is 0.54, which is not favourable as per the industrial norms.

## 3. Absolute Liquid Ratio:-

Although receivables, debtors, and bills receivable are generally more liquid than inventories yet there may be doubts regarding their realization into cash immediately or in time. Hence, some authorities are of opinion that the absolute liquid ratio should also be calculated together with current ratio and acid test ratio so as to exclude over receivable from the current assets and find out the absolute liquid ratio. Absolute liquid assets include cash in hand and cash at bank. The acceptable norms for this ratio are 0.5:1 or 1:2



**Absolute liquid Ratio = Absolute Liquid Assets/Liquid Liabilities**

**(Absolute Liquid Assets = Cash in hand + Marketable Securities)**

**(Liquid Liabilities = Current Liabilities – Bank Overdraft)**

**Table No. 3: Statement of Absolute Liquid Asset to Liquid Liabilities (Rs in Crores)**

YEAR	ABSOLUTE LIQUID ASSETS (Rs.)	LIQUID LIABILITIES (Rs.)	RATIOS
2007-2008	294.01	11742.22	0.03
2008-2009	608.31	10538.22	0.06
2009-2010	243.17	14449.90	0.02
2010-2011	80.00	17801.84	0.00
2011-2012	226.38	41153.32	0.00
2012-2013	147.13	41462.11	0.00
2013-2014	34.71	33565.28	0.00
2014-2015	17.07	21297.78	0.00

Source: Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-3, the absolute liquid ratio is highly fluctuated during the study period. The absolute liquid ratio was very low as compared to the ideal ratio of 0.5:1 or 1:2. The ratio was much below this standard. The lowest ratio was during the year 2009-2010, when it was 0.02 and it was highest during the year 2008-2009, when it was 0.06, which is very low. The average for the first three years of study was 0.04 and for next five year of study was 0.00. The overall average of eight year was 0.01. It indicates that the cash composition of HPCL was very low. The percentage of cash to current assets was also very low. It is not a satisfactory position.

#### 4. Inventory Turnover Ratio:-

Inventory turnover ratio establishes relationship between the costs of goods sold to average stock. This ratio measures the velocity of conversion of stock into sales. Usually, a high inventory turnover indicates efficient management of inventory because more frequently the stocks are sold; the lesser amount of money is required to finish the inventory. A low inventory turnover ratio indicates an inefficient management of inventory, sluggish business, poor quality of goods and lower profit as compared to total investment. A high inventory turnover may be the result of a very low the level of inventory which result in shortage of goods in relation to demand and a position of stock may be high.

**Inventory Turnover Ratio = Sales/Average Stock**

**(Average Stock = Opening Stock + Closing Stock/2)**

**Table No. 4: Statement of Sales to Average Stock (Rs in Crores)**

YEAR	SALES (Rs.)	AVERAGE STOCK (Rs.)	RATIOS (In times)
2007-2008	96442.92	10059.34	9.59
2008-2009	109377.60	10406.76	10.51
2009-2010	101347.51	10686.12	9.48

2010-2011	123772.42	14600.75	8.48
2011-2012	178139.23	18038.40	9.88
2012-2013	206529.34	17946.61	11.51
2013-2014	223036.67	17607.05	12.67
2014-2015	206380.37	15870.28	13.00

Source: Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-4, the inventory turnover ratio of HPCL is quieting satisfactory. The inventory turnover ratio ranges from 8.48 times to 13.00 times. It was lowest in the year 2010-11, when it was 8.48 times and it was highest in the year 2014-15, when it was 13.00 times. In year 2012 to 2015 which actually shows an increasing trend. Overall position of inventory turnover ratio is a satisfactory position.

#### 5. Age of Inventory:-

Age of inventory indicates duration of inventory in organization. It shows moving position of inventory during the year. If age of inventory is

minimum it means companies activity position is satisfactory, they are able to sell their product within shorter period of time which indicates sound liquidity position of organization. On the other hand, if age of inventory is too high it indicates slow moving of stock due to lower demand of product or excessive production by company, due to stocking policy, which affected directly, liquidity position of company. Inventory is one of the major items in current assets, which shows investment of working capital in stock.

Age of Inventory = Days in a year/Inventory Turnover Ratio

Table No. 5: Statement of Days in a year to Inventory Turnover Ratio (Rs in Crores)

YEAR	DAYS IN A YEAR	INVENTORY TURNOVER RATIO	RATIOS (In Days)
2007-2008	365	9.59	38
2008-2009	365	10.51	35
2009-2010	365	9.48	39
2010-2011	365	8.48	43
2011-2012	365	9.88	37
2012-2013	365	11.51	32
2013-2014	365	11.51	29
2014-2015	365	13.00	28

Source: Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-5, the age of inventory of HPCL indicates high, which implies that the company is taking time to clear its stock. The highest age of inventory was during the year 2011-12, when it was 43 days and lowest the year 2014-15, when it was 28 days, which is still high.

The average age of inventory from first four years 2007-08 to 2010-11 it was 38.75 and for the next four years 2011-12 to 2014-15 it was 31.5. And the overall average of age of inventory worked out to be 35.12, which is very high in position. So it is also a satisfactory position.

### 6. Debtors Turnover Ratio:-

Debtor's turnover ratio indicates the velocity of debt collection of the firm. In simple words, it indicates the number of time the debtors are turned over during a year. Generally, the higher the value of debtor's turnover, the more efficient is the management of debtors/sales or more liquid is the debtors. Similarly, low debtor turnover implies inefficient management of debtors/sales and less liquid debtors. But a precaution is needed

while interpreting, a very high ratio may imply a firm's inability due to lack of resources to sale on credit there by losing sales and profits. There is no rule of thumb, which may be used as a norm to interpret the ratio, as it may be different from firm to firm, depending upon the nature of business. This ratio should be compared with ratio of other firm doing similar business and a trend may also be making a better interpretation of the ratio.

**Debtors Turnover Ratio = Sales/Debtors**

**Table No. 6: Statement of Net Sales to Debtors (Rs in Crores)**

YEAR	NET SALES (Rs.)	DEBTORS (Rs.)	RATIOS (In times)
2007-2008	96442.92	1710.66	56.38
2008-2009	109377.60	2240.91	48.81
2009-2010	101347.51	2437.34	41.58
2010-2011	123772.42	2654.37	46.63
2011-2012	178139.23	3565.16	49.97
2012-2013	206529.34	4935.04	41.84
2013-2014	223036.67	5465.95	40.80
2014-2015	206380.37	3603.05	57.28

Source: Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-6, the debtor's turnover ratio of HPCL is very fluctuating. It was highest during the year 2014-15 when it was 57.28 and lowest in the year 2009-10 when it was 41.58. The average age of inventory from first four years 2007-08 to 2010-11 it was 48.35 and for the next four years 2011-12 to 2014-15 it was 47.47. And the overall average of debtor's turnover ratio was 47.91.

### 7. Average Collection Period Ratio:-

The average collection period ratio represents the average number of days, for which a firm has to

wait before there receivable are converted into cash. It measures the quality of debtors. Generally, shorter the average collection period the better is the quality of debtor as a short collection period implies quick payment by debtors. Similarly, a higher collection period implies inefficient collection performance, which in turn adversely affects the liquidity or short-term paying capacity of a firm out of its current liabilities. Moreover, longer the average collection periods, longer are the changes of bad debts. But a precaution is needed while interpreting a very short collection period.



Average Collection Period Ratio = Days in a year/Debtors  
Turnover Ratio

Table No. 7: Statement of Days in a year to Debtors Turnover Ratio (Rs in Crores)

YEAR	DAYS IN A YEAR	DEBTORS TURNOVER	RATIOS (In days)
2007-2008	365	56.38	6
2008-2009	365	48.41	7
2009-2010	365	41.58	9
2010-2011	365	46.63	8
2011-2012	365	49.97	7
2012-2013	365	41084	9
2013-2014	365	40.80	9
2014-2015	365	57.28	6

Source: Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-7, the average collection period ratio is showing a satisfactory position. During the study of these ratios there is no chance of bad debts. The average of collection period was highest in the year 2010, 2013 & 2014, it was 9 days and the lowest in the year 2008 & 2015, and it was 6 days. The overall average collection period ratio was 8. So it is also a satisfactory position.

#### 8. Working Capital Turnover Ratio:-

Working capital of a concern is directly related to sales or cost of goods sold. The current assets like debtors, bills receivables, cash, bank, stock

changes with increase or decrease in sales. The working capital is taken as:

$$\text{Working capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Goods sold} = \text{Sales} - \text{Gross Profit}$$

This ratio measures the efficiency with which the working capital is being used by a firm. A higher ratio indicates efficient utilization of working capital and a low ratio indicates otherwise. But a very high working capital turnover ratio is not a good situation for any firm and hence, care must be taken while interpreting the ratio.

Working Capital Turnover Ratio = Net Sales/Net Working Capital  
(Working Capital = Current Assets – Current Liabilities)

Table No. 8: Statement of Net Sales to Working Capitals (Rs in Crores)

YEAR	NET SALES (Rs.)	WORKING CAPITAL (Rs.)	RATIOS (In times)
2007-2008	96442.92	6863.68	14.05
2008-2009	109377.60	4236.88	25.81
2009-2010	101347.51	4086.83	24.80
2010-2011	123772.42	6984.37	17.72
2011-2012	178139.23	5940.62	29.99
2012-2013	206529.34	5032.01	41.04
2013-2014	223036.67	4429.52	50.35
2014-2015	206380.37	3904.18	52.86

Source: Annual Reports of HPCL for the year 2008-2015

**Interpretation:** As per the table-8, the working capital turnover ratio shows a fluctuating trend in first six years of study while it shows an increasing trend in the later years. It was highest in the year 2014-15 and lowest in 2007-08. Overall the average of working capital turnover ratio was 32.08.

#### **FINDINGS:**

- The current ratio has been fluctuating during the study period because this ratio is less than 2:1. It has been continuously decreasing so it is not a satisfactory position and it has a negative impact on the company.
- The Liquid ratio was below standard norm. Quick ratio was fluctuating. It indicates the liquidity position of the company is not good to fulfil all its current liabilities and it has adverse impact on the company.
- Absolute liquidity position of HPCL is also not satisfactory. It has been continuously fluctuating, during the study period hence liquid liabilities are more than liquid assets □ and it has adverse impact on the company.
- The inventory turnover ratio of HPCL was satisfactory during the study period.
- Age of inventory of HPCL has been improved from 39 days to 28 days for conversion of finished goods to sales. This things has been increasing the liquidity and also has a positive impact on the business.
- The average debtor's collection period was satisfactory due to prudent credit policy of HPCL and it will reduce the bad debts. This shows positive impact on the company.
- The working capital turnover position of HPCL was satisfactory during the study period because this turnover ratio from 14

times to 52 times which reflects good position of the business and company has been improving their working capital position of their business.

#### **SUGGESTIONS:**

- Company should increase their current assets as compare to their current liabilities for the improvement of current ratio.
- Company should increase their liquid assets as compared to their current liabilities for improving in quick asset ratio.
- The company should increase in their absolute liquid asset for the betterment of liquidity position of the business.
- The company should strengthen the inventory turnover ratio. During the study period it was satisfactory because it has arrived on average 12 times.
- The company should maintain the debtor collection policy in near future because during the study period it was in the good position.
- The company should maintain and strengthen the working capital turnover position in near future because it was good position for improving the working capital position of business..

#### **CONCLUSION**

On the basis of this study, the overall position of working capital of HPCL was not satisfactory because the position of current ratio, quick ratio and absolute cash ratio were not satisfactory although working capital turnover position was satisfactory but overall position was not good. Despite of working capital liquidity position of the company was also not satisfactory because company did not have a sufficient amount of liquidity for the payment of current liabilities and other day to

day expenses. Thus, there is a need of improvement in working capital position of HPCL.

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Statement of liquidity ranking of HPCL

year	Current Invest. to current assets	Inventory to current assets	Debtors to current assets	Cash & bank to current assets	Other current assets	Loan & advance to current assets	Liquidity rank						Total rank	Ultimate rank
							1	2	3	4	5	6		
2008	-	0.62	0.09	0.01	0.00	0.27	-	7	8	2	7	4	28	6
2009	-	0.55	0.14	0.04	0.01	0.26	-	5	1	1	1	5	13	1
2010	-	0.61	0.12	0.01	0.01	0.25	-	6	5	3	2	6	22	3
2011	-	0.62	0.10	0.00	0.00	0.27	-	8	6	5	8	3	30	7
2012	0.08	0.53	0.10	0.01	0.01	0.28	2	4	7	4	3	2	22	4
2013	0.06	0.43	0.13	0.00	0.01	0.37	1	1	4	6	4	1	17	2
2014	0.13	0.47	0.14	0.00	0.01	0.25	3	2	2	7	5	7	26	5
2015	0.19	0.47	0.13	0.00	0.01	0.19	4	3	3	8	6	8	32	8