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## LIQUIDITY ANALYSIS AND ITS IMPACT ON RETURN ON ASSET OF SELECTED PHARMACEUTICAL COMPANIES IN INDIA

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### ABSTRACT

Pharma, food companies, health care operations and media plays vital role for social, economic and human development. Indian pharmaceutical companies are playing major role by supplying generic drugs to the world. Liquidity is one of the factor which determines the financial health of a firm. In this article an attempt is made to identify and measure liquidity positions of top five pharmaceutical companies which are working in India. The data used for the study is secondary and collected from annual reports of selected pharmaceuticals companies over a period of five years. For analyzing the liquidity of the firms various ratios such as Current, Quick, Inventory turnover, finished goods turnover and Debtors turnover ratios and their mean standard deviation are used. Working capital estimation was done based on the length operating cycle. Single factor ANOVA test of Current Ratio and Return on Assets and Regression statistics tests are conducted to analyze their significance and co-relation between Current ratio and Return on asset. The result of the study shows that the selected pharmaceutical companies are maintained satisfactory working capita during the study period, there is significance difference in mean values and weak positive linear co-relationship found in between Current Ratio and Return on Asset at five percent significance level.



**KEY WORDS :** Liquidity, Pharmaceutical companies, Current ratio, Inventory turnover ratio, Debtors turnover ratio, Return on Asset.

### INTRODUCTION

Liquidity is the ability of the organization to transfer one form of wealth to another. It is one of the key factor which determines profitability of a firm. Liquidity refers to the difference between current assets and current liabilities. Keeping sufficient liquidity to meet current liabilities is vital important for the institutions which have leverages. The excess current assets over current liabilities smoothens day to day business operations and also effects on profitability. Investment in current assets gives fewer returns than the long term investments and it is also necessary for short term survival. Large inventory and liberal trade credit policy boosts the sales. Therefore, liquidity is called as the lifeline of any institution either it may be financial or non financial. It acts as lubricant for operating cycle (conversion of cash into raw materials, inventories, receivables and cash). The higher the time lag in conversion cycle, larger the investment require in working capital. The change in accounts payables to supplier's policy also affects the size of working capital. Small blockages in operating cycle will effects on firm profitability and reputation too. Therefore, identifying, measuring and maintaining liquidity is essential part of the overall management of a firm.

### OBJECTIVE OF THE STUDY:

1. To measure the working capital managing efficiency of selected pharmaceutical companies.
2. To study the impact of Current Ration on Return on Asset of selected pharmaceutical companies.

## RESEARCH METHODOLOGY

### Data and Sample

This study is purely based on data gathered from secondary sources which is collected from annual reports of companies, different publications and websites. Numerical data collected has been classified, tabulated, analyzed and interpreted with the help of different financial ratios and statistical tools. The sample selected for this study is top five pharmaceutical companies of India namely Sun Pharmaceutical Ltd., Lupin Pharmaceutical Ltd., Cipla Ltd., Dr. Reddy's Laboratories Ltd. and Arobindo Pharma Ltd. The present study covers the period of five years from 2012-13 to 2016-17.

### Hypothesis

Ho1- There is no significance difference in the mean value of Current Ratio

Ho2- There is no significance difference in the mean value of Return on Asset

Ho3- There is no relationship between mean value of Current Asset and Return on Asset

## RESULT AND DISCUSSION

The researcher has applied below mentioned chronology for results and discussion:

1. Liquidity ratios analysis of selected pharmaceutical companies
2. Current Ratio, Return on Assets and their significance analysis
3. Impact of Current Ratio on Return on Asset analysis

### 1. Liquidity ratios analysis of selected pharmaceutical companies

**Table -1: Working Capital Ratio Analysis of Sun Pharmaceutical co. Ltd Rs. In crore**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	S.D
Current Ratio	3.37	1.4	0.49	0.6	0.58	1.29	1.22
Quick Ratio	2.61	1.15	0.3	0.36	0.37	0.96	0.99
Inventory Turnover Ratio	2.8	3.08	3.66	3.57	3.37	3.30	0.36
Debtors Turnover Ratio	3.04	6.02	4.29	3.54	2.72	3.92	1.31
Finished Goods Turnover Ratio	2.68	3.07	3.6	3.4	3.29	3.21	0.35
Actual W.C maintained	2124.04	777.94	7668.49	6769.49	6459.7	4759.93	3089.96
Estimated W.C	1902.7	903.29	6905.51	5911.72	6145.51	4353.75	2741.46
Excess/shortfall	221.34	-125.35	762.98	857.77	314.19	406.19	405.09

Source: Annual reports of Sun Pharmaceutical Co. Ltd.

The table-1 reveals the liquidity ratios of the Sun Pharmaceutical Co. Ltd for five succeeding years. The company has maintained sufficient current assets to discharge its current liabilities in the initial two years and found inadequate liquidity in the later years of study period. The average current and quick ration of the company found 1.29 :1 and 0.96:1 which is less than the ideal benchmark of 2:1 and 1:1. The inventory turnover ratio, debtor's turnover ratio and finished goods turnover ratio are fluctuated and average conversion period found more than 3 times in a year. The overall average inventory conversion turnover ratio found 3.30 times (approx 110 days) and the average debtor & finished goods conversion period found 3.92 times (approx 94 days) and 3.21 times (approx 113 days). Estimation of working capital is done based on the operating cycle for the five years and found that the Sun Pharmaceutical Company has

kept sufficient working capital than the required amount during the study period excluding for the year 2013-14.

**Table -2: Working Capital Ratio Analysis of Lupin Pharmaceutical co. Ltd Rs. In crore**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	S.D
Current Ratio	2.01	3.45	3.89	3.15	3.61	3.22	0.73
Quick Ratio	1.29	2.51	2.84	2.32	2.78	2.35	0.63
Inventory Turnover Ratio	5.35	6.51	5.61	5.89	6	5.87	0.44
Debtors Turnover Ratio	3.74	3.06	3.82	2.37	3.17	3.23	0.59
Finished Goods Turnover Ratio	5.31	6.45	5.57	5.7	5.8	5.77	0.42
Actual W.C maintained	1642.03	3346.58	4296.61	4831.03	6545.93	4132.44	1813.81
Estimated W.C	1475.06	4057.95	3974.57	4151.23	5982.23	3928.21	1605.12
Excess/shortfall	166.97	-711.37	322.04	679.8	563.7	204.23	549.77

Source: Annual reports of Lupin Pharmaceuticals Ltd.

It is clear from the table-2 that Lupin Ltd had maintained sufficient liquidity during the study period. The average current ratio and quick ratio are found at 3.22:1 and 2.55:1 respectively. There is oscillation found in inventory turnover ratio, debtor's turnover ratio and finished goods turnover ratio. The average inventory conversion, debtors conversion and finished goods conversion found 62 days, 113 days and 63 days approximately.

**Table -3: Working Capital Ratio Analysis of Dr. Reddy's Laboratories Ltd. Rs. In crore**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	S.D
Current Ratio	1.62	2.16	2.22	2.1	2.01	2.02	0.24
Quick Ratio	1.25	1.77	1.85	1.74	1.59	1.64	0.24
Inventory Turnover Ratio	5.53	6.11	5.81	6.01	5.37	5.77	0.31
Debtors Turnover Ratio	2.78	2.11	2.1	2.6	2.18	2.35	0.31
Finished Goods Turnover Ratio	5.44	6.11	5.8	6.02	5.32	5.74	0.35
Actual W.C maintained	2130.8	4314.1	5185.2	4715.8	4127.4	4094.66	1170.58
Estimated W.C	1937.07	3923.96	6026.06	5374.17	3765.03	4205.26	1588.97
Excess/shortfall	193.73	390.14	-840.86	-658.37	362.37	-110.60	591.69

Source: Annual reports of Dr. Reddy's Laboratories Ltd.

As analyzed in the table-3, the current ratio and quick ratio of Dr. Reddy's Laboratories Ltd is showing variation over the years but maintained sufficient working capital. The average current ratio and quick ratio are found at 2.02:1 and 1.64:1 respectively. There is instability also found in inventory turnover ratio, debtor's turnover ratio and finished goods turnover ratio. The average inventory conversion and

finished goods conversion found 63 days (aprxm) respectively. There is poor debtors conversion period found (155 days aprxm) during the study period.

**Table -4: Working Capital Ratio Analysis of Cipla Pharmaceutical co. Ltd Rs. In crore**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	S.D
Current Ratio	3.01	2.1	1.83	2.18	2.48	2.32	0.45
Quick Ratio	1.98	1.07	0.91	1.2	1.44	1.32	0.42
Inventory Turnover Ratio	3.5	3.74	3.08	4.15	4.14	3.72	0.45
Debtors Turnover Ratio	4.88	5.25	4.73	6.26	5.5	5.32	0.60
Finished Goods Turnover Ratio	3.47	3.65	2.98	4.06	4.02	3.64	0.44
Actual W.C maintained	4341.96	2437.16	2630.4	3263.68	3541.58	3242.96	761.90
Estimated W.C	3982.62	2103.97	2700.43	3101.95	3045.15	2986.82	683.69
Excess/shortfall	359.34	333.19	70.03	161.73	496.43	284.14	168.79

Source: Annual reports of Dr. Reddy's Laboratories Ltd.

As examined in the table-4, the Cipla Ltd has maintained adequate liquidity to meet the current liabilities during the succeeding period. The average current ratio and quick ratio are found 2.32:1 and 1.32:1 respectively. There is swing noticed in inventory turnover ratio, debtor's turnover ratio and finished goods turnover ratio. The average inventory conversion debtors conversion and finished goods conversion found 98 days, 68 days and 100 days respectively.

**Table -5: Working Capital Ratio Analysis of Aurobindo Pharma Ltd . Rs. In crore**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	S.D
Current Ratio	1.31	1.53	1.61	1.45	1.55	1.49	0.12
Quick Ratio	0.79	1.01	1.07	1.00	1.00	0.97	0.11
Inventory Turnover Ratio	3.79	4.15	3.77	3.77	3.95	3.89	0.17
Debtors Turnover Ratio	3.07	2.37	2.16	2.03	2.48	2.42	0.40
Finished Goods Turnover Ratio	3.83	4.21	3.8	3.73	3.91	3.90	0.19
Actual W.C maintained	778.05	1657.72	2335.87	2380.88	2390.4	1908.58	703.35
Estimated W.C	716.83	1512.08	2467.23	2207.58	2205.39	1821.82	712.29
Excess/shortfall	61.22	145.64	-131.36	173.3	185.01	86.76	131.18

Source: Annual reports of Aurobindo Pharma Ltd.

It is clear from the table-5 that the current ratio of Aurobindo has sufficient liquid assets (average 1.49:1) to discharge its current liabilities. The company maintained an average of 0.97:1 quick ratio over the period. The performance of the inventory turnover ratio has been fluctuating in all the five years and it has maintained an average turnover of 3.89 times and 3.90 times ( approxm.94 days and 93 days ) respectively.

And finally in the debtor turnover ratio is fluctuating over the years and found an average collection period of 151 days approximately. This indicates that the company is facing challenges in collect its debt rapidly.

## II Analysis of Current Ratio, Return on Assets and their significance

**Table-6: Trend of Current Ratio under study period**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	Variance
Sun Ltd	3.37	1.4	0.49	0.6	0.58	1.29	1.49
Lupin Ltd.	2.01	3.45	3.89	3.15	3.61	3.22	0.53
Dr. Reddys Laboratories Ltd	1.62	2.16	2.22	2.1	2.01	2.02	0.06
Cipla.Ltd	3.01	2.1	1.83	2.18	2.48	2.32	0.20
Aurobindo Pharma Ltd	1.31	1.53	1.61	1.45	1.55	1.49	0.01

Source: Money control.com

Ho1- There is no significance difference in the mean value of Current Ratio of selected pharmaceutical companies.

### Test results

ANOVA: Single Factor

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	11.6991	4	2.924774	6.3782821	0.0017736	2.8660814
Within Groups	9.17104	20	0.458552			
Total	20.870136	24				

Level of significance 0.05

Results of the hypothesis testing revealed that calculated F value is greater than critical F value ( $6.378 > 2.866$ ). Hence, null hypothesis is rejected. Therefore, there is significance difference in mean value of Current Ratio.

**Table-7: Trend of Return on Asset under study period**

Year	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	Variance
Sun Ltd	0.0558	-0.2044	-0.0393	-0.0313	-0.0010	-0.0440	0.0094
Lupin Ltd.	0.1788	0.2641	0.2177	0.1988	0.1760	0.2071	0.0013
Dr. Reddys Laboratories Ltd	0.1055	0.1332	0.1020	0.0771	0.0841	0.1004	0.0005
Cipla.Ltd	0.1311	0.1074	0.0777	0.0959	0.0624	0.0949	0.0007
Aurobindo Pharma Ltd	0.0726	0.1366	0.1482	0.1294	0.1310	0.1236	0.0009

Source: Money Control.com

Ho2- There is no significance difference in the mean value of Return on Asset of selected pharmaceutical companies.

**Test results**

ANOVA: Single Factor

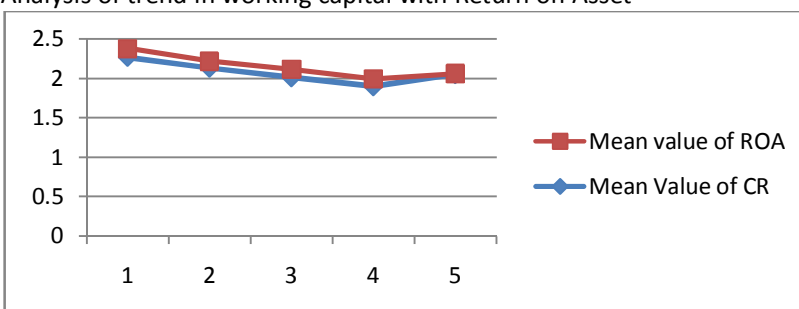
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	0.1636	4	0.0409	16.01	5E-06	2.8661
Within Groups	0.0511	20	0.0026			
Total	0.2148	24				

Level of significance 0.05

Results of the hypothesis testing revealed that calculated F value is greater than critical F value (16.01 > 2.866). Hence, null hypothesis is rejected. Therefore, there is significance difference in mean value of Return on Asset.

**III. Impact of Current Ratio on Return on Asset**

Analysis of trend in working capital with Return on Asset



Ho3- There is no relationship between mean value of Current Asset and Return on Asset of selected pharmaceutical companies.

**Regression analysis**

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.177698462
R Square	0.031576743
Adjusted R Square	-0.291231009
Standard Error	0.046027748
Observations	5

ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	0.000207235	0.000207	0.097819036	0.774943717
Residual	3	0.006355661	0.002119		
Total	4	0.006562896			

	Coefficients	Standard Error	t Stat	P-value
Intercept	-0.02815	0.346674122	-0.081196198	0.940399528
Mean Value of CR	0.052328	0.167309261	0.31276035	0.774943717

Level of significance 0.05

In the above test the R Square value is found at 0.031 which is  $0 < R \text{ square} < 1$ . It can be inferred that there is weak linear relationship between Current Ratio and Return on Asset. The computed F value 0.0978 is smaller than the significance F value and the P value is 0.940. Therefore, at 5% level of significance we can accept null hypothesis and conclude that there is no strong relationship between current ratio and return on asset.

## CONCLUSION

The result of the study in the preceding pages indicates that the liquidity position of selected pharmaceutical companies is found satisfactory during the study period. The mean value of Current Ratio of Lupin Ltd., Dr. Reddy Laboratories Ltd and Cipla Ltd companies found more than 2:1. There is need of efficient management in Inventories and debtors turnovers ratio of selected pharmaceuticals companies. If Inventories and debtors are not turned over as quickly as possible the firm might result in closing down the production line, leads to a loss of sale and bad debts. Poor Inventory turnover period found (average 155 days aprxm) in case of Sun Pharmaceuticals and Debtors turnover (average 155 days aprxm) in case of Dr. Reddy's Laboratories Ltd. The study also reveals that there is significance difference in mean value of Current ratio's and there is no significance difference in the mean value of Return on Asset at 5% significance level. Correlation and Regression study indicates that there is weak linear positive relationship between Current Ratio and Return on Asset of selected companies. It is worthwhile to mention here that, this study has conducted only five pharmaceuticals companies which are working in India, therefore, the room for error exists and the findings of the study can not be generalized for a wider area.

## REFERENCES:

1. Md. Kaysher Hamid and Rowshonara Akter Akhi "Liquidity and Profitability Trade-off in Pharmaceuticals and Chemicals Sector of Bangladesh". International Journal of Science and Research (IJSR), Volume 5 Issue 9, September 2016.
2. Dr. Monika Maheshwari "Measuring Efficiency and Performance of Selected Indian Steel Companies in the Context of Working Capital Management". Pacific Business Review International Volume 6, Issue 11, May 2014.
3. Mohmad Mushtaq Khan and Dr. Syed Khaja Safiuddin "Liquidity and Profitability Performance Analysis of selected Pharmaceutical companies" International Journal of Science and Technology and Management. Vol.5, Issue No.01, January 2016.
4. EHIEDU, Victor Chukwunweike, "The Impact of Liquidity on Profitability of Some Selected Companies: The Financial Statement Analysis (FSA) Approach". Research Journal of Finance and Accounting, Vol.5, No.5, 2014.
5. D. Srinivasa Kumar. "Effect of Working Capital on Firm's profitability: A Pragmatic Study with Reference to Pharmaceutical companies in India". International Journal of Advanced Research", 5(7), 668-672.
6. Dr. P Jayasubramanian and Dr. M Prakash and KA Ramya, "Liquidity analysis of selected Indian pharmaceutical companies" International Journal of Applied Research 2017; 3(1): 267-271.
7. S. Pramila & K. Kumar, "Working Capital Management In Tata Steel Limited" International Journal of Research in Business Management Vol. 4, Issue 5, May 2016, 109-116
8. Umayya Salma Shajahan and M. Suganya, "The Impact Of Working Capital Management On Firm's Performance Of Selected Companies In Bombay Stock Exchange" . International Journal of Advanced Scientific Research & Development , Vol. 04, Iss. 07, Ver. I, Jul' 2017, pp. 19 – 49
9. Simrajeet Singh and Harwinder Kaur, "Working Capital Management And Profitability: Evidence From Selected Steel Manufacturing Companies In India". Indian Journal of Commerce & Management Studies, Volume VIII Issue 2, May 2017.

10. Jeyan Suganya S. N “Working Capital Management and Firms’ Profitability: The Listed Companies in Sri Lankan Context”. International Journal of Emerging Research in Management &Technology, Volume-5, Issue-7, July, 2016.