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Liquidity analysis of selected Indian pharmaceutical companies

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Abstract
Indian Pharmaceutical Industry is highly fragmented, with more than 20,000 registered companies, with top 25 companies controlling 70% approx. of the Indian market. 70% of India's demand is met by Indian Pharmaceutical Industry in the form of Bulk Drugs, Intermediates, Formulations, chemicals, tablets, capsules, orals, injections, powders, vaccines etc. The Indian pharmaceutical industry is at present enjoying a top rank among the developing nations with wide ranging capabilities in the complex field of drug manufacturing and technology used. The study concentrates on to ascertain the debt repayment capacity of the selected Pharmaceutical companies of India. Investors often take a close look at liquidity ratios when performing fundamental analysis on a firm. Selected companies are lack in liquidity management and high cost of production, higher labor cost and inefficient auditing of company's business activities. To sum up, the adoption of suggestive measures will certainly help the selected units to improve their financial performances. Thus, the growth and all round development of this industry has a direct bearing on the improvement of India's economy.

Keywords: Liquidity, pharmaceutical, formulations, bulk drugs and repayment

Introduction
The pharmaceutical industry plays a key role in promoting and sustaining development in the field of medicines. From simple headache pills to sophisticated antibiotics and complex cardiac compounds, almost every type of medicine is now made indigenously.

The Indian pharmaceutical Industry is the world's third-largest in terms of volume. India has achieved an eminent global position in pharma sector. The Indian Pharmaceutical Industry has been the front runner in a wide range of specialties involving complex drug manufacture, development, and technology. The pharmaceutical industry in India meets around 70% of the country's demand for bulk drugs, drug intermediates, pharmaceutical formulation, chemicals, tablets, capsules, orals and injectable. The Indian pharma market size is expected to grow to US $85 billion by 2020.

Liquidity or Solvency position of a company may be analyzed on the basis of short term and long term solvency or liquidity. Liquidity or short term solvency means the ability of the enterprise to meet short term obligations as and when they become due. While long term solvency means the ability of the enterprise to meet long-term obligations on the due date. Long term solvency implies the capacity of the company to pay off the claims of debenture holders, preference shareholders and other long term creditors. The study concentrates on to ascertain the debt repayment capacity of the selected Pharmaceutical companies of India. Investors often take a close look at liquidity ratios when performing fundamental analysis on a firm. Since a company that is consistently having trouble meeting its short-term debt is at a higher risk of bankruptcy, liquidity ratios are a good measure of whether a company will be able to comfortably continue as a going concern. The solvency ratio is used to examine the ability of a business to meet its long-term obligations. This ratio is most commonly used by current and prospective lenders

Need For the Study
A study of liquidity is of major importance to both the internal and the external analysts because of its close relationship with day-to-day operations of a business.

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Liquidity management is very important for every organization that means to pay current obligations on business, the payment obligations include operating and financial expenses that are short term but maturing long term debt. Liquidity ratios measure the ability of a firm to meet its short-term obligations. The ability to pay short-term debt is of concern to anyone who interacts with the company. If a company cannot maintain a short-term debt-paying ability, it will not be able to maintain a long term debt-paying ability, nor will it be able to satisfy its stockholders. The liquidity ratios look at aspects of the company's assets and their relationship to current liabilities

Objectives of the Study
- To study the growth and development of selected Pharmaceutical companies
- To know the liquidity position of selected Pharmaceutical companies

The ratio is a simple arithmetical expression of the relationship of one number to another. The ratio analysis is one of the most powerful tools of financial analysis. It is the process of establishing and interpreting various ratios. It is with the help of ratios that the financial statements can be analyzed more clearly. With the help of ratio analysis financial executives can measure whether the firms at present are financially healthy or not. They highlight the liquidity, solvency and profitability of the firm. Most researchers divide the financial ratios into following groups:

Liquidity Ratio: It is a financial metrics that is used to determine a company's ability to pay off its short-terms debts obligations. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short-term debts. The following are the types of liquidity ratios:
- Current ratio
- Quick ratio
- Absolute liquid ratios
- Cash conversion cycle

Solvency Ratio: It is a key metric used to measure an enterprise's ability to meet its debt and other obligations. The solvency ratio indicates whether a company's cash flow is sufficient to meet its short-term and long-term liabilities. The lower a company's solvency ratio, the greater the probability that it will default on its debt obligations. The following are the types of solvency ratios:
- Debt asset ratio
- Capital gearing ratio
- Debt equity ratio
- Financial leverage ratio
- Proprietory ratio
- Fixed assets to net worth ratios

Activity Ratio: This ratios are used to measure the relative efficiency of a firm based on its use of its assets, leverage or other such balance sheet items. These ratios are important in determining whether a company's management is doing a good enough job of generating revenues, cash, etc. from its resources. The following are the types of activity ratios:
- Inventory turnover ratio
- Inventory turnover period
- Debtors turnover ratios

- Average collection period
- Creditors turnover ratios
- Average payment period
- Working capital turnover ratios
- Fixed assets turnover ratios
- Total assets turnover ratio
- Capital turnover ratio

Research Methodology
The type of research methodology used in this study is descriptive as well as analytical in nature.

Sample for the study: The universe of Indian pharmaceutical companies consists of Presently there are 10,500 manufacturing units and over 3,000 pharma companies in India, growing at an exceptional rate. Out of top 15 listed companies in BSE, irrespective of their size to see to what extent they are financially strength, and liquidable.
The selected top most companies is followed by the financial year (i.e.) starting from 1st
April to 31st March. The companies are Lupin Ltd, Dr. Reddy's Labs Ltd, Aurobindo Pharma Ltd, Sun Pharmaceutical Industries Ltd, Cardila Health Care Ltd, Glenmark Ltd, Torrent Pharma Ltd, Glaxo Smith Kline (GSK) Ltd, IPCA Ltd, Abbott India Ltd, Biocon Ltd, Sanofi India Ltd, Pfizer Ltd, Novartis India Ltd, Ajanta Pharma Ltd.

Period of study: The study covers a period of 15 years covering a period from 2000-01 to 2014-15. It is also decided by taking into consideration of the availability of data.

Source of data and Framework of analysis
This study is based mainly on secondary data. The data relating to the study is obtained from CMIE (Centre for Monitoring Indian Economy) date base, namely PROWESS. In addition, the annual reports of the sample companies, Magazines, Journals were also referred for finalizing the methodology for the study.

Data Analysis
For the purpose of this study, the ratios namely, Liquidity ratios, Activity ratios, Solvency ratios has used. The role of statistical tools is important in analyzing the data and drawing inferences there from. In order to derive the results from the information collected through secondary data, various statistical tools such as Mean, Standard Deviation, Coefficient of Variance, Compound Average Annual Growth Rate, Average Annual Growth Rate, Anova, and Trend Analysis has been accomplished through EXCEL and SPSS software.

Hypotheses of the Study
1. There is no significant difference in the mean values of financial ratios between the selected pharmaceutical companies and the years.
2. There is no significant relationship between the actual values and trend values for the net sales, cost of goods sold, net profit and earnings per share of the selected pharmaceutical companies.

Findings
- In current ratio, the highest average found is 5.18 in Sun Pharmaceutical Industries Ltd. The lowest consistency in current ratio is seen in IPCA Ltd since its CV is 0.12. The highest CAGR value is found in Abbot India ltd is 10.46. The highest AAGR value is found in Novartis India Ltd is 26.64. The difference in current ratio is insignificance between the years and significance between the companies.
- In quick ratio, the highest average found is 3.74 in Sun Pharmaceutical Industries Ltd. The lowest consistency is seen in Sun Pharmaceutical Industry Ltd since its CV is 0.11. The highest CAGR value is found in Abbot India Ltd is 17.45.The highest AAGR value is found in Novartis India Ltd is 60.65. The difference in quick ratio is insignificance between the years and significance between the companies.
- In absolute liquid ratio, the highest average found is 2.67 in Pfizer Ltd. The lowest consistency is seen in Sanofi India Ltd since its CV is 0.63. The highest CAGR value is found in Abbot India Ltd is 34.32.The highest AAGR value is found in Biocon Ltd is 1418.46. The difference in absolute liquid ratio is insignificance between the years and significance between the companies.
- In cash conversion cycle, the highest average found is 4.16 in Sun Pharmaceutical Industries Ltd. The lowest consistency is seen in Dr. Reddy's Ltd since its CV is 11.09. The highest CAGR value is found in Ajanta Pharma Ltd is 8.69.The highest AAGR value is found in Dr. Reddy's Ltd is 107.59. The difference in cash conversion cycle is insignificance between the years and significance between the companies.
- In debt asset ratio, the highest average found is 0.55 in Aurobindo Ltd. The lowest consistency is seen in Aurobindo Pharma Ltd since its CV is 0.11. The highest CAGR value is found in Sun Pharmaceutical Industries Ltd is 3.19.The highest AAGR value is found in Sun Pharmaceutical Industries Ltd is 29.14. The difference in debt asset ratio is significance between the years and significance between the companies.
- In capital gearing ratio, the highest average found is 0.82 in Lupin Ltd. The lowest consistency is seen in IPCA Ltd since its CV is 0.90. The highest CAGR value is found in Cardila Health Care Ltd is 7.66. The highest AAGR value is found in Torrent Pharma Ltd is 67878.04. The difference in capital gearing ratio is significance between the years and significance between the companies.
- In debt equity ratio, the highest average found is 1.43 in Aurobindo Pharma Ltd. The lowest consistency is seen in IPCA Ltd since its CV is 0.25. The highest CAGR value is found in Sun Pharmaceutical Industry Ltd is 5.33. The highest AAGR value is found in Sun Pharmaceutical Industry Ltd is 60.87. The difference in debt equity ratio is significance between the years and significance between the companies.
- In financial leverage ratio, the highest average found is 2.47 in Glaxo Smith Kline Ltd. The lowest consistency is seen in Sanofi India Ltd since its CV is 0.11. The highest CAGR value is found in Biocon Ltd is 16.56. The highest AAGR value is found in in Torrent Pharma Ltd is 2.86. The difference in financial leverage ratio is significance between the years and significance between the companies.
- In proprietory ratio, the highest average found is 4.07 in Biocon Ltd. The lowest consistency is seen in Dr. Reddy's Ltd since its CV is 0.15. The highest CAGR value is found in in Sanofi India Ltd is 2.61. The highest AAGR value is found in Sanofi India Ltd is 4.09. The difference in proprietory ratio is significance between the years and significance between the companies.
- In fixed assets to net worth ratio, the highest average found is 0.60 in Ajanta Pharma Ltd. The lowest consistency is seen in Cardila Health Care Ltd since its CV is 0.18. The highest CAGR value is found in in Pfizer Ltd is 18.75. The highest AAGR value is found in Pfizer Ltd is 209.04. The difference in fixed assets to net worth ratio is insignificance between the years and significance between the companies.
- In inventory turnover ratio, the highest average found is 3.95 in Abbott India Ltd. The lowest consistency is seen in Cardila Health Care Ltd since its CV is 0.09. The highest CAGR value is found in in Glenmark Ltd is 4.72. The highest AAGR value is found in Sun Pharmaceutical Industry Ltd is 9.06. The difference in inventory turnover ratio is insignificance between the years and significance between the companies
- In inventory turnover period, the highest average found is 5.88 in Torrent Pharma Ltd. The lowest consistency is seen in Dr. Reddy's and Cardila Health Care Ltd since its CV is 0.10. The highest CAGR value is found in in Biocon Ltd is 7.00. The highest AAGR value is found in Biocon Ltd is 10.79. The difference in inventory turnover period is insignificance between the years and significance between the companies.
- In debtors turnover ratio, the highest average found is 10.55 in Glaxo Smith Kline Ltd. The lowest consistency is seen in IPCA Ltd since its CV is 0.11. The highest CAGR value is found in Ajanta Pharma Ltd is 11.17. The highest AAGR value is found in Ajanta Pharma Ltd is 13.02. The difference in debtors turnover ratio is insignificance between the years and significance between the companies.
- In average collection period, the highest average found is 19.83 in Abbott Pharma Ltd. The lowest consistency is seen in in IPCA Ltd since its CV is 0.11. The highest CAGR value is found in Torrent Pharma Ltd is 11.60. The highest AAGR value is found in Biocon Ltd is 15.18. The difference in average collection period is insignificance between the years and significance between the companies.
- In creditors turnover ratio, the highest average found is 2.55 in Sanofi India Ltd. The lowest consistency is seen in Torrent Pharma Ltd since its CV is 0.17. The highest CAGR value is found in Abbott Pharma Ltd is 7.14. The highest AAGR value is found in Glaxo Smith Kline Ltd is 5.62. The difference in creditors turnover ratio is significance between the years and significance between the companies
- In average payment period, the highest average found is 64.51 in Novartis India Ltd. The lowest consistency is seen in Novartis India Ltd, Ajanta Pharma Ltd since its CV is 0.71. The highest CAGR value is found in Biocon Ltd is 8.64. The highest AAGR value is found in Sun Pharmaceutical Industry Ltd is 5.89. The difference in average payment period is insignificance between the years and significance between the companies.

Suggestions
Liquidity Ratios
❖ The average of current ratio of Cardila Health Care Ltd, Torrent Pharma Ltd, IPCA Ltd, Abbott India Ltd, Biocon Ltd, Novartis India Ltd which is below the rule of thumb 2:1 and all the companies have very higher than the rule of thumb and all other companies are satisfactorily maintaining their current assets. Hence it is suggested all the Companies such as maintaining more current asset it's a sign of maintaining more inventories in hand, it reveals they too cannot able to meet their short term obligations properly. To solve the inventory problem, it is suggested that they have to improve their inventory control system by using all the modern sophisticated techniques.

❖ The average of quick ratio of Lupin Ltd, Aurobindo Pharma Ltd, Cardila Health Care Ltd, Glenmark Ltd, Torrent Pharma Ltd, IPCA Ltd, Biocon Ltd, Novartis India Ltd, Ajanta Pharma Ltd which is below the rule of thumb 1:1 and all other companies are satisfactorily maintaining their quick assets. Hence it is suggested that have to focus on maintaining more cash balances to meet their short term obligations.

❖ The average of cash conversion cycle of Cardila Health Care Ltd, Torrent Pharma Ltd, Glaxo Smith Kline Ltd, Abbott India Ltd, Pfizer Ltd, Novartis India Ltd and Ajanta Pharma Ltd is on negative terms. The collection policy of the firm in general is not found to be satisfactory. This situation can be modified by following an appropriate receivables policy. A better co-ordination between sales, production and finance departments should maintain prompt billing, timely reminders to defaulting customers and immediate action against delinquent accounts should be ensured. The collection policy should be evaluated periodically.

Solvency Ratios
❖ The average of debt asset ratio of the companies are lesser than one (i.e.) they are financed by equity instead of debt. It is suggested that if the company wants to enjoy more leverage they can use debt financing.

❖ The average of capital gearing ratio of Pfizer Ltd is more comparable to other companies. So it must use less proportion of debt and preferred stock as it bears regular payments, then only it will attract the investors because they prefer more dividends.

❖ The average of debt equity ratio of Glaxo Smith Kline Ltd is less than one which means they are financed by debt at very low level hence it is suggested that they can increase their debt proportion to attract the investors.

➢ In working capital turnover ratio, the highest average found is 12.18 in Abbott India Ltd. The lowest consistency is seen in IPCA Ltd since its CV is 0.10.. The highest CAGR value is found in Ajanta Pharma Ltd is 7.74. The highest AAGR value is found in no one have higher value. The difference in working capital turnover ratio is insignificance between the years and significance between the companies.

➢ In fixed assets turnover ratio, the highest average found is 58.62 in Novartis India Ltd. The lowest consistency is seen in Cardila Health Care Ltd since its CV is 0.16. The highest CAGR value is found in Novartis India Ltd is 24.58. The highest AAGR value is found in Novartis India Ltd is 40.91. The difference in fixed assets turnover ratio is significance between the years and significance between the companies.

Conclusion
On the basis of critical evaluation of financial performance of sample companies, it is observed that the liquidity and solvency position of Lupin Ltd, Aurobindo Pharma Ltd, Cardila Health Care Ltd, Glenmark Ltd, Torrent Pharma Ltd, IPCA Ltd, Biocon Ltd, Novartis India Ltd, Ajanta Pharma Ltd are not good. In case of profitability performance of Lupin Ltd, Dr. Reddy's Labs Ltd, Glenmark Ltd, Glaxo Smith Kline Ltd, Novartis India Ltd are not good. This is due to inefficient in liquidity management and high cost of production, higher labor cost and inefficient auditing of company's business activities. To sum up, the adoption of above said suggestive measures will certainly help the selected units to improve their financial performances. Thus, the growth and all round development of this industry has a direct bearing on the improvement of India's economy.

Significant Difference Among The Companies Debt Equity Ratio
H0: There is no significant difference among the mean values of debt equity ratio between the selected companies and the years.
In order to test the null hypothesis, the analysis of variance has been applied among all the selected companies and between the years.

Table 4.7(b): Analysis of Variance test of Debt asset Ratio

Source of Variation	F value	F critical value
Between the years	2.91163	1.74253
Between the companies	16.3413	1.74253

Year	Alok Ltd.		Arvind Ltd.		Garden Ltd.		Grasim Ltd.		Orbit Ltd.	
	Actual Value	Trend Value	Actual Value	Trend Value	Actual Value	Trend Value	Actual Value	Trend Value	Actual Value	Trend Value
2001	444.73	-4400.4	1971.39	723.67	444.6	25.8339	5206.24	6830.53	14.01	-17.331
2002	567.82	-2827.2	739.69	982.414	451.93	297.265	5079.7	6887.07	11.72	-6.6312
2003	801.51	-1254.1	1551.97	1241.16	524.6	568.696	5426.8	6943.61	9.59	4.06858
2004	1143.14	319.094	1457.85	1499.9	608.15	840.128	6150.26	7000.15	9.76	14.7683
2005	1329.35	1892.25	1702.53	1758.65	754.59	1111.56	7232.03	7056.69	16.16	25.4681
2006	1486.48	3465.4	1623.39	2017.39	1080.15	1382.99	7661.08	7113.23	23.6	36.1678
2007	1915.31	5038.55	1853.65	2276.14	1514.33	1654.42	9627.13	7169.78	27.21	46.8676
2008	2352.89	6611.7	2235.14	2534.88	1824.25	1925.85	11604.7	7226.32	38.4	57.5673
2009	3154.16	8184.86	2378.79	2793.62	1385.39	2197.28	12179	7282.86	44.01	68.2671
2010	4520.88	9758.01	2306.39	3052.37	2663.2	2468.72	8939.35	7339.4	61.68	78.9668
2011	6633.57	11331.2	2666.69	3311.11	3668.28	2740.15	5032.03	7395.94	89.88	89.6666
2012	9266.98	12904.3	3523.66	3569.86	3764.41	3011.58	5371.09	7452.48	102.1	100.366

2013	20558.1	14477.5	3902.77	3828.6	4026.2	3283.01	5771.9	7509.02	120.96	111.066
2014	22500.3	16050.6	4879.62	4087.35	3330.71	3554.44	6157.51	7565.57	137.02	121.766
2015	22500.3	17623.8	5229.67	4346.09	2847	3825.87	6955.88	7622.11	157.41	132.466
T.E	$y = 1573.2x - 5973.5$		$y = 258.74x + 464.93$		$y = 271.43x - 245.6$		$y = 56.541x + 6774$		$y = 10.7x - 28.031$	

YEAR	LUP LTD	DR.R LTD	AUR LTD	SUN LTD	CAR LTD	GEN LTD	TOR LTD	GSK LTD	IPCA LTD	ABB LTD	BIO LTD	SANO LTD	PFIZ LTD	NOV LTD	AJA LTD
2000-01	2.36	0.88	1.28	0.21	0.21	0.81	0.66	0.38	1.15	0.87	0.96	0.80	0.50	0.90	0.30
2001-02	2.30	0.13	1.36	0.13	0.58	0.93	0.44	0.29	1.28	0.51	1.24	0.57	0.37	0.31	0.41
2002-03	2.18	0.14	1.37	0.13	1.02	1.17	0.25	0.36	0.86	0.34	1.04	0.44	0.37	0.35	0.43
2003-04	1.28	0.17	1.02	0.50	0.85	0.75	0.23	0.31	0.85	0.25	0.33	0.36	0.31	0.28	0.46
2004-05	1.36	0.31	1.30	1.77	0.72	1.76	0.95	0.24	0.91	0.19	0.39	0.16	0.37	0.28	1.02
2005-06	1.88	0.65	1.65	1.31	0.70	2.63	0.98	0.28	0.79	0.18	0.36	0.16	0.36	0.22	1.00
2006-07	1.37	0.22	2.47	0.63	0.69	2.43	0.91	0.21	0.74	0.16	0.30	0.18	0.36	0.20	1.20
2007-08	1.07	0.24	1.78	0.20	0.80	0.78	0.91	0.18	0.81	0.18	0.23	0.16	0.16	0.16	1.52
2008-09	1.25	0.32	1.98	0.12	0.76	1.05	1.03	0.18	1.01	0.37	0.28	0.17	0.14	0.17	1.89
2009-10	0.60	0.34	1.33	0.05	0.51	0.54	0.93	0.18	0.73	0.21	0.37	0.17	0.13	0.17	1.54
2010-11	0.53	0.43	1.20	0.05	0.40	0.68	0.88	0.18	0.70	0.32	0.25	0.17	0.14	0.16	1.09
2011-12	0.53	0.48	1.38	0.06	0.60	0.41	0.84	0.14	0.74	0.30	0.26	0.20	0.13	0.17	1.15
2012-13	0.34	0.47	1.27	0.07	0.68	0.50	0.83	0.17	0.61	0.22	0.25	0.20	0.11	0.18	0.77
2013-14	0.18	0.49	1.06	0.48	0.52	0.41	0.78	0.18	0.51	0.24	0.25	0.21	0.33	0.17	0.51
2014-15	0.13	0.48	0.85	0.45	0.42	0.49	1.24	0.24	0.61	0.27	0.22	0.29	0.21	0.15	0.27
MIN	0.13	0.13	0.85	0.05	0.21	0.41	0.23	0.14	0.51	0.16	0.22	0.16	0.11	0.15	0.27
MAX	2.36	0.88	2.47	1.77	1.02	2.63	1.24	0.38	1.28	0.87	1.24	0.80	0.50	0.90	1.89
AVERAGE	1.16	0.38	1.42	0.41	0.63	1.02	0.79	0.24	0.82	0.31	0.45	0.28	0.27	0.26	0.90
S.D	0.77	0.21	0.41	0.50	0.20	0.71	0.28	0.07	0.20	0.18	0.34	0.19	0.12	0.19	0.50
CV	0.66	0.54	0.29	1.22	0.32	0.69	0.36	0.31	0.25	0.58	0.75	0.67	0.46	0.72	0.56
CAGR	-17.49	-3.99	-2.70	5.33	4.71	-3.35	4.28	-3.00	-4.15	-7.53	-9.38	-6.43	-5.48	-11.23	-0.58
AAGR	-14.99	11.37	-0.24	60.87	13.58	7.82	19.68	-1.62	-3.00	-2.21	-5.47	-3.83	2.93	-9.24	5.92

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