

A STUDY ON INTER-FIRM COMPARISON OF LIQUIDITY AND PROFITABILITY PERFORMANCE OF SELECTED PHARMACEUTICAL COMPANIES IN INDIA

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Abstract

India supplies generic drugs globally and is the largest provider of drugs. It supplies over 50% of global demand of vaccines, 25% of all kinds of medicine in UK and 40% of generic demand in US. In 2018 the Pharmaceutical industry was valued \$36.7 billion. The market is expected to expand at a CAGR of 22.4% over 2015–20 to reach \$ 55 bn. Pharmaceutical exports in India stood at US\$19.4 billion in FY19 as against US\$ 17.27billion in FY18. Inter firm comparison is a technique by which the voluntary exchange of information on costs, performance, efficiency, prices and profits of undertakings in the similar industries can be studied and oriented for better utilisation of resources leading to Improved productivity and profitability. There are hundreds of pharmaceutical companies in India so a comparative study of their liquidity and profitability is always needed. Present study is an effort to give an insight into liquidity and profitability measures of selected pharmaceutical companies in India. Top five pharmaceutical companies in India have been selected for study based on the size of their current market capitalization including Sun Pharmaceutical, Dr. Reddy's Laboratories, Aurobindo Pharma, Divis Laboratories, Cipla and Lupin. Further in order to draw a conclusion, liquidity and profitability ratios of these companies has been analyzed and ranked on the basis of their composite performance during the period of study i.e. FY 2006-07 to FY 2018-19.

Keywords: Pharmaceutical Sector, Inter-firm Comparison, Liquidity, Profitability

1. Introduction:

Inter firm comparison is a tool used by management to compare its operating performance and to evaluate its financial result. Two or more similar business units can be compared by inter firm comparison with objective to find out competitive position and thus by improving productivity and profitability of those units. Competitive strength is the key for any business unit to survive and grow. The competitive strength is based on the financial position and solvency of the company. Some ratios are calculated to find out the financial position and solvency. The strength and weakness of other similar business units are basic factors influencing a business unit to get success. So, inter firm comparison is required.

A business unit has to identify its strength in various departments and divisions before competing with other similar business units. India has a prominent place in pharmaceutical industry and is rapidly growing in global industry. It has 20% of global share in terms of volume and 50% of global share for vaccines. India occupies 3rd position globally for production in terms of volume and 13th position by value. Over 3000 pharma companies with over 10500 manufacturing units work in India to produce over 10% of global share by volume and 1.5% by value. The domestic pharmaceuticals market turnover reached US\$ 19.14 billion in 2019, up 10.83% from 2018. India plays an important role in global pharmaceutical sector. It has the largest manpower of scientists and engineers who can steer the industry to higher levels. In this context, there is a need of intra-firm comparison between pharmaceutical companies to evaluate the performance to improve the efficiency of the industry by highlighting the weakness and strengths.

Liquidity and Profitability management is of crucial importance in financial management decision. The most favorable fiscal performance could be achieved by a company that can trade off between profitability and liquidity performance indicators. The technique of inter firm comparison can a result in finding the critical path of the borrower's credit proposal to identify the degree of risk inherent in it and which may alert the borrower to improve productivity and profitability. In this connection

researcher is interested in analyzing liquidity and profitability of pharma companies as the pharma industry is one of the important and fastest growing sector in Indian economy. The purpose of this study is two-fold: first, to find how the selected firms in Indian Pharma industry have performed comparatively, and the strengths and weakness associated with it. Secondly, to illustrate the application of the tool of inter- firm comparison, and demonstrate its utility in improving financial performance of a firm. Some studies on inter-firm comparison in different industries in India have been conducted earlier. Useful though these studies are, they lack in cause and effect approach of ratios and scientific merit rating of firms.

2. Indian Pharmaceutical Sector: Overview

The pharmaceutical sector in India was valued at US\$ 36.7 billion in 2018. Domestic Pharmaceutical market in India has reached a turnover of 1,29,015 (US\$18.12 bn) in 2018 as against 1,16,389 (US\$ 17.87 bn) in 2017 with a growth rate of 9.4%. The Indian pharmaceuticals market stood at Rs 1.39 lakh crore (US\$ 19.89 billion) for the year ending November 2019 with Lupin, Mankind Pharma, Intas Pharmaceuticals and Alkem Laboratories leading the growth. Pharma companies in India have received a total of 415 product approvals in 2018 and 73 tentative approvals. Affordable medicines under the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) have led to savings of Rs 1,000 crore (US\$ 143.08 million) for Indian citizens in FY19. Based on moving annual turnover, Anti-Infectives (13.6 per cent), Cardiac (12.4 per cent), Gastro Intestinal (11.5 per cent) had the biggest market share in the Indian pharma market in 2018. More than 200 countries in the world import drugs from India with US as major importer. Over 20% of global exports are from India in terms of volume making it the largest provider of generic drug. It is expected to expand more in the coming years. Major pharmaceutical products which are being exported from India are drug formulations, bulk drugs, biologicals, intermediates, Aush & herbal products and surgical. With this India in FY19 reached US \$ 19.14 billion and up to November 2019 reached US \$10.8 billion.

The exports are expected to reach US\$ 20 billion by 2020. In FY18, 31 per cent of these exports from India went to the US. Healthcare sector witnessed private equity investment of US\$ 1.1 billion with 27 deals in first half of 2019. Medical devices industry in India has been growing 15.2 per cent annually and was valued at US\$ 5.2 billion in 2018 and expected to grow US\$ 8.16 billion by 2020 and reach US\$ 25 billion by 2025. The government's Department of Pharmaceuticals aims to make India a major hub for end to end drug discovery in its "Pharma Vision 2020". The sector has received cumulative FDI worth US\$16.27 billion between April 2000 and September 2019. Under Budget 2019-20, total allocation to the Ministry of Health and Family Welfare is Rs 62,599 crore (US\$ 8.96 billion). Rs 6,400 crore (US\$ 915 million) has been allocated to health insurance scheme Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (AB-PMJAY). As per Union Budget 2019-20, Rs 1,900 crore (US\$ 0.27 billion) have been set aside for research of the total amount and Rs. 62,659 crore (US\$ 8.96 billion) allocated for Ministry of Health and Family Welfare. Union Cabinet approved for extension/renewal of PPP (Pharmaceuticals Purchase Policy) in November 2019 with the same conditions and added an additional product namely AHD (Alcoholic Hand Disinfectant) to list of existing 103 medicines until the final closure or strategic disinvestment of pharma.

As per Economic Survey 2018-19, government expenditure (as a percentage of GDP) increased to 1.5 per cent in 2018-19 from 1.2 per cent in 2014-15 for health. Indian pharmaceutical sector is expected to grow at a CAGR of 22.4 per cent and medical devices market is expected to grow to US\$ 55 billion by 2020. FDI increased to 74 per cent in existing pharmaceutical companies and 100 per cent for new projects.

Growth in domestic sales would depend on ability of the company to line up their product portfolio for chronic diseases like cardiovascular, anti-diabetes, anti-depressants and anti- cancers that are on the rise. The Govt. of India has taken many steps to reduce the expenditure of health care products. The focus is on speedy introduction of generic drugs which will benefit Indian pharmaceutical companies. The preventive vaccines, life saving drugs and thrust on rural health programmes also augurs well for Indian pharma companies.

3. Literature Review

Chakraborty (2008)⁵, in the study on "Working Capital and Profitability: An Empirical Analysis" evaluated the relationship between working capital and profitability of Indian pharmaceutical companies. He pointed out that working capital is not a factor of improving profitability and there may be a negative relationship between them. A study conducted by Karamjeet and Firew (2011)⁸ on 449 Indian manufacturing firms to assess working capital adequacy and how it impacts on profitability of firms and found that there is significant difference in relative solvency level of firms and firms with adequate working capital. In a study by Bhunia and Brahma, (2011)⁴ to examine and evaluate the affect of liquidity management on the profitability and financial position in the pvt sector steel industry in India. Rohit and Vipin (2012)³ investigated on

determinants of corporate liquidity in India for a sample of 100 firms in Indian market over the period 1999-2008. It was found that size of firm has no impact on liquidity.

A study on Indian cement companies by Sandhar et. al (2013)¹⁰ between profitability and liquidity using regression analysis revealed that current ratio and liquid ratio are negatively associated with return on assets (ROA), return on investment (ROI) and cash turnover ratio. Mohmad & Dr. Syed (2016)⁹ analyzed the liquidity and profitability of selected companies and more specifically it studied the comparison between the liquidity and profitability performance of selected companies. There is significant difference between the performances of pharmaceutical companies on the basis of Quick Ratio. The performance of Cipla is better than that of Dr. Reddy’s labs in terms of profitability. Ashok Kumar Panigrahi (2017)² conducted a study on Liquidity Analysis of Selected Pharmaceutical Companies: A Comparative Study over the period 2012-2016 and concluded that liquidity ratio of Ajanta Pharma is better as compared to others. For improving performance other selected pharmaceutical companies need to have sound liquidity position. Companies should always maintain the ideal current and liquid ratio which is not sufficient in the case of the selected companies he has studied.

Abhinna Srivastava (2017)¹ in his article “Diagnosing Inter Firm Profitability of Pharmaceutical Industry: An Empirical Analysis for India” have been selected top five pharma companies based on their market capitalization and concluded that Indian pharmaceutical companies are doing well on account of profitability measures; Lupin is far ahead of its competitors whereas Sun Pharma emerged as the least performer during the study period. Dr.Bhavik U.Swadia (2018)⁷ in A Comparative Study of “Profitability of Selected Pharma Companies of India” analyzed the profitability of the selected pharmaceutical companies of India and to study profitability of various pharmaceutical companies. The study was conducted over a period of 10years that is from 2007-08 to 2016-17. This study shows that pharmaceutical companies in the year 2008 had very good profitability and in the year 2015 showed very less profitability. Ravindra et. al., (2020)⁶ in their article “An Impact Assessment of Working Capital Management on Profitability of Telecom Industry Firms in India” concluded that, the other objective of WCM is to support the smooth functioning of business operations by creating prominent trade between liquidity, profitability and risk. Firms can attain optimal management of working capital by making the trade-off between profitability and liquidity.

4. Research Objectives

- 1) To evaluate the performance of leading pharmaceutical companies in India in respect of their liquidity and profitability.
- 2) To make to a comparative analysis of the performance of these companies over a span of thirteen years (intra- firm analysis) based on key liquidity and profitability ratio; and
- 3) To give an ultimate ranking to these companies on the basis of their liquidity and profitability.

5. Research Methodology

5.1 Sample Selection:

For the purpose of study a list of top six pharmaceutical companies has been categorized on the basis of their market capitalization as on 31st March 2019. Table-1 exhibits top six Pharma companies in BSE and their market capitalization.

Table 1: Top Pharmaceutical Companies in India as on 31st March 2019

in Crores

Sl. No.	Name of the company	Market Cap.
1.	Sun Pharmaceutical Industries Limited (SPIL)	115104.41
2.	Dr. Reddy’s Laboratories (DRL)	45999.05
3.	Aurobindo Pharma Limited (APL)	45959.95
4.	Divis Laboratories Limited (DLL)	45201.78
5.	Cipla Limited (CL)	42744.56
6.	Lupin Limited (LL)	33381.86

Source: Author’s compilation based on BSE data

5.2 Methodology:

For the purpose of study data so obtained was analyzed by using ratio analysis of favorite liquidity measures like current ratio, liquid ratio and profitability measures like Operating Profit Margin, Net profit Margin, Return on Equity, Return on Capital Employed, Return on Assets and Earning per share. An ultimate ranking was given to each company on individual performance at each liquidity and profitability ratio.

5.3 Period of Data Coverage:

Thirteen years of financial statements i.e. Financial Year 2006-07 to Financial Year 2018-19 will be analyzed for the pharmaceutical companies taken under the study.

5.4 Scope of the Study:

Present study encompasses only top six pharmaceutical companies; Sun Pharmaceutical, Dr. Reddy's Laboratories, Aurobindo Pharma, Divis Laboratories, Cipla Limited and Lupin Limited based on their current market capitalization. This paper concludes on a dual parameter i.e. liquidity and profitability measures.

5.5 Sources of Data

The present study is based on secondary data, compiled from annual reports of these companies as published on their official website. Apart from it relevant data have been taken from the site of Indian stock exchanges; BSE, NSE, financial sites like Money control and Google finance. Various financial journals, magazines and report have also been used for the present study. Further data have been scrutinized with the help of MS word, Excel etc.

5.6 Analysis of Data

Editing, classification and tabulation of financial data collection from the above mentioned source have been done as per the requirement of the study. For analyzing the data simple statistical tools such as ratios, mean and ANOVA test have been used.

5.7 Hypothesis:

Null Hypothesis (H_0):

There is significance difference in performance among selected Pharmaceutical companies with respect to liquidity and profitability position

Alternative Hypothesis (H_a):

There is no significance difference in performance among selected pharmaceutical companies with respect to liquidity and profitability position

6. Brief Profile of Selected Pharma Companies for the Study

6.1 Sun Pharmaceutical Industries Limited (SPIL)

Sun Pharma is the fifth largest global specialty generic company and the largest pharmaceutical company in India. It has capabilities across dosage forms like injectables, sprays, ointments, creams, liquids, tablets and capsules. It also produces specialty APIs. In FY19, US formulations contributed the most to company's sales with 37 per cent, followed by India branded formulations at 26 per cent. For the year ending March 2019 Sun Pharmaceutical Industries has declared an equity dividend of 275.00% amounting to ` 2.75 per share. At the current share price of ` 454.45 this results in a dividend yield of 0.61%. The company has a good track record in payment of dividend for the last 5 years.

6.2 Dr. Reddy's Laboratories (DRL)

Dr Reddy's is an Active Pharmaceutical Ingredients (API) manufacturer started in 1984, to produce high-quality APIs for the Indian market. In 1987, the company started its formulations operations and, after becoming a force to reckon with in the Indian formulations market, went international in 1991. Dr Reddy's today is more than a 200-million dollar venture with presence in almost all major therapeutic areas. The company is committed to providing affordable and innovative medicines for healthier lives. Major markets for Dr Reddy's include India, USA, Russia-CIS and Europe, apart from other select geographies within emerging markets. Recently, Dr Reddy's deepened its focus into the rural markets in India to ensure the expansion of its reach. In this initiative, the company collaborated with its CSR wing, Dr Reddy's Foundation to reach the millions who are still away from effective treatment and availability of the right medicines.

6.3 Aurobindo Pharma Limited (APL)

Aurobindo Pharma was founded in 1986. The company commenced its operations in 1988-89 with a single unit that manufactured semi-synthetic penicillin (SSP) at Pondicherry. The company became a public company in 1992 and listed its shares in the Indian stock exchanges in 1995. The company has nine units for APIs/intermediates and seven units for formulations, which are designed to meet the requirements of both advanced as well as emerging market opportunities. Aurobindo Pharma exports to over 125 countries across the globe with more than 70 per cent of its revenues derived out of international operations. The company makes use of in-house research and development (R&D) for rapid filing of patents,

drug master files (DMFs), abbreviated new drug applications (ANDAs) and formulation dossiers across the world. It is among the largest filers of DMFs and ANDAs from India.

6.4 Divi’s Laboratories Limited (DLL)

Divi’s has been established in 1990 with a vision to creating value for all stakeholders by manufacturing high quality Generic APIs, Custom synthesis of APIs & Intermediates along with Nutraceutical Ingredients to the Global Pharmaceutical & Nutraceutical industry through sustainable leadership in chemistry. Divi’s is the leading manufacturer of APIs (Active pharmaceutical ingredients), Intermediates and Registered starting materials offering high quality products with the highest level of compliance and integrity to over 95 countries. Divi’s recently reached the milestone of being one among the top 3 API manufacturers in the world and one among the top API companies in Hyderabad. Divis is a Public limited company listed on the Indian stock exchange with revenue of INR 5036 crores for the year 2018-19.

6.5 Cipla Limited (CL)

Cipla is a leading pharmaceutical from India with presence across the world. It was established in 1935 as Chemical Industrial & Pharmaceutical Laboratories Ltd and changed to its current name in 1984. The company has a vast portfolio with more than 1,500 products in the market. The company’s business is divided into three strategic units - Active Pharmaceutical Ingredients (API), Respiratory and Cipla Global Access. Its largest market is India which contributed 39 per cent to its revenues in FY18, followed by Africa and North America with contribution of 22 per cent and 17 per cent, respectively. In FY19, total revenue of the company reached Rs 16,362 crore (US\$ 2.36 billion) and stood at Rs 12,755.80 crore (US\$ 1.83 billion) in 9MFY20.

6.6 Lupin Limited (LL)

Lupin Ltd is a leading pharmaceutical company from India and is amongst the top 10 generic companies in the world. It started its business in 1968 and over the years has become one of the largest pharmaceutical companies in India and the world. Its businesses include formulations, Active Pharmaceutical Ingredients (API), drug delivery systems and biotechnology. Its largest market is the North American region which contributed 38 per cent of its revenues in FY18, followed by India with 26 per cent and Asia-Pacific (APAC) with 17 per cent. In FY19, its total sales reached Rs 16,369.4 crore (US\$ 2.34 billion) and in H1FY20 reached Rs 8,652.7 crore (US\$ 1.24 billion).

7. Inter-Firm Comparison of Liquidity and Profitability Performance of Selected Pharmaceutical Companies

This part presenting the result from data analysis. This is separate into two categories. At first, briefly examination of the performance of liquidity position of the pharmaceutical companies. Second, the study demonstrates the performance of profitably of those companies.

7.1 Liquidity Performance

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. According to Shim and Siegel (2000) accounting liquidity is the company’s capacity to liquidate maturing short-term debt (within one year). Maintaining adequate liquidity is much more than a corporate goal and is a condition without which it could not reach the continuity of a business. In order to study the liquidity position of selected pharma companies, the researcher calculated the liquid ratios which are depicted in the following tables from the period of 2006-07 to 2018-19.

Table 1: Current Ratio of major Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CURRENT RATIO	SPIL	8.06	5.76	4.86	4.2	4.3	3.93	3.76	3.12	1.78	2.28	1.84	1.59	1.79
	DRL	2.6	1.86	1.68	1.48	1.14	1.52	1.52	1.78	1.74	1.86	1.15	1.52	1.88
	APL	1.95	1.72	1.4	1.3	1.2	1.12	1.2	1.33	1.35	1.31	1.39	1.41	1.28
	DLL	2.25	2.66	3.6	3.02	3.76	3.16	3.36	3.62	3.57	5.83	6.08	6.97	5.49
	CL	2.99	2.96	1.95	3.6	2.62	3.51	3.03	2.2	1.95	1.14	2.61	2.82	3.29
	LL	1.92	1.56	1.21	1.39	1.45	1.39	1.71	2.32	2.1	1.95	1.95	2.4	2.26

Source: Author’s compilation based on annual reports.

Table 2: Liquid Ratio of major Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
LIQUID RATIO	SPIL	6.27	4.66	3.75	2.99	3.46	3.13	2.94	2.6	1.43	1.79	1.46	1.25	1.34
	DRL	2.08	1.19	1.11	0.96	0.76	1.1	1.13	1.37	1.36	1.46	0.81	1.1	1.31
	APL	1.35	1.06	0.86	0.73	0.67	0.59	0.64	0.77	0.76	0.8	0.74	0.73	0.67
	DLL	1.12	1.33	1.62	1.15	2.36	1.94	1.85	2.14	2.08	3.5	4.08	4.89	3.4
	CL	1.96	2.07	1.33	2.35	1.49	2.23	1.98	1.08	0.98	0.65	1.58	1.77	2.24
	LL	1.35	0.96	0.72	0.9	0.91	0.83	1.06	1.51	1.43	1.31	1.36	1.68	1.63

Source: Author’s compilation based on annual reports.

Table 3: Liquidity performance (Ratios)[#] of major Pharmaceutical Companies in India

Liquidity Measure	SPIL	DRL	APL	DLL	CL	LL
Current Ratio	3.64	1.67	1.38	4.11	2.67	1.82
Liquid Ratio	2.85	1.21	0.80	2.42	1.67	1.20

#Average of thirteen years; FY 2006-07 to FY 2018-19

Source: Author’s compilation based on annual reports.

HYPOTHESIS TESTING

Null Hypothesis (H₀):

There is significance difference in performance among Six Pharmaceutical companies with respect to liquidity position

Alternative Hypothesis (H_a):

There is no significance difference in performance among Six pharmaceutical companies with respect to liquidity position

Two-Way ANOVA Analysis

The analysis of two-way ANOVA was done to evaluate the liquidity position of the firms. For which researcher has taken average of current and liquid ratios of selected units for a period of 13 years from 2006-07 to 2018-19. Beginning with the ANOVA analysis for the whole period, it was used to find that significant difference of all the factor effects encompassing row (ratios) effect and column (companies) effect.

Summary	Count	Sum	Average	Variance		
Current Ratio	6	15.29	2.548333	1.262457		
Liquid Ratio	6	10.15	1.691667	0.628297		
SPIL	2	6.49	3.245	0.31205		
DRL	2	2.88	1.44	0.1058		
APL	2	2.18	1.09	0.1682		
DLL	2	6.53	3.265	1.42805		
CL	2	4.34	2.17	0.5		
LL	2	3.02	1.51	0.1922		
ANOVA						
Source of	SS	df	MS	F	P-value	F crit
Rows	2.201633	1	2.201633	21.81275	0.004981	6.607891
Columns	8.9491	5	1.78982	17.73269	0.003374	5.050329
Error	0.504667	5	0.100933			
Total	11.6554	11				

Result: Rejected Null Hypothesis (H_0)

The results of table 3 revealed that Divi’s Laboratories Limited showed dominance in average current ratio for the period of 2006-07 to 2018-19 with 4.11 over the pharma companies selected under the study. SPIL ranked 2nd among selected units with 3.64 followed by Cipla Limited with 2.67 average current ratio. The results further revealed that the average current ratio of DLL, SPIL and CL were more than the ideal current ratio i.e. 2. Whereas the average current ratio of DRL, LL and APL were 1.67, 1.82 and 1.38 respectively which are less than the ideal ratio. The liquid ratio of all the firms except APL is more than the ideal quick ratio i.e.1 indicates a satisfactory liquidity position of the firms during the study period.

An attempt made to find out significance results among all the selected units in terms of overall liquidity position by applying ANOVA test. It was found that the “p” value (0.004) for rows is less than the significance level of 0.05 and also the “p” value (0.003) for columns is less than the significance level of 0.05. Therefore the null hypothesis formulated can be rejected and alternative hypothesis accepted. Thus, it is concluding that there is no significance difference in performance among six pharmaceutical companies with respect to liquidity position.

7.2. Profitability Performance of Selected Pharmaceutical Companies

Profitability can be defined as the final measure of economic success achieved by a company in relation to the capital invested in it. This economic success is determined by the magnitude of the net profit accounting (Pimentel et al, 2005). Profitability may be measured in many different ways Lazaridis and Tryfonidis (2006) found statistically significant relationship between profitability, measured through operating profit, net profit, return on equity, return on capital employed, return on assets and earnings per share along with the cash conversion cycle and its components.

In order to study the profitability position of selected pharma companies, the researcher calculated the profitability ratios which are depicted in the following table 4 to table 8 for the period of 2006-07 to 2018-19.

Table 4: Operating Profit Ratio of major Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
OPERATING PROFIT MARGIN (%)	SPIL	43.5	50.7	48.5	40.2	40.4	45.8	46.7	46.9	30.6	30.9	34.2	24.4	25.2
	DRL	27.1	20.9	0.43	21.7	21.4	26.1	24.1	25.6	25.0	24.9	18.6	17.5	22.7
	APL	16.0	17.3	9.15	26.5	23.6	12.6	15.1	26.6	21.9	24.5	23.8	23.5	20.9
	DLL	34.1	40.7	42.2	46.4	40.0	40.0	40.0	42.8	38.8	40.1	37.4	35.3	40.9
	CL	25.7	23.2	20.6	25.0	23.1	25.6	29.2	23.7	20.5	19.4	18.7	21	21.8
	LL	23.9	23.4	19.3	20.6	20.6	20.5	23.8	27.6	30.2	27.3	26.4	20.8	19.4

Source: Author’s compilation based on annual reports.

Table 5: Net Profit Ratio of major Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NET PROFIT MARGIN (%)	SPIL	39.4	46.1	44.1	34.5	33.2	37.9	30.7	24.1	20	19.8	25.0	9.97	11.0
	DRL	14.7	8.77	-	5.02	13.3	13.2	12.8	14.6	15.5	13.5	8.85	6.38	12.3
	APL	9.56	9.81	3.25	15.6	12.8	-	4.97	14.4	12.9	14.6	15.4	14.6	12.0
	DLL	25.3	33.5	35.2	36.0	32.6	28.6	28.0	30.5	27.3	29.8	26.0	22.5	27.3
	CL	18.7	16.6	14.7	19.2	15.2	16.2	18.7	14.0	11.0	10.1	7.24	9.36	9.22
	LL	14.9	14.8	13.1	14.4	15.1	12.5	13.9	16.5	19.1	16.0	14.7	1.61	3.65

Source: Author’s compilation based on annual reports.

Table 6: Return on Equity Ratio of major Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RETURN ON EQUITY (%)	SPIL	28.2	29.7	25.9	17.2	19.1	21.7	19.9	16.9	17.7	13.7	19	5.67	6.43
	DRL	24.1	9.74	-	9.3	24.7	26.0	23.9	24.9	23.7	16.9	10.5	7.53	13.9
	APL	22.6	21.2	8.07	30.8	23.0	-	11.2	31.2	30.5	27.7	24.5	20.7	17.0
	DLL	34.7	40.3	33.5	22.4	23.8	25.0	24.0	26.0	24.3	26.2	19.7	14.8	19.4
	CL	20.6	18.7	17.7	18.3	14.8	14.9	17.1	13.8	10.9	11.8	8.02	9.91	10.1
	LL	34.7	31.8	35.2	26.5	26.2	21.6	25.2	26.4	27.0	20.2	18.9	1.85	4.47

Source: Author’s compilation based on annual reports.

Table 7: Return on Capital Employed Ratio of Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RETURN ON CAPITAL EMPLOYED (%)	SPIL	19.5	27.3	24.7	16.4	17.0	19.1	16.8	13.4	13.8	18.3	21.7	11.1	11.7
	DRL	15.3	7.19	-	7.36	21	19.3	19.5	19.1	19.8	15.1	12.0	9.13	14.3
	APL	8.33	9.78	3.87	19.6	18.1	-	7.64	22.2	23.2	25.0	32.3	26.6	23.8
	DLL	28.2	35.7	31.0	21.2	23.0	24.2	23.2	25.0	23.4	25.6	25.4	20.1	25.8
	CL	19.2	15.6	16.8	17.7	14.3	14.4	16.4	12.8	9.98	14.4	7.82	9.78	11.1
	LL	20.1	19.7	22.6	21.8	22.0	17.8	22.2	24.2	25.5	19.2	17.9	10.4	9.9

Source: Author’s compilation based on annual reports.

Table 8: Return on Assets Ratio of Pharmaceutical Companies in India

Ratio	Company Name	As on 31 st March												
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RETURN ON ASSETS (%)	SPIL	17.8	24.2	22.1	14.8	14.6	16.1	14.2	10.6	9.25	8.18	11.3	3.36	4.12
	DRL	12.5	5.67	-	4.77	11.1	11.4	11.3	12.2	12.5	10.4	5.92	4.19	8.67
	APL	5.72	6.56	2.37	11.7	9.59	-	4.03	12.3	12.2	12.7	14.1	11.4	8.93
	DLL	21.9	29.3	26.7	18.2	18.8	19.3	19.1	20.8	19.3	22.9	17.2	12.9	16.8
	CL	15.1	12.2	11.2	14.8	11.5	12.2	13.2	10.3	7.51	6.43	4.78	6.17	6.37
	LL	13.3	12.0	12.0	13.3	14.0	10.9	14.7	17.9	18.2	9.99	9.61	0.95	2.2

Source: Author’s compilation based on annual reports.

Keeping in view of simplifying the data of thirteen years, the average ratios of all profitability measures in respect to selected pharmaceutical companies were illustrated in Table-9.

Table 9: Profitability performance (Ratios)[#] of major Pharmaceutical Companies in India

Profitability Measure	SPIL	DRL	APL	DLL	CL	LL
Operating Profit Margin	39.12	21.26	20.16	39.94	22.92	23.41
Net Profit Margin (%)	28.93	10.46	10.58	29.47	13.89	13.13
Return on Equity (%)	18.59	14.58	20.28	25.75	14.40	23.12
Return on Capital Employed	17.8	12.41	16.7	25.57	13.91	19.53
Return on Assets (%)	13.16	7.57	8.45	20.29	10.15	11.51

#Average of thirteen years; FY 2006-07 to FY 2018-19

Source; Author’s compilation

HYPOTHESIS TESTING

Null Hypothesis (H₀):

There is significance difference in performance among Six Pharmaceutical companies with respect to profitability position

Alternative Hypothesis (H_a):

There is no significance difference in performance among six pharmaceutical companies with respect to profitability position

Two-Way ANOVA Analysis

The analysis of two-way ANOVA was done to evaluate the profitability position of the firms. For which researcher has taken average of six ratios from the year 2006-07 to 2018-19 of selected companies of the study. Beginning with the ANOVA analysis for the whole period, it was used to find that significant difference of all the factor effects encompassing row (ratios) effect and column (companies) effect.

SUMMARY	Count	Sum	Average	Variance		
Operating Profit Margin (%)	6	166.81	27.80167	83.94994		
Net Profit Margin (%)	6	106.46	17.74333	80.62951		
Return on Equity (%)	6	116.72	19.45333	20.76135		
Return on Capital Employed (%)	6	105.92	17.65333	21.72619		
Return on Assets (%)	6	71.13	11.855	21.16671		
SPIL	5	117.6	23.52	109.2453		
DRL	5	66.28	13.256	26.67023		
APL	5	76.17	15.234	29.88978		
DLL	5	141.02	28.204	53.73198		
CL	5	75.27	15.054	22.25363		
LL	5	90.7	18.14	30.8906		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	792.4195	4	198.1049	13.28197	0.001	2.866081
Columns	842.8621	5	168.5724	11.30197	0.002	2.71089
Error	298.3064	20	14.91532			
Total	1933.588	29				

Result: Rejected Null Hypothesis (H_0)

From the results of Table 9 it was found that the Divi's Laboratories Limited (DLL) has greater results than other pharma companies in all the profitability parameters viz., OPM, NPM, ROE, ROCE and ROA selected for this study at average of 39.94%, 29.47%, 25.75%, 25.57%, 20.29% followed by SPIL in terms of OPM, NPM, ROCE, ROA at average of 39.12%, 28.93%, 18.59%,

13.16% and APL in terms of ROE 20.28% on average basis from 2006-07 to 2018-19. It is further observed that the pharmaceutical companies selected for the study are not equally performed in all aspects during study period. So, null hypothesis is accepted and it is concluded that the difference is seen between the selected companies in the profitability measures selected in this study.

The analysis of two-way ANOVA shows that the "p" value (0.001) for rows is less than the significance level of 0.05 and also the "p" value (0.002) for columns is less than the significance level of 0.05. Therefore the null hypothesis formulated can be rejected. Thus, it is concluded that there is no significance difference in performance among six pharmaceutical companies with respect to profitability position.

8. Conclusion:

Financial Management has great importance in making management decisions. The financial soundness of a company can be achieved maintaining liquidity and profitability of the company. The purpose of this study is to find out the liquidity and profitability position of and know the significance of them. Descriptive statistics discloses that performance of the selected unit in terms of liquidity and profitability position is very satisfactory. It is concluded that all the pharmaceutical companies selected for the study have no significance difference in maintaining liquidity position that means more or less all companies maintaining liquidity position equally. But coming to profitability position there is a significance difference among all six companies. Out of which Divi's Laboratories Limited (DLL) performing better than remaining companies in all most all aspects.

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