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A Comparative Study of Financial Analysis of Pharmaceutical Industry

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ABSTRACT

This research aims to evaluate the financial performance of India's pharmaceutical sector by examining ten prominent companies: Cipla Ltd., Dr. Reddy's Laboratories, Sun Pharmaceutical Industries, Lupin Ltd., Divi's Laboratories, Aurobindo Pharma Ltd., Cadila Healthcare (Zydus Lifesciences), Biocon Ltd., and Alkem Laboratories Ltd.,covering the financial years 2020to 2024.

To achieve the research objectives, key profitability indicators such as Return on Equity (ROE) and Return on Assets (ROA) were computed using the DuPont Analysis framework. The results were presented in tabular form to highlight year-wise trends and fluctuations. DuPont analysis serves as an effective tool for assessing both operational efficiency and financial performance, providing insights into how efficiently companies convert their assets and equity into profits.

Financial performance analysis involves interpreting relationships between components of the balance sheet, income statement, and cash flow statement, to determine a company's financial strengths and areas of concern. This strategic analysis helps stakeholders make informed decisions about investment, funding, and long-term sustainability.

In recent years, the Indian pharmaceutical industry has shown robust growth, driven by factors such as increasing demand for generic drugs, expanding global exports, the government's Production-Linked Incentive (PLI) scheme, and rising healthcare awareness. Additionally, the post-pandemic era has accelerated digital transformation, R&D investments, and focus on domestic manufacturing of Active Pharmaceutical Ingredients (APIs).

This study provides a comparative view of the profitability performance of selected Indian pharma companies and examines the correlation among various profitability ratios. It reflects the industry's ongoing evolution and its strategic role in strengthening India's position in the global pharmaceutical landscape.

1. Introduction

India's pharmaceutical industry is a vibrant and rapidly growing sector, known for its cost efficiency and innovation. It plays a crucial role in global healthcare by supplying affordable generic medicines to millions worldwide. Ranked third globally by volume, the industry is a major contributor to India's economy and a key player in international exports.

Although R&D investment in India remains lower compared to developed nations, the sector benefits from a large, skilled workforce and a growing base of young professionals, including a substantial number of medical graduates. This presents significant potential for advancing pharmaceutical innovation in the future.

The industry demonstrated its resilience during the COVID-19 pandemic by maintaining uninterrupted production and ensuring the supply of essential medications. With increasing demand, especially in rural markets, there is considerable scope for expansion in the domestic generic drug segment

India is currently the largest global supplier of generic medicines, exporting to over 200 countries, and contributing more than 6% to the nation's total merchandise exports. The focus is now on strengthening export growth, supported by higher investments in research, innovation, and value-added formulations.

To achieve this, India is actively working to enhance regulatory standards and is strengthening partnerships with international bodies such as the International Council for Harmonisation (ICH), Pharmaceutical Inspection Co-operation Scheme (PIC/S), and the International Coalition of Medicines Regulatory Authorities (ICMRA). These efforts aim to boost global confidence in Indian pharmaceuticals and pave the way for greater access to regulated international markets.

1.1 Government Initiatives

The Indian government had a clear vision for the future of its pharmaceutical industry: "Pharma Vision 2020" aimed to make India a global leader in the entire medication manufacturing process. Several initiatives are underway to achieve this goal.

Firstly, the government is making it easier to do business in the industry. Approval times for new facilities are shorter, and there are plans to establish eight mini drug-testing labs to streamline import/export processes. Additionally, a venture capital fund of Rs.1,000 Crore is being set up to support startups in pharma research and development.

Secondly, the government is working to bring down healthcare costs. Faster approval for generic drugs, a focus on rural health programs, and initiatives to make essential medicines more affordable are all part of this strategy. These steps will not only benefit patients but also create a larger market for Indian pharmaceutical companies.

1.2 Statement of Problem

The problem statement in this research is to identify the pharmaceutical companies are stable or not during pre and post pandemic of COVID 19. The following are the statements that I will collect during my research:

- Whether the Pharma companies are in Debt or not?
- Performance of the Companies related to liquidity Ratios
- Performance of the Companies related to Asset Management Ratio and profitability
- Which companies is doing the best performance after Pandemic?

2. Literature Review

Liquidity and Profitability

- A study by Bhabatosh Banerjee (2019) found a positive relationship between liquidity and profitability for some industries in India, but a negative relationship for others.
- Gopinathan Thachappilly (2020) highlights the importance of liquidity even for profitable companies.
- Investors use liquidity ratios to assess a company's financial health (James Clausen, 2020).
- Factors Affecting Liquidity
- Government policy can significantly influence a company's liquidity (Sharma and Reddy, 2021).
- Financial Performance Analysis
- Studies by RBI Bulletin (2005), Pai et al. (2022), Vijayalakshmi and Srividya (2021), and Panigrahi (2019) analyse financial performance using various metrics.

Working Capital Management

- Working capital management can impact profitability (Singh and Pandey, 2021).
- Raheman and Nasr (2023) found a negative relationship between working capital management and profitability for Pakistani firms.

The Indian Pharmaceutical Industry

- Debasish Sur and Kaushik Chakraborty (2006) studied the financial performance of the Indian pharmaceutical industry.

- **Accounts Receivable**
- Diane White (2022) discusses the accounts receivable turnover ratio as a tool to measure receivables efficiency.

3.Methodology

3.1. Scope of Study

This study aims to identify factors influencing profitability in the pharmaceutical industry. Financial analysis will be used to assess the financial health of pharmaceutical companies in Bangalore. Data from the past 5 years (2020-2024) will be collected from company annual reports. The study will look at liquidity, solvency, and profitability ratios to understand the companies' financial performance and ability to meet obligations. This research differs from others by focusing on a wider range of respondents (generations X to Z) and using secondary data.

3.2. Research Methodology

The study's goal is to look at the profitability of a few pharmaceutical companies in India. The companies are being analyzed during a five-year period, from 2019 to 2023. To research the pharmaceutical sector, seven profit parameters were chosen for the study. These were the following:

1. Current Ratio
2. ROE
3. Debt-To-Equity Ratio
4. Net Profit Margin
5. Total Asset Turnover Ratio
6. Equity Multiplier

The necessary information was obtained from the websites of the National Stock Exchange of India, Money Control, and annual reports published on the websites of the companies. The statistical analysis was carried out using descriptive statistics and the ANOVA test, with a 5% level of significance.

3.3.Research Design

This research is based on a descriptive design, in which the researcher is exclusively concerned in explaining the scenario or case under their research investigation. It's a theory-based design process that involves collecting, interpreting, and presenting data. Descriptive research cannot be used to prove a causal relationship between two variables. To put it another way, descriptive research has a low internal validity criterion. Frequencies, averages, and other statistical data are calculated using the description. The study's research design is conclusive, as conclusive research tests the problem's hypothesis and draws definitive implementation results. Research instrument: -Both primary and secondary data have been collected thus for primary data the questionnaire has been used. Sampling technique: Simple random sampling, this type of sampling method includes population which is target at random. Sample type and size: The sample size of our study is 60 respondents as well as the prices of the individual pharmaceutical companies. The

technique used for collecting responses is convenience sampling. Sampling area: The geographical area covers Bangalore City and other states of India Data collection tool: The data was collected through questionnaire which was sent to my friend's relatives through mails and other online mediums.

3.4. Method of data collection and study variables

When investigating research, the relevant information must be retrieved from the respondents.

Yet, data may be easily available at times. The information gathered can be broadly categorized as follows:

Primary Data

It is information gathered by a researcher from primary sources through methods such as surveys, interviews, and experiments. Primary data is obtained for a specific reason or for a certain research endeavour, and it is made up of original information that is used to achieve theoriginal goal.

When the data needed for a study isn't found in the company's internal records or in a published source, it may be necessary to collect original data. The primary data for this study was gathered. by:

- Questionnaire
- Personal Interview

Secondary Data

It's the information obtained from other people's investigations, surveys, or trials. Secondary data was gathered from the organization's internal records, publications, and reports, among other sources. Secondary data for this study was gathered by:

- Direct Observation
- Research works
- Company Annual Reports
- Websites, internet blogs
- Books

4. Results

The following are the techniques used to analyze the collected data are as given below:

Descriptive analysis: It considers ratios and key performance indicators, as well as a set benchmark, to describe performance. It considers previous trends and how they might affect future performance. The questionnaire was distributed to customers of various friends, relatives, and some employees of Pharma companies to analyze the factors influencing their behavior toward investing in the Pharma industry as well as their products and services, as well as their behavioral patterns regarding factors such as window display, medicine discounts, and global impact.

Column Chart, Bar Chart: Both graphs show the numerical disparities between the categories. To reflect the changes, the column chart uses the height of the columns. In the case of a bar chart, the axes are interchangeable.

Pie-Chart: It's a metric for expressing how many different classes there are. It can only be used with a single data set. It can, however, be made multi- layered to represent distinct categories of data.

1. Current Ratio

Year	Torrent Pharma	Sun Pharma	Cipla Ltd.	Aurobindo Pharma Ltd.	Cadila Healthcare Ltd.
2020	2.09	0.6	2.19	1.45	1.52

2021	3.07	0.58	2.48	1.55	0.71
2022	1.22	0.76	2.91	1.56	1.27
2023	1.21	0.84	4	1.55	1.52
2024	1.13	1.07	3.45	1.77	1.39
Mean	1.744	0.77	3.006	1.576	1.282
Standard Deviation	0.75	0.17	0.65	0.10	0.300
Variance	0.56	0.032	0.42	0.011	0.090

As we can see that Cipla has a high Current Ratio i.e. 3.45 which indicate that company is able to meet its short-term obligations and don't have any kind of debt.

2. ROE

Year	Torrent Pharma	Sun Pharma	Cipla Ltd.	Aurobindo Pharma Ltd.	Cadila Healthcare Ltd.
2020	47.01	-4.99	12.2	23.69	32.46
2021	19.17	-0.1	7.61	20.23	10
2022	10.57	1.36	10.4	18.15	14.08
2023	14.86	3.57	11.96	13.47	17.33
2024	18.32	13.16	13.32	14.37	12.54
Mean	21.986	2.6	11.098	17.982	17.282
Standard Deviation	12.87	5.98	1.97	3.77	7.95
Variance	165.73	35.77	3.90	14.21	63.22

The return on equity (ROE) is a measure of a company's profitability and efficiency in generating profits. As we can see that Torrent Pharma have a high ROE that is mean of 21.98 which is a good sign for the company, but high ROE will not always remain positive.

3. Debt-Equity-Ratio

Year	Torrent Pharma	Sun Pharma	Cipla Ltd.	Aurobindo Pharma Ltd.	Cadila Healthcare Ltd.
2020	0.96	0.56	0.27	0.83	0.42
2021	0.9	0.61	0.21	0.54	0.66
2022	1.59	0.71	0.21	0.58	0.57
2023	1.39	0.65	0.16	0.59	0.59
2024	1.32	0.57	0.17	0.49	0.46

Mean	1.23	0.62	0.204	0.606	0.54
Standard Deviation	0.26	0.05	0.038	0.11	0.08
Variance	0.06	0.003	0.001	0.01	0.007

From the above companies we can say that Torrent Pharma has a high debt-toequity ratio which indicates that the company is getting more of is financing by borrowing money, which subjects the company to potential risk if debts levels are too high.

4. Net Profit Margin

Year	Torrent Pharma	Sun Pharma	Cipla Ltd.	Aurobindo Pharma Ltd.	Cadila Healthcare Ltd.
2020	32.04	-14.09	12.06	17.74	28.97
2021	18.59	-0.29	9.05	17.76	20.48
2022	11.34	3.39	12.89	1.65	18.77
2023	12.93	7.92	15.26	12.47	24.6
2024	15.21	25.62	18.31	14.11	22.25
Mean	18.022	4.51	13.514	12.746	23.014
Standard Deviation	7.42	12.86	75.8641	5.91	3.54
Variance	55.06	165.50	84.64	35.02	12.60

5. Total Assets Turnover Ratio

Year	Torrent Pharma	Sun Pharma	Cipla Ltd.	Aurobindo Pharma Ltd.	Cadila Healthcare Ltd.
2020	74.63	22.2	79.51	72.94	78.8
2021	57.04	22.68	68.99	73.77	29.24
2022	35.94	24.47	66.62	65.02	47.76
2023	47.91	27.31	67.18	67.57	44.16
2024	51.78	32.62	62.03	67.91	38.34
Mean	53.46	25.85	68.86	69.442	47.66
Standard Deviation	12.66	3.82	5.79	3.35	16.78
Variance	160.31	14.64	33.58	11.27	281.62

Year	Lupin Ltd.	Biocon Ltd.	Dr.Reddy's Lab Ltd.	Divi's Lab Ltd.	Alkem Lab Ltd.
2019	78.81	32.42	58.13	74.01	81.93
2020	70.74	34.64	59.09	64.79	79.14
2021	53.96	31.3	54.73	56.05	77.78
2022	57.67	45	65.39	60.69	78.35
2023	53.31	23.92	60.84	62.37	73.34
Mean	62.89	33.456	59.63	63.582	78.10
Standard Deviation	10.13	6.80	3.49	5.94	2.77
Variance	102.76	46.26	12.23	35.35	7.71

The asset turnover ratio, also known as the total asset turnover ratio, is a metric that assesses how efficiently a company uses its assets to generate revenue. The asset turnover ratio is calculated by dividing net sales by a company's total or average assets. When compared to competitors with a lower ratio, a company with a high asset turnover ratio performs more effectively. In this case from the above 10 pharmaceutical companies Alkem Lab Ltd. have a high asset turnover ratio which reflects that the company perform effectively. In Comparison to that low is Sun Pharma which need to high their Asset turnover ratios to perform effectively in the company.

5. Hypothesis Test

Ratio	F	Sig.	Ho	Remarks
Current Ratio	2.058	.022	Rejected	Significant Difference
ROE	5.996	.000	Rejected	Significant Difference
Net Profit Margin	1.581	.513	Accepted	No Significant Difference
Total Assets Turnover Ratio	3.314	.007	Rejected	Significant Difference
Debt-To-Equity Ratio	3.314	.007	Rejected	Significant Difference

The purpose of using the Anova Test is to see if the performance of all sample firms varies significantly over time. The findings of all Anova Tests are summarized in Table 3.1.8. Companies differ greatly in their performance across all five earning factors. The significance values for Current Ratio, ROE, Total Asset Turnover Ratio and Debt-To-Equity Ratio were all less than 0.05, hence null hypotheses were rejected. The significance value for net profit margin was found to be 0.513, which is significantly greater 32 than 0.05 and is within the acceptable range. In the case of net profit, this suggests that it is failed to reject the null hypothesis.

5. Summary and Discussion

5.1. Research outcome:

From the above study, the following interferences/findings were derived they are as follows: -

Cipla Ltd. bears the high liquidity which indicates that a company can easily pay its short-term debts, whereas low liquidity indicates that a company is on the verge of bankruptcy. The ability of a corporation to fulfill its debt obligations, or current. liabilities, without having to obtain external money or take out loans, is referred to as liquidity. Whereas Torrent Pharma has a low liquidity ratio.

- Alkem Lab Ltd. have a high ROE which indicates that a high return on investment (ROI)could indicate that a corporation is more successful at creating profit internally. It does not, however, properly depict the risk involved with that return. To earn a bigger net profit, a corporation may rely extensively on debt, hence increasing the ROE. Whereas
- Lupin Ltd bears low ROE which means that a company may be mismanaged and could be reinvesting earnings into unproductive assets.
- Divi's Ltd have a high Net profit Margin as compared to other 9 companies which means that accompany is more efficient at converting sales into actual profit. It assesses how efficiently a company operates. If a company has a net profit margin of 20%, it means that it keeps $0.20 for every $1 in sales revenue. In same way Lupin bears the low Net profit Margin.

- Total Asset Turnover Ratio is high in Alkem Ltd. and low in Sun Pharma. The greater a company's asset turnover ratio, the more efficient it is at generating revenue from its assets. In contrast, a low asset turnover ratio indicates that a company is not efficiently using its assets to generate sales.
- Majority of people are agreed that pharmaceutical industries boost the economy.
- Majority of respondents were male as compared to female who was likely invest in pharmaceutical companies.
- Sun Pharma export more in foreign countries as compared to others

5.2. Recommendations

Some recommendations based on the findings of selected pharmaceutical companies are given below:

- To hold a balanced liquidity position, Pharma companies should invest their extra liquid assets to increase production volume.
  - The expense ratio is an essential factor for all pharmaceutical companies. So, they Should prioritize reducing the expense ratio.
  - The study recommends that pharmaceutical companies expand their businesses to achieve an optimum size and enjoy economies of scale. An optimum size will ultimately strengthen financial performance.
  - To ensure maximum profitability, an appropriate cost accounting system should be setup in pharmaceutical companies.
  - Pharmaceutical companies should pay more attention to the volume of capital and leverage for better financial performance.
  - To enlarge the business and generate more revenue, Pharma companies should expand their sales.
  - Use the DuPont analysis as a guide for investing and determining which company has the best track record. Companies with low ratio numbers must typically enhance their performance and cut their operational costs in order to maintain their sustainability and attract investors.
  - Companies with high ratio values will be able to retain and improve the value of their performance in the future.
  - To create additional money, the company should develop appropriate policies and strategies to sell scrap and by products obtained during the manufacturing process.

5.3. Conclusion:

The financial health of a company is critical to its successful management. The analysis shows that the gross profit ratio, operating ratio, return on equity capital, and earnings per share all have a significant impact on the net profit ratio of the selected pharmaceutical companies during the study period. During the study period, however, the profitability of the selected pharmaceutical companies in India was satisfactory. There were a few ups and downs in profitability during the study period, but they had little impact on the company's operations. Only by investing more capital and increasing sales will the pharmaceutical industry be able to perform well.

The study period chosen for this research is for 5years and 10 companies quite difficult for the pharmaceutical sector and the Indian economy as a whole. As it was the also time when companies are facing pandemic. But most of the companies were most of the companies earn a high profit. The pharmaceutical industry is divided into two categories: It is, first and foremost, a protective sector, as well as one of the most essential necessities. Second, it entails a substantial investment in research and development, with no certainty of a profit. In this sense, the profitability of some companies, such as

Divi's, has not been encouraging. To solve these two concerns, six profitability parameters were established to address the pharmaceutical sector's profitability in an acceptable manner. Varied ratios, as expected, had different results. The Indian Pharma industry has achieved significant growth in both domestic and global markets during the past five decades. The Indian pharmaceutical sector has played a significant 51 role in improving healthcare and economic results in the country. For the industry, the pandemic has expedited several opportunities and problems. While the widening trust deficit with China creates an opportunity for India, other nations such as Vietnam and Malaysia are becoming more competitive. India also relies on China for two- thirds of its bulk medicine and drug intermediary imports. Hence overall Financial Health of the selected companies is good.

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