

ASSESSING THE FINANCIAL IMMUNITY: A PRE- AND POST-COVID COMPARATIVE ANALYSIS OF SUSTAINABLE GROWTH IN INDIAN PHARMACEUTICALS COMPANIES

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ABSTRACT

The Indian pharmaceutical industry has been critical in the time of the COVID-19 pandemic. Its financial performance in pre and post COVID-period can provide an indication of its sustainability and ability to survive periods of global crises. The paper sets out to compare and contrast the financial growth of 10 of the major pharmaceutical firms in India throughout two periods: pre-COVID (2015-2019) and post-COVID, based on five financial parameters; Sustainable Growth Rate (SGR), Net Profit Ratio (NPR), EBITDA Margin, Return on Capital Employed (ROCE), and Return on Net Worth (RONW). The study will focus on comparison between the earlier and later periods and find out using SPSS whether there is any difference between the two periods or not using t-test of paired samples and correlation analyzing. Hypothesis testing and descriptive statistics were also carried out in order to determine changes in financial growth, profit, and capital efficiency. The findings show that the t-test relationship in all five financial metrics is not statistically significant (all p-values > 0.05) in their difference between pre- and post-COVID. Although certain metrics such as SGR and RONW went down to some extent after the COVID, there were some increases in margins in others such as NPR and EBITDA. But the differences were non-statistically significant. Results of the correlation analysis revealed weak medium correlations, which is the indication of the limited similarity in the financial trends between the two periods at the firm level. The Indian pharmaceutical industry has proved to be financially durable as it was able to retain its performance during the pandemics. The existence of no serious changes emphasizes the flexibility of industry and the stability of its inner financial flows.

Keywords: Sustainable Growth rate, Net Profit ratio, Returns on capital Employed, EBITDA, Return on net worth.

INTRODUCTION

Indian pharmaceutical industry which has created a niche in the world pharmaceutical market is referred to as the pharmacy of the developing world. India is famous with its cost-effective production abilities and skills persistence combined with huge export network, wherein more than 60 percent of world vaccines are supplied and the region stands among the top five nations in terms of medicines produced quantity (IBEF, 2023). Throughout the last 10 years, the sector has contributed substantially to the improvement of global health outcomes, by reaching over 200 countries with affordable generic medicines, including very regulated markets like the United States or the European Union.

The Indian pharmaceutical industry despite this growth and image is a complex environment characterized with

strict adherence to regulations, patent issues, price controls, and the dynamism nature of international trade. Such factors are always requiring business agility, cash strength, and innovations in business operation. What is more, the threat of growing competition with other emerging economies low-cost manufacturers and the mounting expectations concerning the environmental and ethical sustainability have placed more pressure on Indian pharmaceutical companies.

The appearance of the COVID-19 pandemic in 2020 was the introduction of new problems into the industry. Even though the crisis first demonstrated weak spots in supply chains across the world, dependency on raw materials, and production capabilities, it brought into light the importance of Indian pharma in the health resilience of the world. The industry was leading in manufacturing and distribution of the necessary medicines, generic antivirals and subsequently vaccines. Nevertheless, this is also the time when supply chains have broken, input prices have risen, labour has been in short supply and government regulations have been slow in the processing and pressures have been placed on research and development.

It was a fundamental change which the pandemic had made to the operational environment of pharmaceutical companies. Abrupt change in demand, fluctuations in the prices of the raw materials, and logistical gigs demanded companies to rethink their cost structure and financial strategy. Whereas some companies took advantage of new opportunities, including higher demand of COVID products and services, other companies had to experience decreasing profitability, weak liquidity, and diminishing margins. Though promising, the post pandemic recoiled period has already brought up some new priorities, which are namely that of digitalization, local sourcing, regulatory compliance, and sustainable long term positively growing.

The precarious position of the Indian pharmaceutical firms amid this changing scenario makes it a necessity to review their financial well-being and stability. Profitability, operational efficiency, and capital management interactions have become one of the determinants of the long-term sustainability. Such analysis of the impact of outside disturbances (like COVID-19) on the indicators of financial performance can tell more about the flexibility of the industry and its future preparedness.

LITERATURE REVIEW

Indian pharmaceutical sector has been able to maintain a good financial stability especially in times of worldwide uncertainties. A number of researchers have explored the structural strength of the sector by analysing some of the financial performance indicators which include: Net Profit Ratio (NPR), Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA), Return on Capital Employed (ROCE), Return on Net Worth (RONW) among others that play an immense role towards calculating a firm Sustainable Growth Rate (SGR). Basak (2022) carried out an in-depth financial analysis of Indian pharmaceutical companies listed in the NSE based on its financial performance during the COVID-19 wave, including a focus on NPR and EBITDA. The research has shown that exports have grown by 24.9 percent in September 2020 compared to a year ago and that the operating profitability of such companies has also increased, meaning that such companies did not only regain their foot form being battered by the pandemic efforts, but instead managed to turn it into a blessing financially. This is supported by similar findings by Behera and Rath (2021) who employed the event study to investigate price responses of the stock market on COVID-related events and substantially positive abnormal returns were recorded near crucial pharmaceutical announcements. It proved that the sector showed good investor sentiment and strength, which are reflected positively in internal financial measures OCE as well as EBITDA margins. To this, Singh and Chakraborty (2023) measured the financial distress of the Indian pharmaceutical firms based on the Altman Z-score and solvency centered criteria. Their findings indicated that working capital to total assets together with profitability ratios were key indicators of stock returns in the times of the pandemic. Weaknesses of this ratio can be applied to COVID in that it can be strengthened by its improvement in short or long term, which further supports SGR.

Similarly, a panel data analysis with observation period of 10 years developed by Akash and Massand (2023) on the impact of solvency ratios, which includes current ratio, debt equity ratio, and interest coverage ratio on RONW, was carried out. Interestingly, such factors as interest coverage (with high value indicating substantial positive effect on the RONW) and liquidity (having high value positively affected RONW significantly) revealed the fact that the process of the prudent financial management plays a vital role in maintaining growth. Using a new application of Fuzzy-AHP and TOPSIS methods, Gupta (2024) identified the ranking of the financial indicators of Indian pharma companies in the pre-COVID-19 period and during COVID-19. In the research, ROCE and EBITDA were identified as the strongest factors to express the level of financial strength, preceded by the profitability data, i.e., NPR. This ranking is in line with the logic that operational efficiency and profitability are basis of a firm to be able to sustain a

growth in terms of disruptions. In the meantime, Srivastava et al. (2024) compared the monthly stock returns of the pharmaceutical companies listed on the Bombay Stock Exchange, 13 months prior and after the COVID outbreak in the form of a time-series analysis. They noted that there has been a steady rise in average growth rates after COVID, and this shows that investors saw these companies as stable entities and those which performed well. Such confidence is normally based on some financial power background such as variables like NPR, EBITDA, and RONW. Das (2023) was specifically devoted to exploring the interdependence between the profitability and the management of the receivables, and their indicators referred to ROCE and net profit margin. On the basis of the sample consisting of 24 pharmaceutical companies (2013-2022), the authors showed a significant positive relationship between the efficiency of receivables and ROCE.

The effective collection of the receivables, particularly in uncertain periods, enabled the firms to remain profitable and get a good level of capital productivity, thus, enjoying sustainable long-term growth. Regarding the market risk and volatility, Panchal (2024) analyzed the risk-return picture of Indian pharma companies in Markowitz theory at the time of the COVID-19. The findings indicated that the pharmaceutical firms showed strong positive correlation with the bigger Nifty Pharma Index, and they did not lose their profitability even in an unstable market. This flexibility strengthens the power of internal financial rates such as EBITDA and ROCE as determinants of investor confidence and long term value. Other than the internal activities, the R&D spending is also significant to building sustainable growth. The pre-pandemic study conducted by Nandy (2020) to evaluate the effect of the intensity of R&D on ROA and ROE (adjacent to ROCE and RONW) includes three different models: dynamic and static--dynamic--and dynamic--static. The results confirmed beyond doubt the perception that increased R&D investment would yield better rewards and make innovation one of the real assets of sustainable growth of pharma companies. Lastly, the Government of India Economic Survey (2023) pointed out that the economy relied on a pharmaceutical industry worth more than USD 50 billion and nearly one-fifth of total export of generic drugs worldwide in the course of FY 202223. It is important to note that this has structural significance to the Indian pharma on the global platform making the financial indicators employed on the academic researches instrumental as metrics in capturing its growth and stability.

RESEARCH GAP

Though many researchers (e.g. Gupta, 2024; Basak, 2022; Akash & Massand, 2023) have examined the individual financial ratios regarding the Indian pharmaceutical companies, very few studies have linked an array of ratios to Sustainable Growth Rate (SGR) during a pre- and post-COVID era. The bulk of the existing studies have considered profitability study, or risk returns, or stock market influence and not the interdependence of internal business components that affects the potentials of business to sustain in external shocks.

Besides, the comparative effect of the timeline (pre- and post-COVID-19 adjustment of the financial strategies) is mostly disregarded by the existing studies. One can also find a shortage in coherent studies investigating the future behavior of SGR as anticipated by variables such as EBITDA and ROCE combined. This paper provides a solution to these gaps as it creates a systematic relationship between the SGR and its financial drivers over a critical period (2015-2024) with the discontinuous impact of COVID-19.

HYPOTHESES OF THE STUDY

Null Hypothesis (H_0): There is no significant difference in the financial indicators (SGR, NPR, ROCE, EBITDA, RONW) of Indian pharmaceutical companies between the pre-COVID and post-COVID periods.

Alternative Hypothesis (H_1): There is a significant difference in at least one financial indicator between the pre-COVID and post-COVID periods for Indian pharmaceutical companies.

RESEARCH METHODOLOGY

This is a quantitative, comparative research that applies the top 10 Indian pharmaceutical firms of 2015 to 2024 based on a comparative study of the performance of the key financial indicators- Net Profit Ratio (NPR), EBITDA, Return on Capital Employed (ROCE) and Return on Net Worth (RONW)- on the Sustainable Growth Rate (SGR)-PRAT Model. The statistics are taken into account by means of secondary sources like CMIE Prowess. To determine the impact of COVID-19 the data will be categorized into pre-covid (2015- 2019) and post-covid (2020-2024) periods. Data analysis is done on SPSS. Trend Analysis is summaries of trends; -T test is comparison of SGR across time frames.

DATA ANALYSIS AND INTERPRETATION

Sr.No.	Name of Companies	SGR		NPR		EBITDA		ROCE		RONW	
		AVERAGE	S.D	AVERAGE	S.D	AVERAGE	S.D	AVERAGE	S.D	AVERAGE	S.D
1	Sun Pharmaceutical Inds. Ltd.	-0.04	0.05	-0.04	0.11	13.14	11.20	-0.36	5.60	-0.48	7.26
2	Cipla Ltd.	0.09	0.02	0.12	0.02	19.99	3.05	10.82	1.04	11.46	0.91
3	Divi'S Laboratories Ltd.	0.17	0.04	0.27	0.03	37.90	2.07	22.04	4.88	22.22	4.86
4	Zydus Lifesciences Ltd.	0.16	0.08	0.24	0.05	30.80	4.65	16.88	9.35	22.46	11.52
5	Dr. Reddy'S Laboratories Ltd.	0.08	0.04	0.12	0.04	23.24	4.46	8.96	3.27	11.10	4.38
6	Torrent Pharmaceuticals Ltd.	0.15	0.09	0.19	0.08	36.37	10.03	24.00	14.59	22.93	14.25
7	Lupin Ltd.	0.15	0.08	0.20	0.06	31.00	6.31	19.34	9.80	19.44	9.88
8	Aurobindo Pharma Ltd.	0.22	0.04	0.17	0.01	27.30	1.45	16.76	2.09	26.86	5.95
9	Mankind Pharma Ltd.	0.16	0.05	0.15	0.02	22.04	1.69	17.62	2.65	22.02	2.83
10	Alkem Laboratories Ltd.	0.13	0.03	0.15	0.03	19.92	2.95	14.82	4.17	17.12	4.14

Table 1 What it shows Analysis and interpretation Table 1 shows the mean and the standard deviation of key financial indicators (SGR, NPR, EBITDA, ROCE, RONW) of top 10 Indian pharmaceutical companies in the pre-COVID period (2015-2019):

Sustainable Growth Rate (SGR) Highest SGR: Aurobindo Pharma (Avg. 0.22), then Divi labs (0.17), Zydus (0.16) and Torrent (0.15) Lowest SGR: The SGR of Sun Pharma is -0.04 and the standard deviation is 0.05, which means that the company has poor internal growth and the performance is not so similar. Companies such as Aurobindo and Divi have good internal growth capacity probably because of the stable profitability and effective use of capital. The adverse SGR of Sun Pharma indicates strategic or profitability problem during this time.

Net Profit Ratio (NPR), Top Performers: Divi Lab (0.27) and Zydus (0.24) recorded the best profit margins. Lowest: Sun Pharma once again has a negative NPR (-0.04), and we have high variability (SD = 0.11), implying that there is a lot of earning pressure, and this is very inconsistent. The relationship between NPR and SGR is relatively high to the extent that profitability results into enhanced sustainable growth. High R&D expenditures or Regulatory issues before COVID can be factors that may have influenced the developments of Sun Pharma.

Most Efficient Firms: Divi, Torrent, and Lupin recorded high EBITDA, 37.90 percent, 36.37 percent, and 31.00 percent, respectively, meaning that the firms are running efficiently in their operations. Smaller EBITDA: Alkem (19.92 percent) and Cipla (19.99 percent) have low EBITDA that have relative stable SD. The presence of high EBITDA would indicate good basic operating conditions. The high EBITDA with the low SD (2.07) of Divi proves its position as a properly run corporation.

Return on Capital Employed (ROCE), Highest Roce: Torrent (24.00%), Divi (22.04%), Lupin (19.34%) and Mankind (17.62 %). Bottom: Sun Pharma once again has a negative average ROCE (-0.36) with high deviation (SD = 5.60), which means that the company uses capital inefficiently. Average and good ROCE ratings of most companies indicate good use of capital. The coefficient of variation in such Companies as Zydus (SD = 9.35) and Torrent (SD = 14.59) indicates an indication of variation in capital returns over the years.

Return on Net Worth (RONW), Best Performance Aurobindo (26.86%), Torrent (22.93%), Zydus (22.46%) and Divi 22.22%. The lowest: Sun Pharma depicts an adverse RONW (-0.48) and a large amount of variations (SD = 7.26), which indicates unacceptable equity returns. The greater RONW is associated with greater SGR. Aurobindo maintained constant performance levels in equity returns in maintaining its strong SGR. Other firms such as Cipla and Dr. Reddy exhibit a medium RONW level of stable but restrained use of equity.

Table.2 After COVID Averages and Standard deviation of SGR, NPR, EBITDA, ROCE, RONW

Sr.No.	Name of Companies	SGR		NPR		EBITDA		ROCE		RONW	
		AVERAGE	SD	AVERAGE	SD	AVERAGE	SD	AVERAGE	SD	AVERAGE	SD
1	Sun Pharmaceutical Inds. Ltd.	-0.02	0.06	0.10	0.09	25.14	7.7	7.84	4.9	10.12	6.3
2	Cipla Ltd.	0.11	0.02	0.20	0.03	27.54	2.0	12.34	2.2	12.38	2.2
3	Divi'S Laboratories Ltd.	0.14	0.07	0.26	0.05	37.60	5.4	19.48	6.4	19.46	6.5
4	Zydus Lifesciences Ltd.	0.10	0.05	0.20	0.08	30.58	7.7	10.96	3.6	14.58	5.3
5	Dr. Reddy'S Laboratories Ltd.	0.12	0.04	0.18	0.05	28.46	4.0	13.90	5.0	14.82	5.2
6	Torrent Pharmaceuticals Ltd.	0.07	0.04	0.15	0.01	34.58	1.0	18.80	3.0	17.79	1.7
7	Lupin Ltd.	0.03	0.05	0.07	0.07	13.62	8.0	4.80	4.8	7.78	3.7
8	Aurobindo Pharma Ltd.	0.11	0.05	0.14	0.04	21.04	4.9	10.50	4.1	13.44	5.6
9	Mankind Pharma Ltd.	0.19	0.03	0.19	0.02	26.76	2.6	18.66	3.8	24.00	4.7
10	Alkem Laboratories Ltd.	0.13	0.04	0.17	0.04	21.94	3.8	16.08	3.5	18.84	4.0

Comparison and evaluation of post-COVID-average and standard deviations of the main financial metrics of 3 pharmaceutical firms of our choice:

Post-COVID financial analysis of top ten Indian pharmaceutical companies provides major findings about the business growth, profits, and competence. Sustainable Growth Rate (SGR) shows an internal growth capacity of a company without financing. On average Mankind Pharma (0.19), Divi s Laboratories (0.14) and Alkem Laboratories (0.13) have the highest SGR performing well on the internal financial standings. On the contrary, Sun Pharmaceutical industries had recorded negative SGR of -0.02 which depicts an unsustainable growth pattern or dividend payment exceeding that level retained earnings. Lupin also registered a low measure of SGR (0.03) indicating poor financial performance.

Regarding the Net Profit Ratio (NPR), Divi Laboratories (0.26), Cipla and Zydus Lifesciences (0.20 each), and Mankind (0.19) were the leaders that showed excellent profit margins and efficiency. Conversely, Lupin had the lowest NPR of 0.07 meaning that its profitability was weak because of either a high cost base or low pricing power. These tendencies are supported by the EBITDA figures with Divi, (37.60 per cent), Torrent (34.58 per cent) and Zydus (30.58 per cent) all recording the best margins showing stellar operating figures. Lupin and still continued in this parameter with the narrow margin of only 13.62%.

The Return on Capital Employed (ROCE) reveals information about the performance of the companies in terms of the capital utilization. The best ROCE values were demonstrated by Divi Laboratories (19.48%), Torrent (18.80%) and Mankind (18.66%), which means that they are attractive in terms of capital productivity. On the contrary, Lupin (4.80%) and Sun Pharma (7.84%) had low returns on capital employed (ROCE) values showing that the firms are

utilizing capital in inefficient ways. The same trend can be observed in Return on Net Worth (RONW), where as Mankind (24.00%), Divi (19.46%), and Alkem (18.84%) have created the best value of shareholders, Lupin (7.78%) and Sun Pharma (10.12%) have remained at the very bottom.

In risk terms, standard deviation (S.D.) sheds light about performance volatility. Most indicators showed relatively low S.D. in case of Cipla, Mankind, and Torrent as their companies were financially stable and consistent. Conversely, there has been more volatility in the business of companies such as Lupin, Zydus and Divi, especially in EBITDA and ROCE which shows uncertainty or business change or market dynamics.

Table.3 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BSGR	.1270	10	.07088	.02241
	ASGR	.0980	10	.05903	.01867
Pair 2	BNPR	.1570	10	.08460	.02675
	ANPR	.1660	10	.05420	.01714
Pair 3	BROCE	15.0880	10	7.09250	2.24285
	AROCE	13.3360	10	4.96148	1.56896
Pair 4	BEBITDA	26.1700	10	7.89059	2.49522
	AEBITDA	26.7260	10	6.89583	2.18065
Pair 5	BRONW	17.5130	10	8.09000	2.55828
	ARONW	15.3210	10	4.80556	1.51965

Paired Samples Statistics – Descriptive Analysis

Paired Samples Statistics Table 3 indicates the average (mean) and standard deviation (SD) of the financial ratios of 10 pharmaceutical companies Sustainable Growth Rate (SGR), Net Profit Ratio (NPR), EBITDA, Return on Capital Employed (ROCE), and Return on Net Worth (RONW) both prior to the COVID pandemic (denoted as B) and after the COVID (denoted as A). General SGR decreased slightly when pre-COVID (0.1270) and post-COVID (0.0980), implying that the internal rate of growth potential was slightly reduced after the pandemic. Intriguingly, the NPR rose up to (a) 0.1660 (slightly) compared to the (a) 0.1570 implying that profitability leveled up modestly. ROCE fell to 13.336%, which is lower than 15.088% during the pre-COVID period meaning that the utilization of capital decreased during the post-COVID period. The EBITDA however increased slightly at 26.17 percent to 26.73 percent indicating a relatively stable operational efficiency. On the one hand, RONW, indicating the amount of the shareholders return, declined to 17.513 percent or 15.321 percent, which indicates a decline in premium performance after COVID. On the whole, such descriptive numbers show minor fluctuations regarding the financial performance, though the changes are not significant in size.

Table.4 Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	BSGR & ASGR	10	.588	.074
Pair 2	BNPR & ANPR	10	.472	.168
Pair 3	BROCE & AROCE	10	.456	.185
Pair 4	BEBITDA & AEBITDA	10	.400	.251
Pair 5	BRONW & ARONW	10	.427	.218

Paired Samples Correlations – Relationship Analysis

The correlation of pre-COVID and post-COVID values of each of the financial indicators is revealed in the Paired Samples Correlations table 4. Correlation is moderate ($r = 0.588$) in the case of SGR with a significant level value ($p = 0.074$) which indicates a not quite constant tendency in the parameter of SGR in the two time sections but not statistically significant according to the 5 percentage threshold. The other indicators, which include NPR ($r = 0.472$), ROCE ($r = 0.456$), EBITDA ($r = 0.400$), and RONW ($r = 0.427$), have weak positive correlations with their corresponding post-COVID values. But all these correlations are not statistically significant since their p-values are greater than 0.05. It indicates that the performance of the companies financially in the post-COVID period cannot be well forecasted upon based on its performance in the pre-COVID phase, which is an indicator of looking at moderate to low consistency over time. Precisely, whereas there were companies that continued their directions, there were also those that presented fluctuations in performance because of changes related to the pandemic and accommodations.

Table.5 Paired Samples T- Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BSGR - ASGR	.02900	.05990	.01894	-.01385	.07185	1.531	9	.160
Pair 2	BNPR - ANPR	-.00900	.07593	.02401	-.06332	.04532	-.375	9	.716
Pair 3	BROCE - AROCE	1.75200	6.54189	2.06873	-2.92779	6.43179	.847	9	.419
Pair 4	BEBITDA - AEBITDA	-.55600	8.13847	2.57361	-6.37791	5.26591	-.216	9	.834
Pair 5	BRONW - ARONW	2.19200	7.43908	2.35244	-3.12959	7.51359	.932	9	.376

Paired Samples Test – Hypothesis Testing for Differences

To verify whether the difference between the mean scores of each indicator before and after COVID is statistically significant, it is administered using a t-test by the Paired Samples Test table. In SGR, the mean difference of 0.0290 has a p-value of 0.160 which shows that the fall in the growth rate is not significant. Likewise, positive value of NPR (-0.0090) although this is a bit negative is not significant (p = 0.716). In the case of ROCE, the average difference of 1.7520 (giving an indication that the value is larger before COVID) has the p-value of 0.419, which does not even reach a significant value at all. The lower level change in EBITDA is minimal (-0.5560) and p- value is large equal to 0.834, which indicates that there is almost no significant change in the operational margins. Finally, the RONW indicates the difference of +2.1920 on the scale of +/- X in favor of pre-COVID values, although the p-value of 0.376 means no statistically significant difference. Overall, all p-values in this table are higher than 0.05 and thus, the idea that none of the financial indicators has been subjected to the statistical changes due to the occurrence of COVID-19 has to be articulated. This highlights the overall sector resilience and stability in financial terms, even in going through the pandemic shock on the economy and healthcare conditions.

CONCLUSION AND SUGGESTIONS

The comparative study of pre-COVID (2015-2019) and post-COVID financial performance of the leading pharmaceutical companies of India has shown that the country has experienced massive changes in the growth pattern, profitability, and capital utilization.

Most Stable Players Before COVID: Divi Laboratories, Aurobindo Pharma, Torrent Pharmaceuticals and Zydus Lifesciences upheld good results on all the variables, with high SGR, NPR, EBITDA, ROCE and RONW. **Under performer Firm:** Sun Pharmaceutical Industries reported negative or very poor averages in all five indicators, and it is likely to have undergone restructuring in the pre-COVID period, high debt ratio, legal tussles, or margins. **Volatility Perspective:** Due to high standard deviation of ROCE and RONW of the companies such as Torrent and Zydus, it is signifying fluctuation in earnings or lapse in strategic positions. Companies with stable performance such as Cipla and Divi have low SDs as they have consistent performances year after year.

In the pre-COVID era, players such as Aurobindo Pharma, Divi Laboratories, Zydus Lifesciences and Torrent Pharmaceuticals became obvious leaders with good Sustainable Growth Rates (SGR), Return on Net Worth (RONW), and positive Return on Capital Employed (ROCE). These companies also reported healthy operating margins and capital productivity which means that they have a well balanced financial position. Conversely, Sun Pharmaceutical industries had an overall unfavorable performance with negative SGR, NPR, ROCE and RONW, which are some of the issues of strategy, perhaps attributed to the high investment in R&D or regulations at that time.

The recession in the Indian pharmaceutical industry is not very much, as observed in the post-COVID financial information of the companies with Mankind, Divi Laboratories and Torrent Pharmaceuticals leading in terms of growth and profitability and staying stable in their operations. On the contrary, organizations like Lupin and Sun Pharma should focus on operations inefficiency and productivity of capital to increase their performance. On the

whole, this industry demonstrates a positive trend, but fluctuations in its performance prove the necessity of strategic management of finances and operations on the level of separate companies.

The general financial situation became brighter in the post-COVID era. Majority of the companies had a positive and better stable SGR showing recovery and inner financial financial powers. In particular, Mankind Pharma exhibited a tremendous result, being the leader in SGR (0.19), low volatility, and profitability and becoming likely to become a new leader in the industry. Divi Laboratories maintained its leadership in terms of sustained EBITDA margins and capital returns whereas the other companies with similar efficiency were Torrent Pharmaceuticals and Alkem Laboratories. Even the company, such as Sun Pharma-that were not performing well before, showed minor improvement in SGR and NPR but still they were below the industry values. Lupin though remained to perform poorly in the two periods with low growth, low profitability and high volatility.

According to the outcomes of paired samples t-test, no financial indicators revealed statistically significant changes (all p-values > 0.05). Therefore, we do not reject the null hypothesis and it follows that the difference in financial performance of these pharmaceutical companies during and after the COVID-19 period is not significant. This implies that the Indian drug industry recorded significant financial strength and flexibility during the pandemic. Although the differences in the metrics can be observed, they did not prove substantial to refer to the structural shift in the domain of finances because of COVID-19.

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