Comparative analysis of Indian pharmaceutical companies during Covid

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INTRODUCTION

The coronavirus pandemic's effects on India have primarily disrupted economic activities and resulted in fatalities. Almost every industry has suffered as domestic demand and exports have dramatically decreased, with some notable outliers where strong growth has been seen. Analysis of the effects and potential remedies for several important industries is attempted.

Since the Covid-19 pandemic began, the pharmaceutical business has grown, particularly in India, the world's top producer of generic medications. In the beginning of 2020, it had a market of $55 billion and was booming in India, supplying hydroxychloroquine to countries all over the world, including the US, UK, Canada, and the Middle East.

Due to the pandemic, the cost of raw materials imported from China has recently increased. Due to the industry's high reliance on imports, interrupted supply chains, and labour shortages brought on by social exclusion, generic medications are the most negatively affected. The pharmaceutical business is simultaneously having difficulties as a result of government-imposed restrictions on the export of essential medicines, machinery, and PPE kits in order to guarantee sufficient supplies for the nation. Things are becoming more difficult as a result of the rising demand for these treatments and their restricted accessibility. In such a dire situation, reducing the financial strain on pharmaceutical businesses, relaxing tax laws, and solving the labour shortage might make a difference.

In order to protect its inhabitants from the virus and stop the pandemic, India was placed in a state of complete lockdown for 21 days starting on March 24 due to the daily average of 7 cases. Lockdown was originally scheduled to conclude on April 15 but was extended for an additional 19 days until May 3 due to the country's conditions during the initial 21-day period as confirmed cases and fatalities were rising.

The industries that are most negatively impacted by large gatherings are those in the entertainment, sports, aviation, transportation, dining, and hospitality sectors. The result was a slower growth in the nation's GDP. Short-term effects of COVID-19 on the health market can be evident in changes in demand, supply constraints, panic buying and stockpiling, regulation changes, shifts in communication and promotion to remote contacts through technology, and modifications to research and development (R&D) processes.

REVIEW OF LITERATURE

According to theory, the coronavirus is passed from animals to people and was first discovered in China in 2019. (Kothai and Arul, 2020) [1]. Antiviral medications are currently unavailable for the treatment of CoV infections (Yethindra, 2020)[2]. India's pharmaceutical industry is excessively reliant on China for the raw materials and intermediate goods needed to manufacture pharmaceuticals. This industry is seriously facing supply interruption as a result of COVID 19. (Economic Times, 2020). According to Line (2020), imports from China satisfy over 70% of India's total demand for active medicinal ingredients. The pharma sector in India has not always been so reliant on imports from China.

Only 0.3 percent of India's bulk medicine (API) imports in 1991 were made up of Chinese ingredients. But as India's drug manufacturers shifted their focus to formulations, they began sourcing APIs from China, where the cost of production is lower. The issue of India's reliance on China for APIs is being considered more and more as one of health security. While the stock market has seen a panic sell-off of stocks after the nation confirmed its first Covid-19 death and as of

March 13, 2020, the nation had nearly 80 confirmed positive cases. In the circumstances described above, it is clear that the market is very emotive and that the fresh piece of information provided by Fama has an impact (1970). In terms of volume, India's pharmaceutical business is third in the world. The pharmaceutical industry of India ranks 3rd in the world in terms of volume and 14th in terms of value (Gopalakrishnan and Vijay, 2017) [3].

This position was earned as a result of sector liberalisation and institutional foreign investment Rao et al (1999) [4]. Strong herding, according to Firoozabadi and Sorkheh (2019) [5], has a detrimental impact on the pharmaceutical industry's return in all but the bust periods. Another study by Fred D. Ledley (2020) [6], indicated that a number of variables, including net profit margin, operational cycle, working capital, inflation rate, etc., affect the return on pharmaceutical stocks. But the report says nothing about the uncertain market data. Masoumi et al. (2019) [7] claim that favorable shocks like the GDP and money supply can have a positive impact on the profitability of pharmaceutical enterprises. The most effective sustainable approach for the pharmaceutical sector, according to Kim (2009) [8], is to invest in effective R&D those results in cutting-edge pharmaceuticals and maintains a pipeline of further items. Future growth will be fueled by the quick speed of change, suitable line corrections, and effective governmental interventions.

Investors have driven Indian pharma equities to their greatest levels during the past year, according to Ekta et al. (2020) [9]. Worldwide, the pharmaceutical industry has benefited from attempts to treat COVID-19 sufferers. The causes for the increase are the re-rating of pharmaceutical stocks and USFDA authorization of certain pharmaceuticals for the treatment of patients.

Surbhi et al. (2020) [10], however, claim that the COVID-19-induced lockdown has caused a decline in elective surgeries, a drop in injectable sales, and a decrease in patients visiting doctors. As a result, the pharmaceutical sector is likely to report weaker earnings in the upcoming quarters of the current fiscal. M Aravind et al. (2020) [11], in their work highlight that particularly in the case of India, the Indian pharmaceutical companies are dependent to a great extent on Chinese pharmaceutical ingredients as a reason why the pharmaceutical stock upside did not sustain. Due to a shortage of key components required for the production of medications, the supply chain of Indian pharmaceutical businesses has been disrupted by COVID-19, which originated in China and has a significant influence there. In their research, Tikan Das et al. (2020) [12], explore the effects of different sector stocks on the announcements of the 21-day lockdown and the WHO's pandemic declaration of the COVID 19 outbreak. The impact varied by industry, with the pharmaceutical industry having the most negative impact followed by the finance industry. Every industry reported poor performance.

In their latest study, Alcan G et al. (2020) [13], discuss the interdependency and connection between legacy pharma manufacturers and small-scale startups with the aim of producing a COVID-19 vaccine. Where, Because of the market turbulence during the coronavirus epidemic, financial markets were difficult to predict. The Dow Jones Industrial Average lost about 1,200 points, the largest intraday point loss in Dow Jones Industrial Average history. The cause for this collapse was a growing belief that COVID-19 had reached American soil and will probably have a more significant economic impact than previously anticipated by investors.

OBJECTIVE OF THE STUDY

To observe the impact of COVID-19 on the net sales and profit margin of pharmaceutical companies inprecovid and post covid quarters (march 2020-march 2021) and to determine the impact of covid 19 on Indian pharmaceutical companies.

DATA COLLECTION

The study includes annual, monthly, and quarterly data from leading pharmaceutical companies listed on the NSE. The top 15 companies chosen by the market capitalization has been taken for the study. Based on each company's market capitalization, these ones were chosen. Additionally, we utilize the returns of the Nifty index as a stand-in for market returns because it sees the most trading activity and sales. We purposefully chose the pharmaceutical sector because its performance throughout the epidemic is anticipated to differ from that of other sectors given that it is actively involved in recovery and mitigating efforts following the emergence of the pandemic. The financial and business news, as well as NSE, are used

to compile the closing prices of the top pharmaceutical companies and significant indexes. The sample is based on how easily accessible the data is.

RESEARCH METHODOLOGY

Research methodology is a method for carrying out research with the use of statistical tools in order to achieve the desired goal of conducting research. A range of statistical techniques and instruments were employed during the investigation. In order to determine the net changes, the top 15 pharmaceutical companies by their market capitalization (as per the NSE website) and their quarterly results for the pre- and post-covid quarters (before the first lockdown and after the settlement of covid-19 as declared by the government of India, reference from Press information bureau government of India) was considered. Additionally, information on the annual net profit margin during the previous five years and its net variations for these quarters was obtained. To get insights from the same data, various graphics were employed. Additionally, graphs were used to depict the economic direction of the companies' net sales and net profits during the time period. It enables comparisons across several quarters in pre- and post-covid scenarios.

ANALYSIS

1. Changes in demand that result in shortages include induced demand, panic buying of oral home remedies, particularly for chronic diseases, and shortages brought on by supply-chain irregularities. & matters relating to COVID-19, Shortages of related prescription medicines are a result of increased hospitalization, pneumonia caused by COVID-19, and increased need for ventilator placement. A medication shortage is characterized as a problem with the supply that has an impact on the pharmacy's ability to make or distribute a drug product or on patient care when prescribers are forced to employ an alternate agent. Since the beginning of January, the number of medications used in hospitals for COVID-19—including respiratory treatments, sedatives, and pain therapies—has increased by 100 to 700 percent. Induced demand and panic purchasing, The public's induced demand for stocking up on drugs, also known as panic buying, may occasionally result in market shortages, particularly for medications for chronic

diseases. The average rise was estimated to be between 10% and 15%, but in certain circumstances, it might be as high as 50%.

Fig.1.Annual Net sales of Indian economy (2017-2022)
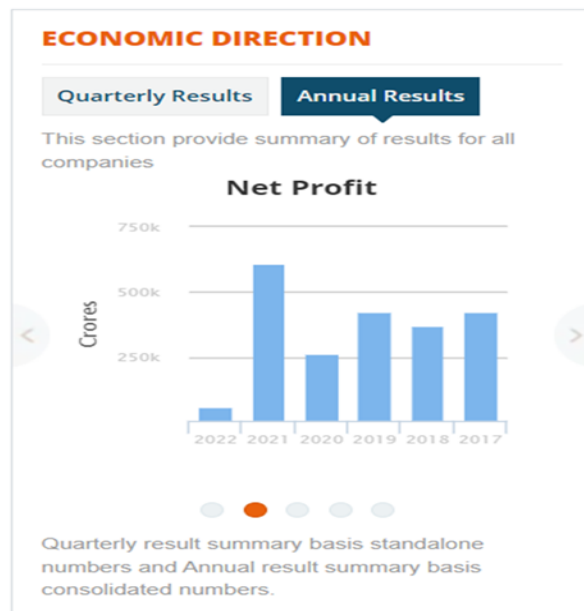

Fig.2.Annual net profit of Indian economy (2017-2022)

(Acquired from https://economictimes.indiatimes.com/markets/stocks/earnings)

2. As the economic direction for the country for the same period was also in a negative trend as shown in

the fig1&fig2. The normal trend for the sectors in India was a downward trend. But in case of pharmaceutical companies we expect to have a high margin in growth due to increased volume of sales as the pandemic invaded every country. Use of several medicines for the same would have resulted in high margin in profit for the companies. The table 1 shows the Indian Inc earnings snapshot.

3. Its see in figure 3 that the comparison between the nifty 500 index which show the overview of general expectation of the stocks for the future. We can see from the graph that the Nifty Pharma was way below the nifty 500 in pre covid quarter (2020 first quarter). As the lock down impacted and covid cases started rising we could see pharma index overtook the nifty 500. This signifies the expectation of the stock price for pharma companies by the investors. The percentage increase in the nifty 500 is 25.37% (March 2020-march 2021), and for the pharma index is 67.38% as show in table 2.

The percentage increase in the sales for the top 15 pharma companies that have been taken for the study shows that, the average net sales increase over the time period taken for the study shows that it is only 9.84%. And the average profit margin increase is only 6.58%. (As shown in Table.2) This signifies that in reality the sales & profit margin has not been risen up to the expectations in the stock market which shows a 67.38%. The correlation index of the average sales increase for these pharma companies and the nifty pharma is 0.147 (using correlation function in excel). The indicates that in reality the sale has not been in exact correlation with the nifty pharma index. The correlation index of the percentage increase in sales of each of these companies reveal the highest correlation was by Dr. Reddys, Divis lab, sunpharma, abott, Pfizer having positive correlation index of 0.98,0.83.0.93,0.94 respectively as shown in table.6. These companies were the leading manufacturers of covid treating ailments during the period. The volume has increase significantly due to the same and hence resulting in the highest correlation.

4. The profit margin table as seen in table.6. shows that the net change in profit margin for these companies has a mixed result which contains half of them with negative net change in profit margin. The companies which showed highest correlation is also having negative profit growth for the first quarter in the two

years. As these companies invest more in their R&D since the covid started, the expenditure has increased.

5. From the weightage of the companies in the nifty pharma index we can see that only cadila is not present in the study. Even then the study shows a mixed result as sunpharma, cipla, Dr.Reddy's shows a negative margin of growth in the profit, whereas the divis lab is third in the weightage but shows a high margin of growth in profit. Hence we can say that the weightage in the nifty pharma index does not show a visible effect in the increase of profit margin.

6. The stock prices of the companies in the nifty pharma is having a high correlation with the nifty pharma index (as shown in table 6) except Biocon and abott. Only Biocon from the study doesn't have a high correlation.

CONCLUSION

Globally, all industries have been significantly impacted by the COVID-19 epidemic. However, the epidemic cannot fully account for this fluctuation. Despite the fact that there is no established treatment for COVID-19 and only later development of a vaccine (after millions of people succumbed to COVID), the pharmaceutical industry has experienced tremendous volatility in terms of price movement around the world. The overall prognosis for the pharmaceutical industry worldwide is that this pandemic will present these businesses with a once-in-a-lifetime opportunity. It is generally believed that the pharmaceutical industry will respond favorably to good news. However, this was not implied to be the situation for the nations we looked into for each announcement. The WHO's declaration that COVID-19 is a pandemic has had a substantial effect on the pharmaceutical industries in the United States and the United Kingdom. However, despite this announcement, there has been little to no development in India's pharmaceutical industry although sales have shown an increase, profit margin shows a mixed result. As we can see that in the Table.3 that net sales for pre covid quarter and corresponding post covid quarters shows a positive net change for almost all the taken samples of pharma companies. Which signifies that the greater volume of sales has resulted in the increased income in the yoy%.This is due to the fact that the more sales occurred during the pandemic periods. Due to panic buying of essential medicines and due to mass buying of treatment medicines for

covid 19. Where as seen in Table 3 the net profit margin does not follow this pattern. In case of net profit margin, a mixed pattern is visible as almost fifty percent of the companies have positive net change and the rest a negative one. This is due to the fact that due to supply chain disruption and production irregularities the expenses have increased for the companies that show a negative net change for profit margin. The reason of not increasing the prices for the drugs will act as a cause for a negative net change in the profit margin as the covid treatment drugs were mostly under the Drug control authority of India. This can be taken into account while concluding that the covid 19 does not have a regular or a major impact on the Indian pharmaceutical sector. Whereas the economic direction for the country for the same period was also in a negative trend.

The expectation of the investors for the pharma companies in their stock was not reflected back in their sales as we can observe it from the correlation index of these two. As the pandemic opened the opportunity for the pharma companies, they started investing more into their R&D which increased their expenditure and lowered their overall increase in the profit margin.
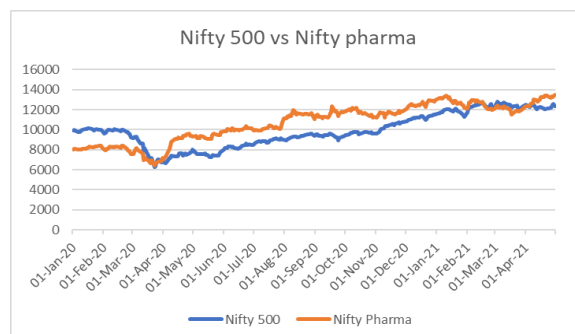

Fig.3. Comparison of general nifty trend(nifty 500) vs nifty pharma (2020 1st quarter to 2021 first quarter)
(taken from NSE website)

Quarter	Nifty 500	Nifty Pharma	Net sales
31-Mar-20	6996.75	7176.5	4103
30-Jun-20	8474.8	9985.15	3337
30-Sep-20	9341.75	11772.85	4425
31-Dec-20	11518.3	12915.9	3701
31-Mar-21	12313.7	12272.6	4103

Table.1. Comparison of nifty pharma, nifty 500 and net sales of the companies. (data acquired from NSE website)

Name	Percentage increase
Nifty 500	25.03
Nifty pharma	67.38
Net sales	9.84
Profit margin	6.58

Table2.percentage increase in the indexes over from 2020 march quarter to 2021 march quarter

Company	DEC '21	SEP '21	JUN '21	MAR '21	DEC '20	SEP '20	JUN '20	MAR '20	DEC '19	SEP '19	Net change	Correlation index
Aurobindho Pharma	2,614.43	2,872.18	2,885.64	4,103.61	3,701.14	4,425.43	3,337.25	3,534.28	3,258.10	3,145.12	16.11	0.54
CIPLA	3,954.79	3,858.82	3,948.33	3,173.39	3,689.88	3,711.03	3,035.72	3,042.01	2,821.92	3,230.08	4.32	0.69
Biocon	473	364.8	382.7	491.6	456.1	560	520.7	482.4	501.3	523.9	1.91	0.00
Dr Reddys	3,479.60	3,823.40	3,433.50	3,350.70	3,408.20	3,333.60	3,236.80	2,837.90	3,044.00	3,446.00	18.07	0.98
Divis lab	2,466.77	1,967.86	1,950.16	1,718.39	1,656.48	1,713.78	1,709.96	1,376.24	1,390.49	1,403.92	24.86	0.83
Sunpharma	3,770.66	4,143.15	3,312.54	3,119.04	3,366.01	3,207.24	2,878.64	2,750.41	2,920.83	3,215.01	13.40	0.93
Alkem Lab	2,180.84	2,363.99	2,278.67	1,917.47	1,778.75	1,984.10	1,550.85	1,687.52	1,596.40	1,894.65	13.63	0.57
Glenmark	2,007.36	2,180.87	2,129.24	1,823.15	1,972.48	1,652.45	1,607.73	1,816.29	1,742.62	1,455.23	0.38	0.26
Zydus	1,830.30	2,008.90	2,123.40	2,018.80	1,822.20	2,056.90	1,795.90	1,707.30	1,627.70	1,567.30	18.25	0.68
Lupin	2,663.20	2,798.76	3,314.12	2,515.96	2,779.10	2,990.07	2,695.08	2,439.12	2,664.09	2,823.71	3.15	0.56
Alembic pharma	1,232.83	1,189.77	1,269.69	1,157.24	1,235.77	1,400.01	1,258.43	1,048.56	1,052.36	1,134.90	10.36	0.59
Torrent pharma	1,588.00	1,799.00	1,681.00	1,443.00	1,597.00	1,640.00	1,685.00	1,457.00	1,436.00	1,567.00	-0.96	0.25
Abott	1,224.36	1,222.06	1,217.83	1,095.54	1,095.37	1,054.85	1,064.27	961.2	1,078.25	1,054.80	13.98	0.94
Ipca labs	1,328.47	1,423.84	1,478.60	1,040.92	1,315.22	1,297.77	1,485.25	1,004.79	1,139.07	1,212.56	3.60	0.31
Pfizer	675.9	636.26	749.17	534.76	593.49	595.41	514.89	502.01	538.18	567.06	6.52	0.78

Table.3. The net sales of the top 15 pharma companies, with their percentage change and their correlation with nifty pharma over the same period. (All data taken from NSE website)

Company	Most selling drugs
Aurobindho Pharma	Semi-Synthetic Penicillins
CIPLA	formulations
Biocon	Generic formulations
Dr Reddys	Generics

Divis lab	Active Pharmaceutical Ingredients (APIs) Intermediates and Nutraceuticals
Sunpharma	Generics
Alkem Lab	pharmaceutical generics, formulations and nutraceuticals
Glenmark	Formulations and generics
Zydus	generic drugs
Lupin	Formulations, Active Pharmaceutical Ingredients (API), drug delivery systems and biotechnology
Alembic pharma	API's and formulations
Torrent pharma	Cardiovascular (CV), central nervous system (CNS), gastro-intestinal, diabetology, anti-infective and pain management segments
Abott	nutritional products, diagnostic tools, branded generic pharmaceuticals, and diabetes and vascular devices
Ipca labs	APIs Atenolol (Antihypertensive) Chloroquine Phosphate (Antimalarial) Furosemide (Diuretic) and Pyrantel Salts (Anthelmintic
Pfizer	medicines and vaccines for immunology, oncology, cardiology, endocrinology, and neurology

Table.4. Major Products of the companies taken for the study

Company	Weightage in Nifty pharma index
Sun Pharmaceutical Industries Ltd	24.09%
Dr. Reddy's Laboratories Ltd	17.00%
Cipla Ltd	11.94%
Divi's Laboratories Ltd	11.26%
Lupin Ltd	9.00%
Piramal Enterprises	8.94%
Aurobindo Pharma	6.65%
Biocon Ltd	5.50%
Cadila Healthcare Ltd	3.24%
Glenmark Pharmaceuticals Ltd	2.38%

Table.5. Weightage of companies in nifty pharma (taken from business standard website)

Yearly Net Profit Margin (%)						Net change
Company	21-Mar	20-Mar	19-Mar	18-Mar	17-Mar	
Aurobindho Pharma	19.67	14.11	12.47	17.65	17.76	39.40
CIPLA	17.75	18.31	15.26	12.89	9.05	-3.06
Biocon	13.82	22.17	17.07	9.85	20.06	-37.66
Dr Reddys	16.37	24.78	12.02	6.05	14.24	-33.94
Divis lab	28.75	25.84	27.31	22.78	26.17	11.26
Sunpharma	16.71	25.62	7.92	3.39	-0.29	-34.78
Alkem Lab	23.34	18.93	13.99	13.5	18.91	23.30
Glenmark	21.79	20.17	25.72	15.77	26.44	8.03
Zydus	18.94	22.25	24.6	18.77	20.48	-14.88
Lupin	11.38	6.59	13.55	13.33	24.87	72.69
Alembic pharma	23.26	23.45	16.69	14.33	14.56	-0.81
Torrent pharma	17.63	15.21	12.93	11.34	18.59	15.91
Abott	16.02	14.48	12.24	12.16	9.53	10.64
Ipca labs	22.19	14.93	12.52	7.29	6.06	48.63
Pfizer	22.22	23.66	20.61	18.29	17.12	-6.09

Table.6.Net change in profit margin of top 15 Indian pharma companies over 5 years (2017-2021) (All data taken from NSE website)

Sunpharma	0.962
Aurobindho	0.962
Cipla	0.994
Dr Reddy's	0.935
Divis lab	0.918
Glenmark	0.92
Cadila	0.981240715
Lupin	0.940965257
Alembic pharma	0.952243059
Torrent pharma	0.941200606
Ipca labs	0.928867581
Abott	0.142475153
Pfizer	0.818483584
Biocon	-0.35

Table.7. Pharma companies and nifty pharma correlation index

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