

Covid 19 and Nifty Pharma Sector Response with Special Reference to National Stock Exchange

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Abstract — The paper aims at studying the effect of the novel corona virus on Nifty pharma sector and in turn the movement of National Stock Exchange market. For this purpose data were collected for Nifty 500 and Nifty Pharma index for the period of one year from 1st October 2019 to 30th September 2020. Returns were calculated, Trend was analysed and Regression equation was framed using a scatter diagram to find out the movement of the selected index values. Returns of Nifty Pharma sector were found to be highest in 2019-2020 as compared to the last five years. During the study period shares traded and the turnover in Nifty Pharma sector was at its peak during May 2020 and August 2020. Regression line found to slope upwards showing a positive reaction between Nifty 500 and Nifty Pharma sector during the Covid 19 period.

Keywords — Covid'19; Nifty 500; Nifty Pharma; Returns.

1. Introduction

National Stock exchange is one of the largest traded stock exchanges in Asia. Established in the year 1992 it provides the latest automated screen based system of electronic trading in India. National and International trading investors have their funds invested in the NSE listed companies. The top 50 companies are listed in the Nifty 50 index. The other broad based indices of NSE are Nifty Next 50, Nifty 100, Nifty 200, Nifty 500, Nifty Midcap 50, Nifty Midcap 100, Nifty Smallcap 100, India Vix, Nifty Midcap 150, Nifty Smallcap 50, Nifty Smallcap 250, Nifty Midsmallcap 400. Apart from this various Sectoral indices, Strategic Indices, Thematic Indices, Fixed income indices are also present. Indian Pharmaceutical industry is the world's largest drug producers. Around 60 percent of the vaccines are manufactured in India and traded globally. Nifty PHARMA from the sectoral indices of NSE has been taken for the study. The broad base index selected for the study is Nifty 500. The study was conducted mainly to find the response of NSE stock market during the pandemic time in the world history. The Novel Corona virus hit the overall world market. There are many sectoral indices listed in the National Stock Exchange but the study focusses on NSE Pharma, since this sector was growing rapidly even during the pandemic period.

2. Review of Literature

The literature review that are available on NSE sector and Covid'19 impact are presented as follows. Mahmoud H Abdellatif (2020) has examined the impact of Covid'19 on the US Stock Market. The author has used the chart of the S&P 500 Index, Dow Jones Industrial Average, and the Nasdaq Composite. March 23rd of 2020 was used as an

index to compare all three of these indexes in the study. The study aimed at analysing the top performing Indexes and found that investors should not worry about these type of crashes as the stocks will rise to normal over a period of time. Qing Hea et al (2020)² have attempted to examine the impact and spill overs of Covid-19 on stock markets. Conventional t-tests and nonparametric Mann-Whitney tests were applied to arrive at the results of the stock market data. Stock market data of the countries of China, Italy, South Korea, France, Spain, Germany, Japan and the United States of America were considered for the study. Results stated that COVID-19 has bidirectional spill-over effects on the Chinese economy and seven other countries that are affected by the outbreak.

3. Statement of the Problem

The Novel coronavirus affected the entire world during 2019-2020. It affected the overall economy to a greater extent that it took more time to recover to the normality. Several lockdowns were announced in India in the context of controlling the spread of Covid-19. The overall stock market was down during the time period except a few sectors, especially the Nifty Pharma sector stocks were rapidly growing. Therefore the study aims at identifying the movement of the Nifty 500 and Nifty Pharma sector movements during the study period from October 2019 to September 2020. The broad based index Nifty 500 was taken as the base to know the movement of the NSE Stock market.

4. Objective of the Study

- The major objective considered for the study is,
- To study the impact of the Covid-19 on returns of Nifty 500 and Nifty Pharma sector.

5. Methodology

The study focused to analyze the impact of Covid-19 effects on the Indian stock market with special reference to Nifty Pharma sector. The Covid-19 cases started by the end of the calendar year 2019 and became serious during the month of March 2020 in India and the Indian government announced officially the first lockdown on 24th march 2020 and thereafter continued with several lockdowns with few relaxations. Therefore for the purpose of research the time period is taken for one year from 1st October 2019 to 30th September 2020, which is almost 6 months before and after the first lockdown. To know the overall revenue of the Indian Pharma sector the past five years revenue from 2015-16 to 2019-20 was taken to compare the growth during the covid period. Nifty 500 broad base indices was chosen to study the movement of National Stock Exchange during the study period and on the other hand Nifty Pharma sector data was chosen to analyze the movement of the share prices before and after lockdown announcements in India. For this purpose daily data of Nifty 500 index and Nifty Pharma sector index were taken into consideration.

6. Results and Discussions

Table 1: Revenue of Indian Pharmaceutical Sector (US \$ Billion)

Financial Year	Revenue of Indian Pharma Sector (US \$ Billion)	Return
2015-16	15.53	
2016-17	16.41	5.66645
2017-18	17.87	8.89701
2018-19	18.12	1.39899
2019-20	20.83	14.9558

(Source: India Brand Equity Foundation)

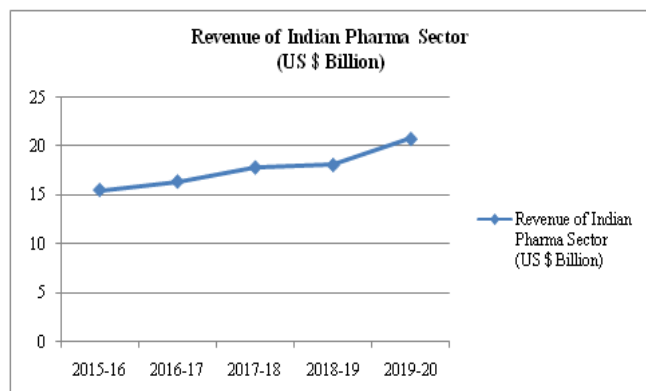


Fig. 1: Revenue of Indian Pharmaceutical Sector (US \$ Billion)

From the above figure 1 it is found that the revenue of the Indian Pharma Sector kept on rising constantly and a very good growth was found in the year 2019-20. The table 1 values show the revenue and return of the Indian Pharma sector. The revenue of the Pharma sector during the year 2019-20 seems to be the highest among the past five years with 23.83 Billion Dollars. When calculating the returns of the past five years, it is observed that the return for the year 2019-20 was found to be highest with 14.96 which again seem to be the highest of past mentioned years.

Table 2: Share Prices of NiftyPharma sector during the study period

Date	Open	High	Low	Close
01-Oct-19	7552.35	7601.40	7388.60	7466.45
01-Nov-19	7902.75	7979.55	7894.20	7949.45
02-Dec-19	8195.45	8198.95	8056.20	8128.95
01-Jan-20	8060.30	8076.65	8018.95	8047.10
01-Feb-20	8129.30	8209.85	7975.90	8013.75
02-Mar-20	7675.55	7768.00	7463.05	7535.10
01-Apr-20	7206.20	7208.25	6991.60	7026.70
04-May-20	9181.60	9507.45	9140.15	9364.60
01-Jun-20	9844.20	9872.40	9677.95	9802.10
01-Jul-20	10004.65	10006.60	9844.50	9882.85
03-Aug-20	11176.3	11389.95	11090.65	11128.40
01-Sep-20	11103.65	11401.5	11052.4	11339.50

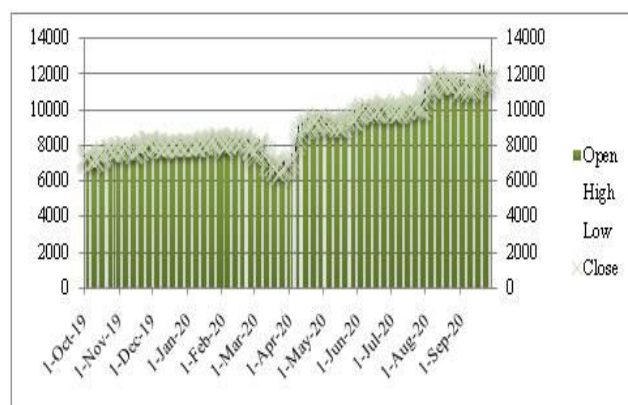


Fig. 2: Share Prices of Nifty Pharma sector during the study period

From the above table it was found that the share prices of Nifty Pharma sector was around 7900 to 8100 during the earlier stage of the covid impact especially from November 2019 to February 2020. This was the time where the coronavirus have started affecting the people but the nation was not aware of the serious effect. Hence the share prices remained normal. In the month of march the share prices

went down to 7535.10 and in April even more down to 7026.70. Therefore in these two months the market seems to be greatly affected during the study period where the share prices reaches the minimum due to continuous lockdowns and restrictions that prevailed in the export of medicines. But immediately in the month of may it started to recover drastically which increased to 9364.60 points and in June to 9802.10 points whereas other sectors were not able to recover so soon. The immediate recovery in the Pharma sector was due to the sector taking the center stage in the Covid-19 fight by innovations in the field of medicines. And thereon in the month of August and September there was a high increase in the share prices with 11,128.40 points and 11,339.50 points where the nation was almost released from the lockdowns and pharma sector started to export more of medicines to various nations. This is clearly depicted in the above figure 2 where a downward curve is seen during march to april and afterwards an upward trend from the month of May to September.

Table 3: Shares Traded in NSE PHARMA during the study period

Date	Shares Traded	Return
01-Oct-19	23157019	
01-Nov-19	23682723	2.27
02-Dec-19	26352824	11.27
01-Jan-20	8898088	-66.23
01-Feb-20	12340055	38.68
02-Mar-20	28891044	134.12
01-Apr-20	31879062	10.34
04-May-20	87107464	173.24
01-Jun-20	75074106	-13.81
01-Jul-20	23088077	-69.25
03-Aug-20	71286493	208.76
01-Sep-20	52474562	-26.39

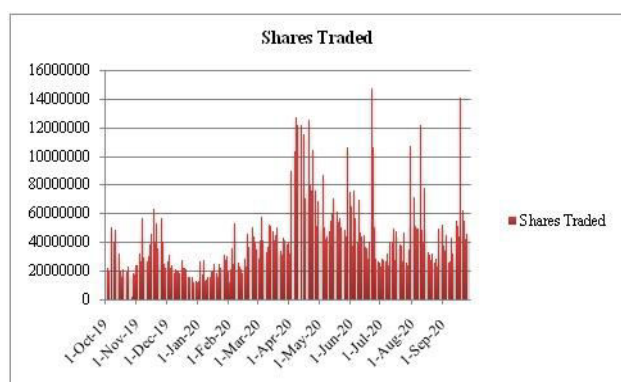


Fig. 3: Shares Traded in NSE PHARMA during the study period

Table 3 presents the number of shares traded during the study period from 1st October 2019 to 1st September 2020. Also return was calculated to find the variations in the number of shares traded during various months. The number of shares traded during the month of October, November and December 2019 were almost around 2 crores, then it came down in January 2020 then increased to some extent to 1,23,40,055 in the month of February. In the month of March the shares traded were 2,88,91,044 which was the starting month of lockdown of the pandemic corona virus. During the next month April the shares traded started to increase which reaches 3,18,79,062. Immediately in the month of May the shares traded in Nifty Pharma reaches its peak with 8,71,07,464 shares traded which is almost 173.2345 percent of increase as compared to the previous month. This is the month where investors started buying and selling of shares in Pharma sector with a hope that research in the field of medicine for the novel corona virus will definitely provide good returns. Hence, the shares traded during the month reaches its highest. Then in the month of June also the shares traded were high with 7,50,74,406 but immediately there was a decrease with 69.25 percent in the shares traded in July and in August it increased with 208.75 percent as compared to the previous month. This rise in August was due to few relaxations in the lockdowns and the sector started exporting medicines. Finally in the month of September it seems to attain normality with 5,24,74,562 shares traded.

Table 4: Turnover of NiftyPharma

Date	Turnover (Rs. Cr)
01-Oct-19	1461.58
01-Nov-19	2039.25
02-Dec-19	1352.79
01-Jan-20	613.47
01-Feb-20	896.89
02-Mar-20	1856.49
01-Apr-20	1607.57
04-May-20	5241.59
01-Jun-20	4566.32
01-Jul-20	1740.48
03-Aug-20	6286.82
01-Sep-20	3634.2

The above table 4 represents the turnover of Nifty pharma sector during the study period. Turnover of the sector was found normal except in the month of May, June and August 2020. The Novel Corona virus became serious in the mid month of March 2020 in India where the government started to announce the lockdowns. In March and April the turnover almost remained normal with 1856.49 crores and 1607.57 crores respectively but did not decrease like other sectors. In the month of May the

turnover raised to 5241.59 crores which is almost more than triple the previous month's turnover.

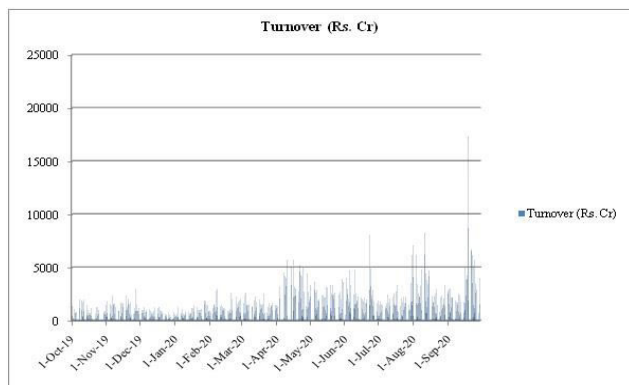


Fig. 4: Turnover of Nifty Pharma

This was due to the various pharma industries started producing vaccines for the novel corona virus. In the next month of June the turnover was around 4566.32 crores. In July it came down steeply with 1740.48 crores. But again in the month of August the turnover of pharma sector went to its peak with 6286.82 crores which was the highest turnover during the study period. The reasons for high turnover in the month of August are due to various relaxations and export of medicines to other countries.

Table 5: Regression Analysis

Date	NIFTY 500	NIFTY PHARMA	Returns NIFTY 500	Returns NIFTY PHARMA
01-Oct-19	9236.4	7466.45	-1.1187359	-1.0771422
01-Nov-19	9704	7949.45	0.14809616	0.90503481
02-Dec-19	9798	8128.95	-0.1594718	-0.7448153
01-Jan-20	9888.55	8047.1	0.16206553	0.08644117
01-Feb-20	9606.05	8013.75	-2.5898828	-1.5340476
02-Mar-20	9178.8	7535.1	-0.6198537	-0.549708
01-Apr-20	6761.95	7026.7	-3.3558438	-2.0873685
04-May-20	7596.9	9364.6	-5.1916285	0.40205423
01-Jun-20	8020.1	9802.1	2.52735733	0.34293553
01-Jul-20	8554.75	9882.85	0.9433851	-1.0245214
03-Aug-20	8932.05	11128.4	-1.1476634	-0.1838746
01-Sep-20	9442.25	11339.5	0.7490357	2.34390513

Table 5 reveals the regression analysis carried out for Nifty 500 and Nifty Pharma sector. The analysis was carried out mainly to know the relationship between Nifty Pharma sector and Nifty 500. The regression line seems upward sloping which indicates that when Nifty 500 moves

upwards, Nifty Pharma also moves upwards. Medium variations from the line state that Nifty Pharma sector varies other than Nifty 500's variations.

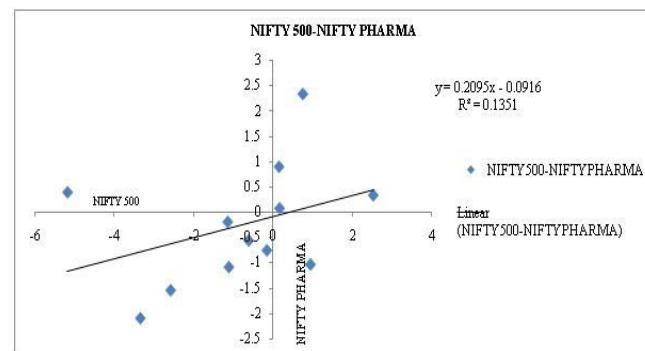


Fig. 5: Regression Analysis

Y axis represents the Nifty Pharma and X axis represents the Nifty 500 values. The regression equation $y = 0.2095x - 0.0916$ states that for every 1 percent increase in the Nifty 500 values there is 0.2095 percent increase in the return for Nifty Pharma sector. Results show that, if the Nifty 500 does not increase at all then the Nifty Pharma sector will be negative with -0.0916. Nifty Pharma stock will decline by 91.6% if Nifty 500 stayed completely flat. R2 value states that 13.51% of the variations in Nifty Pharma is explained by Nifty 500. The fact that Nifty Pharma is fluctuating is partly explained because Nifty 500 itself is fluctuating.

7. Conclusion

The Novel Corona Virus impacted the global economy to a greater extent and it took months to recover to its normality. Pharmaceutical sector was leading the market whereas the other sectors were almost down. Revenue of Nifty Pharma was highest in 2019-20 as compared to the previous five years. Share prices of Nifty Pharma went on increasing from April 2020 onwards after a fall in March 2020 when lockdown was announced. Shares traded and turnover of Nifty Pharma was found to be highest during May and August 2020. Upward sloping regression line states both Nifty 500 and Nifty Pharma stocks move together to certain extent. On the whole it was found that during the Covid'19 Nifty Pharma stocks prices, revenue, turnover and export increased and was found positive from April 2020 but it underwent a fall in March 2020 when the lockdown was announced first in India.

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