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## The Impact of COVID-19 on Growth of Indian Pharmaceutical Companies

**Chaitanya Jere**

MBA Student

Vasantryadada Patil Institute of Management  
Studies & Research,  
Sangli (Maharashtra)

E-mail: [chaitanyajere@gmail.com](mailto:chaitanyajere@gmail.com)

**Mrudula Charankar**

MBA Student

Vasantryadada Patil Institute of Management  
Studies & Research,  
Sangli (Maharashtra)

E-mail: [charankarmrudula@gmail.com](mailto:charankarmrudula@gmail.com)

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### **Abstract:**

*No one has thought that the year 2020 is going to bring havoc onto this world in the form of COVID-19. World's economy has crumbled in the face of this disease, and its impact can be seen till this day. But how the Healthcare sector and in that particular Pharmaceutical sector reacted to this change is a good question to ask. The purpose of this study is to find how the pandemic has affected the growth of Pharmaceutical companies by using various methods and tools. Three Pharmaceutical companies are selected for this study which are Cipla Ltd., Lupin Ltd. and Divis Laboratories Ltd. Daily VWAP prices of these companies are collected for a period of four years or 989 trading days, divided into pre-event periods of 3 years starting from 24 May 2017 to 23 May 2020 and one year of post-event period starting from 24 May 2020 to 23 May 2021. Fundamental analysis is also done with the help of annual reports of selected companies to know the growth in the intrinsic value and values are taken at the end of every financial year i.e. 31 March for the same reason. This study suggests that all selected companies have seen above average annual growth to varying degrees, particularly outperforming the 2019-2020 financial results by a long shot. This is a clear indication that the pandemic has fueled the growth of Pharmaceutical companies and this can be applied to the Pharmaceutical sector in general although it is not particularly studied in this paper.*

### **1. INTRODUCTION:**

The Pharmaceutical Sector is paving a way by innovating new life saving products. From a market size of USD 12.6 billion in 2009, the Indian pharmaceutical market will grow to USD 55 billion by 2020. India's domestic pharmaceutical market is estimated at US\$ 42 billion in 2021

and likely to reach US\$ 65 billion by 2024 and further expand to reach ~US\$ 120-130 billion by 2030.

The Corona virus disease was originated in Wuhan, China has quickly spread to various countries, with many cases having been reported worldwide. After the outbreak of the COVID-19, the stock market came under fear as BSE Sensex and NSE Nifty fell by 38%. It leads to a 27.31% loss of the total stock market from the beginning of this year. The stock of some other sectors such as hospitality, tourism, and entertainment has been dropped by more than 40% due to transport restrictions.

By selling Covid-related medication, the Pharmaceutical market grew 51.5% and 47.8% for the months of April and May, respectively. This is precisely why we need to study how Pharmaceutical sector is performing in this pandemic situation. It is necessary to find the growth in intrinsic value of Pharmaceutical companies caused by COVID-19. This research will help general people and investors to decide, whether investing in Pharmaceutical companies is a good option.

Studying only market performance of the stocks will not give all information necessary to make informed decision for investing money long term. That's why calculating intrinsic value by using fundamental analysis is advisable. Because of this reason this paper decided to study not only performance of companies in share market but also finding their intrinsic value through fundamental analysis.

## **2. OBJECTIVE OF THE STUDY:**

To measure growth of selected Pharmaceutical companies between Pre and Post Pandemic situation by using techniques like average increase in VWAP and Fundamental Analysis.

## **3. LIMITATIONS OF STUDY:**

Studying all the companies in the Pharmaceutical sector is not manageable in itself and also restrictions due to COVID-19 and time constraints had made this task impossible to achieve. That's why we have selected only three companies which are Cipla Ltd., Lupin Ltd. and Divis Laboratories Ltd. We have only considered the performance of these companies in the National Stock Exchange (NSE).

## **4. LITERATURE REVIEW:**

The Corona Virus Disease 2019 was declared as a global pandemic by WORLD HEALTH ORGANIZATION on 11<sup>th</sup> March, 2020. The Pandemic affected each and every sector of world's economy badly. This pandemic causes negative effect on share prices of many sectors like IT Sector, Auto Mobile Sector and Banking Sector etc. But is it really true, the pandemic affect negatively on pharmaceutical sector also? Finding the answer to this question is going to be interesting.

The various researchers have made the research to answer this question from many points of views. They explained their points with the help of different techniques like share price, statistical techniques etc. In this research we have studied the past researches made by the expertise. We reviewed some literatures relating to Impact of COVID-19. These Literatures are

1. The COVID-19 Pandemic and Indian Pharmaceutical Companies: An Event Study Analysis- March 2021(Chinmaya Behera & Badri Narayan Rath)

The research studies the effect of COVID- 19 pandemic on stock returns on Indian Pharmaceutical companies. IN this research the researcher focuses on Abnormal returns and average returns of Pharmaceutical companies.

2. Title of subordinate document. In: Corona virus disease (COVID-19) outbreak situation. WHO. 2020.

3. Mittal, Shivam and Sharma, Dipasha, The Impact of COVID-19 on Stock Returns of the Indian Healthcare and Pharmaceutical Sector, Australasian Accounting, Business and Finance Journal, 15(1), 2021, 5-21. doi:10.14453/aabfj.v15i1.2

This research investigated the impact of COvid-19 on stock returns of Indian healthcare and Pharmaceutical sector. The research tried to give the answer to question "it really true, the pandemic affect negatively on pharmaceutical sector also?" by using the statistical tool T-statistic for period of 27 days.

It's quite difficult to investigate impact of pandemic on the performance of pharmaceutical companies based only on stock price alone. It will analyze the sector in a single point of view which can't show whole picture.

Our research easily solved this problem as it focuses on share price and intrinsic value of 3 Pharmaceutical companies in India. By using past literatures as a starting point, we are going to study Impact of COVID-19 on Pharmaceutical companies. On the basis of fundamental analysis, we analyze pre event and post event period to study overall performance of the pharmaceutical companies.

## **5. DATA AND METHODOLOGY:**

We have selected three pharmaceutical companies from NATIONAL STOCK EXCHANGE (NSE) which are Cipla Ltd., Lupin Ltd. and Divis Laboratories Ltd. We have collected average price or Volume Weighted Average Price (VWAP) from NSE website for a period of four years of trading days i.e. 989 days, starting from 24 May 2017 to 23 May 2021. Also we have taken financial data of selected companies from their annual reports for a period of four years, starting from 2017-2018 to 2020-2021.



To get a proper understanding of the growth of these companies, we have conducted analysis at various levels. We have started with a simple analysis of changes in average price followed by fundamental analysis of all four years.

First we calculated the average of VWAP for each year by collecting daily VWAP. It gives us an annual growth rate. By comparing before lockdown average growth rate and after lockdown growth rate, with this we can deduce any abnormal growth after lockdown caused by the pandemic.

Then to get more clarity about the growth of the selected company's intrinsic value, we performed fundamental analysis. We get the values of Diluted Earnings Per Share (EPS), Dividend Per Share (DPS), Return On Equity (ROE) and Profit For The Year from annual reports of selected companies. Lupin Ltd. did not include ROE in its annual reports, so we calculated ROE for Lupin Ltd. We also calculated the Price to Earnings Ratio (P/E Ratio) with the help of VWAP at the end of the financial year i.e. 31 March for the year of 2017-2018, 2018-2019, 2019-2020 and 2020-2021 and plotted graphs for the same.

Lastly we have calculated the percentage change and average percentage change before and after the pandemic. Comparing both with each other will give us a clear picture of whether the Pharmaceutical Companies are experiencing any growth because of the pandemic.

In India 1st lockdown is imposed on 24 May 2020. So we have taken the historical performance of selected companies before and after 24 May 2020. We collected three years of historical data pre-event and one year of data post-event. Pre-event period data ranges from 24 May 2017 to 23 May 2018 consisting of 249 trading days, 24 May 2018 to 23 May 2019 consisting of 246 trading days, 24 May 2019 to 23 May 2020 consisting of 245 trading days. Post-event period ranges from 24 May 2020 to 23 May 2021 consisting of 249 trading days.

## FORMULAE

### 1. volume weighted average price (VWAP):

The volume weighted average price (VWAP) is [trading benchmark](#) used by traders that gives the average price a security has traded at throughout the day, based on both [volume](#) and price. It is important because it provides traders with insight into both the trend and value of a security.

$$VWAP = \frac{\sum(\text{Volume} \times \text{Price})}{\sum \text{Volume}}$$

### 2. Diluted EPS:

Diluted EPS is a metric used in [fundamental analysis](#) to gauge a company's quality of EPS assuming all convertible securities have been exercised. [Convertible securities](#) include all

outstanding convertible preferred shares, convertible debt, equity options (mainly employer-based options), and [warrants](#).

$$\text{Diluted EPS} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Outstanding Shares} + \text{Diluted Shares}}$$

### 3. Dividend Per Share:

Dividend per share (DPS) is the sum of declared dividends issued by a company for every ordinary share outstanding. The figure is calculated by dividing the total dividends paid out by a business, including [interim dividends](#), over a period of time, usually a year, by the number of outstanding [ordinary shares](#) issued. A company's DPS is often derived using the dividend paid in the most recent quarter, which is also used to calculate the [dividend yield](#).

$$\text{Dividend Per Shares} = \frac{\text{Dividends}}{\text{Total Number of Shares}}$$

### 4. Return on Equity:

Return on equity (ROE) is a measure of financial performance calculated by dividing [net income](#) by [shareholders' equity](#). Because shareholders' equity is equal to a company's assets minus its debt, ROE is considered the [return on net assets](#). ROE is considered a measure of a corporation's profitability in relation to stockholders' equity.

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$$

### 5. price-to-earnings ratio (P/E ratio):

The price-to-earnings ratio (P/E ratio) is the ratio for valuing a company that measures its current share price relative to its per-share earnings ([EPS](#)). The price-to-earnings ratio is also sometimes known as the price multiple or the earnings multiple.

$$\text{Price to Earnings Ratio} = \frac{\text{Price Per Share}}{\text{Earnings Per Share}}$$

6. EMPIRICAL RESULTS:

Table 1: Percentage Change in VWAP

Company	Year	Status	VWAP	% Change
Cipla Ltd.	2017-18	Pre-event	579.31	-
	2018-19		573.35	-1.03
	2019-20		490.43	-14.46
	2020-21	Post-event	772.53	57.52
Lupin Ltd.	2017-18	Pre-event	931.58	-
	2018-19		843.04	-9.50
	2019-20		742.74	-11.90
	2020-21	Post-event	988.72	33.12
Divis Laboratories Ltd.	2017-18	Pre-event	926.78	-
	2018-19		1412.17	52.37
	2019-20		1837.78	30.14
	2020-21	Post-event	3257.53	77.25

(VWAP is taken from NSE Website)

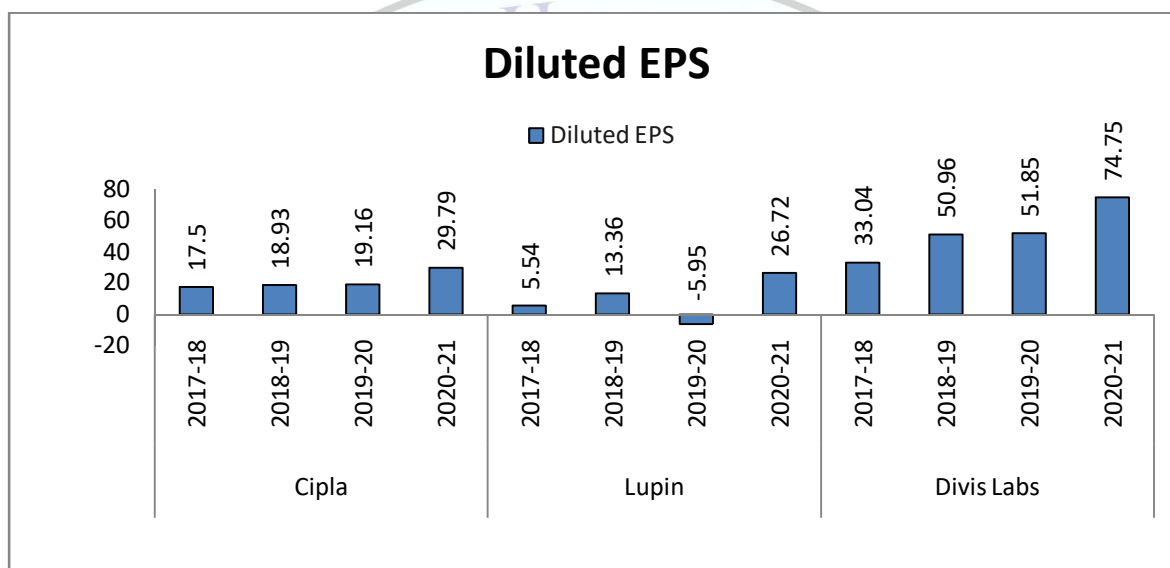
The volume weighted average price (VWAP) is a trading benchmark used by traders that gives the average price a security has traded at throughout the day, based on both volume and price. It is important because it provides traders with insight into both the trend and value of a security. The above table shows VWAP share prices of 3 different companies in different years. There is a decrease in the values of percentage change of VWAP values of each company in the pre event era. But due to the pandemic this situation changes and the percentage change of VWAP become 57.52, 33.12 and 77.25 percentage for the companies Cipla Ltd., Lupin Ltd. and Divis Laboratories Ltd. respectively.

Table 2: Diluted EPS

Company	Year	Status	Diluted EPS	% Change
Cipla Ltd.	2017-18	Pre-event	17.5	-
	2018-19		18.93	8.17
	2019-20		19.16	1.22
	2020-21	Post-event	29.79	55.48
Lupin Ltd.	2017-18	Pre-event	5.54	-
	2018-19		13.36	141.16

	<b>2019-20</b>		-5.95	-144.54
	<b>2020-21</b>	<b>Post-event</b>	26.72	549.07
<b>Divis Laboratories Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	33.04	-
	<b>2018-19</b>		50.96	54.24
	<b>2019-20</b>		51.85	1.75
	<b>2020-21</b>	<b>Post-event</b>	74.75	44.17

(Diluted EPS is taken from Annual Reports)



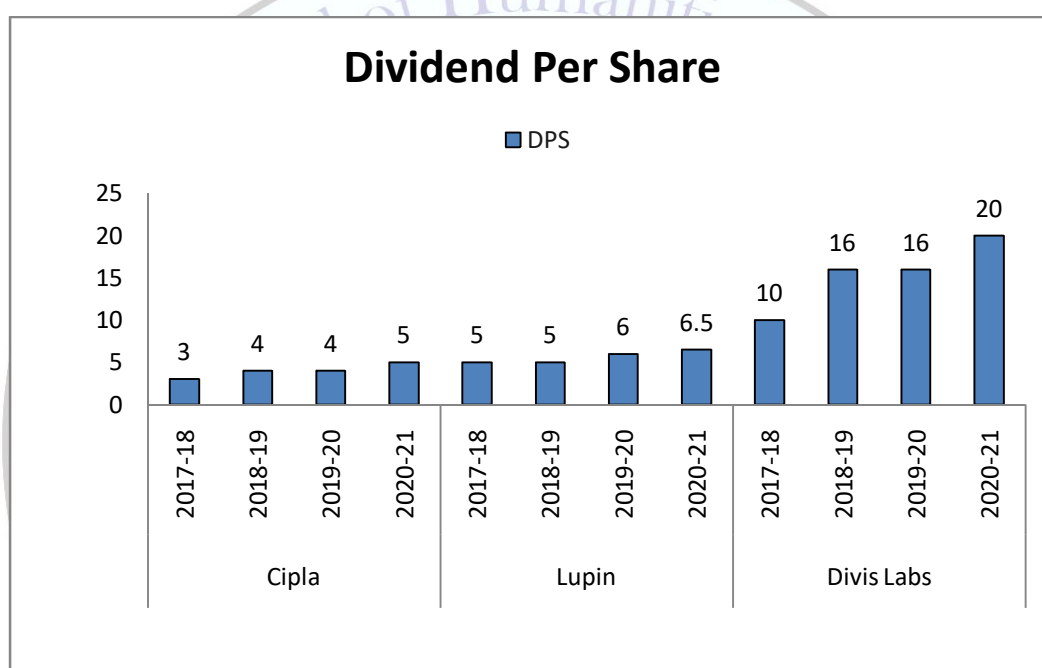
Diluted EPS calculates Company's earnings per share if all convertible securities were converted. The table shows the values of Diluted EPS of 3 Pharma companies for 4 years and percentage change of Diluted EPS. The table indicates that the Diluted EPS of Cipla Ltd. and Divis Laboratories Ltd. have small increase in the Diluted EPS before pandemic and decrease in Lupin Ltd.'s Diluted EPS in the year 2019-20. But in post event section there is huge percentage change in Cipla Ltd., Lupin Ltd. and Divis Laboratories Ltd. companies which is 55.48%, 549.07% and 44.17% respectively.

**Table 3: Dividend Per Share**

Company	Year	Status	DPS	% Change
<b>Cipla Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	3	-
	<b>2018-19</b>		4	33.33
	<b>2019-20</b>		4	0.00
	<b>2020-21</b>	<b>Post-event</b>	5	25.00
<b>Lupin Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	5	-

	2018-19		5	0.00
	2019-20		6	20.00
	2020-21		Post-event	6.5
Divis Laboratories Ltd.	2017-18	Pre-event	10	-
	2018-19		16	60.00
	2019-20		16	0.00
	2020-21	Post-event	20	25.00

(Dividend Per Share is taken from Annual Reports)



Dividend per Share is the dividend received. The above table and graph indicate the pre-event and post-event dividend per share of selected companies for years 2017-18, 2018-19, 2019-20, and 2020-21. The percentage change of post-event year and its preceding year are 25% change in DPS of Cipla Ltd. and Divis Laboratories Ltd., 8.33% change in DPS of Lupin Ltd.

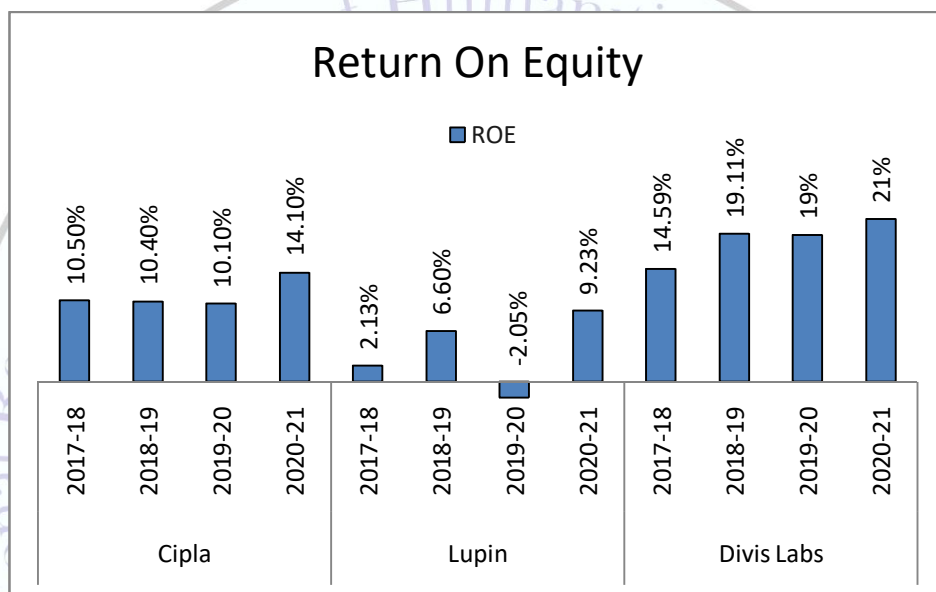
Table 4: Return On Equity

Company	Year	Status	ROE	% Change
Cipla Ltd.	2017-18	Pre-event	10.50%	-
	2018-19		10.40%	-0.95
	2019-20		10.10%	-2.88
	2020-21	Post-event	14.10%	39.60
Lupin Ltd.	2017-18	Pre-event	2.13%	-
	2018-19		6.60%	209.79



Divis Laboratories Ltd.	2019-20		-2.05%	-131.06
	2020-21	Post-event	9.24%	550.73
	2017-18	Pre-event	14.59%	-
	2018-19		19.11%	30.98
2019-20	19%		-0.58	
	2020-21	Post-event	21%	10.53

(Return On Equity is taken from Annual Reports for Cipla Ltd. & Divis Laboratories Ltd. ROE of Lupin Ltd. is calculated by the researchers.)



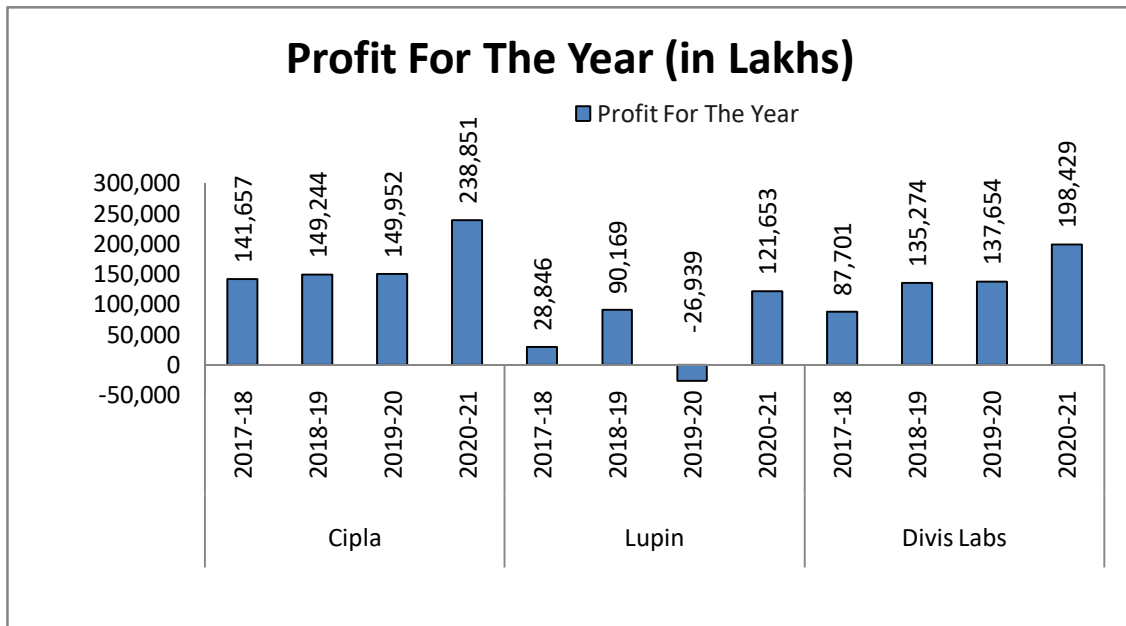
The Return on Equity is the percentage which indicates how much amount will be earned by shareholders. The above table shows Return on Equity for 4 continuous years of selected companies. The percentage change in ROE of Cipla Ltd. in the Pre event year and post event year is 39.60%. While Lupin Ltd.'s percentage change in these 2 years is -550.54 which is very less and the percentage change of Divis Laboratories Ltd. in the years 2019-20 and 2020-21 is 10.53%.

Table 5: Profit for the year

Company	Year	Status	Profit For The Year	% Change
Cipla Ltd.	2017-18	Pre-event	141,657.00	-
	2018-19		149,244.00	5.36
	2019-20		149,952.00	0.47
	2020-21	Post-event	238,851.00	59.28
Lupin Ltd.	2017-18	Pre-event	28,846.00	-
	2018-19		90,169.00	212.59
	2019-20		-26,939.00	-129.88

	<b>2020-21</b>	<b>Post-event</b>	121,653.00	551.59
<b>Divis Laboratories Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	87,701	-
	<b>2018-19</b>		135,274	54.24
	<b>2019-20</b>		137,654	1.76
	<b>2020-21</b>	<b>Post-event</b>	198,429	44.15

(Profit for the year is taken from Annual Reports)



There is 4 year's profit of 3 companies which is shown in the above table and graph. As we see, there is the profit for the year 2020-21 is Cipla Ltd.- Rs. 238,851.00 Lakh, Lupin Ltd.- Rs. 121,653.00 Lakh and Divis Laboratories Ltd.- Rs. 198,429. This amount of profit for the year 2020-21 is high as compared to profit of the years 2017-18, 2018-19 and 2019-20.

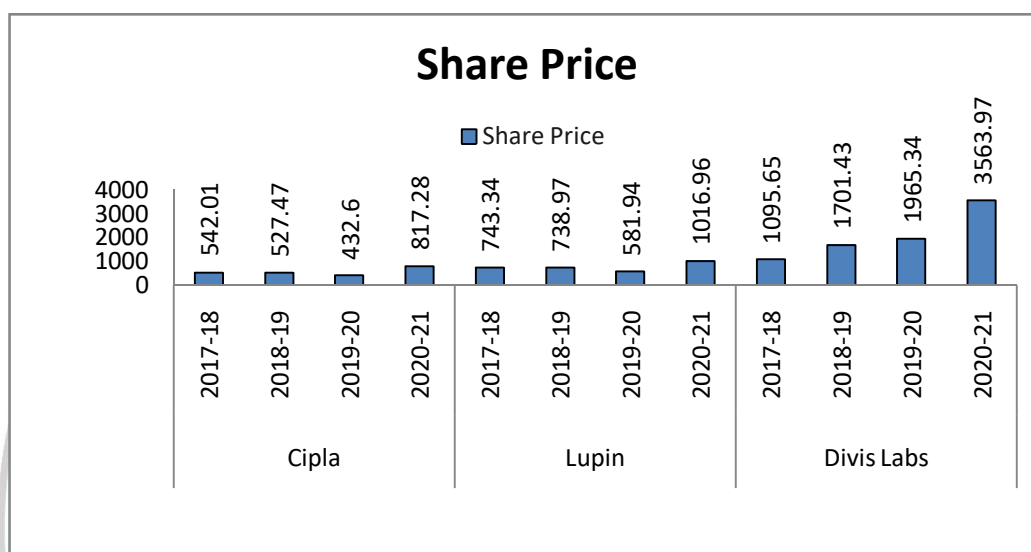
**Table 6: Share Price (VWAP)**

For calculation of P/E Ratio the researchers have taken share price of 31<sup>st</sup> March for the duration taken for study

Company	Year	Status	Share Price	% Change
<b>Cipla Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	542.01	-
	<b>2018-19</b>		527.47	-2.68
	<b>2019-20</b>		432.6	-17.99
	<b>2020-21</b>	<b>Post-event</b>	817.28	88.92
<b>Lupin Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	743.34	-
	<b>2018-19</b>		738.97	-0.59
	<b>2019-20</b>		581.94	-21.25

	<b>2020-21</b>	<b>Post-event</b>	1016.96	74.75
<b>Divis Laboratories Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	1095.65	-
	<b>2018-19</b>		1701.43	55.29
	<b>2019-20</b>		1965.34	15.51
	<b>2020-21</b>	<b>Post-event</b>	3563.97	81.34

(Share Price is taken from NSE Website)



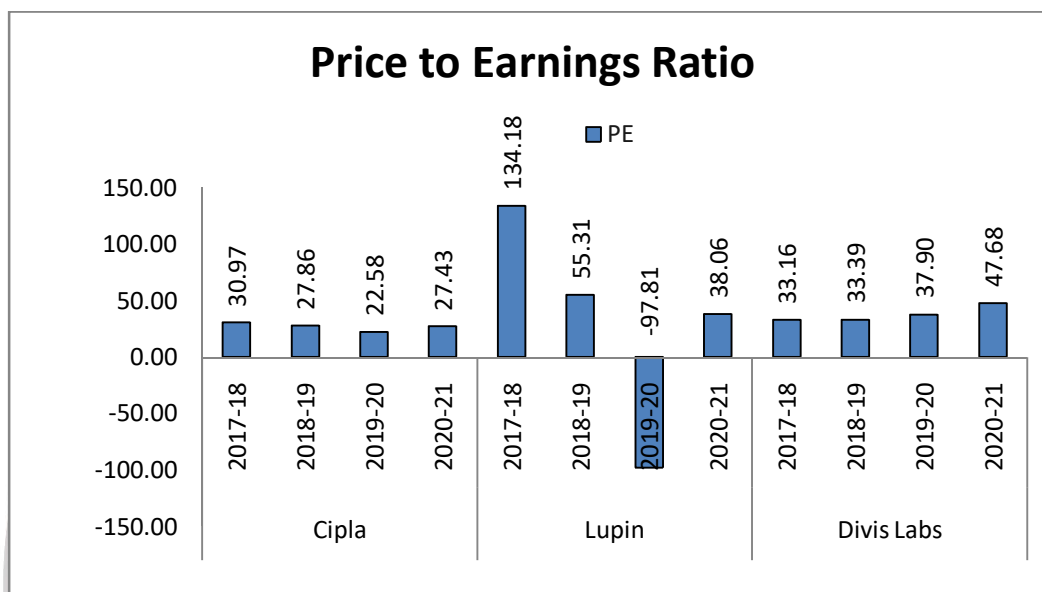
This value of share is calculated by Volume Weighted Average Price. The price of the shares of Cipla Ltd. is in the range of 400 to 600 in post event period while it was highly increased by 88.92% in the post event period. As well as Divis Laboratories Ltd. has the Price range between 1000-2000 up to year 2019-20, but it was increased up to 3564 in the year 2020-21. While Lupin Ltd.’s share price is between 550 and 750 which become high in the year 2020-21 by 74.75% due to pandemic situation in the economy.

**Table 7: Price to Earnings Ratio**

Company	Year	Status	P/E Ratio	% Change
<b>Cipla Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	30.97	-
	<b>2018-19</b>		27.86	-10.03
	<b>2019-20</b>		22.58	-18.97
	<b>2020-21</b>	<b>Post-event</b>	27.43	21.51
<b>Lupin Ltd.</b>	<b>2017-18</b>	<b>Pre-event</b>	134.18	-
	<b>2018-19</b>		55.31	-58.78
	<b>2019-20</b>		-97.81	-276.82
	<b>2020-21</b>	<b>Post-event</b>	38.06	1.39

Divis Laboratories Ltd.	2017-18	Pre-event	33.16	-
	2018-19		33.39	0.68
	2019-20		37.90	13.53
	2020-21	Post-event	47.68	25.79

(P/E Ratio is calculated by the researchers)



The price to earnings ratio is the ratio calculated for the valuation of the company. The above table shows these prices to earnings ratios of various companies. The Cipla Ltd.’s PE ratio goes on decreasing in pre event period, but it was reached to 27.43 in the year 2020-21. Divis Lab’s PE Ratio is also increases little bit in the pre event situation while it goes on increasing by 25.39% in post event year. On the other hand PE Ratio of Lupin Ltd. is negative in the year 2019-20 which is -97.81 had a huge boom to 38.06 in the post event period.

## 7. DISCUSSION:

The above results are calculated by performing various types of analysis using different methods. These results suggest that the Pharmaceutical Companies in India are experiencing tremendous growth due to COVID-19 pandemic. Profit for the year is increased by 59% for Cipla Ltd. and for Divis Laboratories Ltd profit is increased by 44%. On the other hand, Lupin Ltd. has seen the largest growth jumping from net loss in the financial year of 2019-2020 to net profit in the year 2020-2021, an increase of 551% in the net profit. Similar results are obtained by comparing the average VWAP of three years pre-event with average VWAP of post-event. Average VWAP is increased by more than 70% for all three companies calculated at the end of the financial year 2020-2021 i.e. 31 May 2021.



This trend is reflected in other parameters of fundamental analysis which are Diluted Earnings Per Share (EPS), Dividend Per Share (DPS), Return On Equity (ROE) and Price to Earnings Ratio (P/E Ratio). Increase in P/E is a clear indication that people are expecting these companies to perform well. All of this confirms that the pandemic is helping Pharmaceutical companies more or less to grow. Cipla Ltd. and Divis Laboratories Ltd. are experiencing good growth but Lupin Ltd. is experiencing abnormal growth. They managed to bounce back from the net loss as well as negative EPS, negative P/E and negative ROE toward a good financial condition after the disruption caused by COVID-19.

## 8. CONCLUSION:

In this pandemic the global economy fell like never before but, the Pharmaceutical Sector is currently booming because of it. Because of the pandemic people are looking at the Pharmaceutical sector for help and investors know that this will benefit this sector greatly. This research studied how the pandemic has affected not only the market performance of selected companies but also how their intrinsic value has changed due to it. The research has shown that all three companies have experienced above average growth after the pandemic and lockdown has begun.

Before the year of COVID-19 outbreak, all selected companies have experienced the lowest annual growth and in some cases negative growth as well. But after the pandemic situation got worse, the overall growth rate increased by a never before seen rate. The trend is clear; the Pharmaceutical sector is experiencing a growth period due to COVID-19. Some better than others but the consensus is showing an upward trend nonetheless.

This study was crucial to understand the effect on both the market performance as well as internal performance. It gave clear information about the extent of the growth that is experienced by these companies. But this study is limited to only three companies and it does not show exact performance of the entire Pharmaceutical sector. To gain understanding about other Pharmaceutical companies, similar types of study should be conducted. Having this knowledge is very helpful for making informed investment decisions. This study has a wide implementation for understanding and investing in the Pharmaceutical companies. It can be used for making decisions about investing in these Pharmaceutical companies.

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