# A Study of Measuring Covid-19 Impact on Stock Performance of Selected Sectors

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## ABSTRACT

Stock market is vulnerable in nature especially in developing economies which quickly get influenced from any uncertainty occur in any macroeconomic indicator or variable. The end of 2019 experienced the introduction of ever introduced human hazardous virus attack globally which not only hit the human life but badly impacted the businesses across the world. India too couldn't kept itself untouched, and beginning of 2020 brought unprecedented economic changes in the country. Long lockdown hit demand, production, investment etc. which in turn reflected in poor performance of stock market. The present research collect evidences of stock performance of selected sectors and analyze changes. Daily Nifty closing index (124 days pre & 124 days during Covid19 period) of five sectors viz. Infrastructure, Pharma, Auto, FMCG & Media are collected and a pre & post study is conducted using 'Paired T-test'. Pharma, FMCG & Media stock performance shows growth during Covid19 period whereas, Auto& Infrastructure reflect significant decline in their performance.

*Keywords: Stock Return, NSE, Stock Performance, Covid-19, Indian Stock Market.*

## INTRODUCTION

The world has experienced tough time due to covid19 pandemic, it has touched every spheres of human life. Looking at the market side, the global stock market get hit badly during this time. According to Anh&Gan (2020) increasing spread of covid19 significantly influenced the performance and returns. In a pre and during period study the authors observed the opposing effect. The global lockdown period was proven to be worst for all economies as the industrial production and other important sectors were shut down for long.Baker, et al. (2019) observed considerable movement in the stock returns after the news blow out about corona spread. The daily index deviate, most of them went down and recorded loss.

Velde (2020) revealed that, earlier also various flu spread across the world had impacted countries stock market returns and globally lowered down the investments. There were political, social and economic downturn across the world. Today, Covid19 again brought the same situation before the world wherein businesses across the world facing huge losses and their stock returns become stagnant or declined. Ahmed (2020) studied the Pakistan stock market performance during covid19 period. The study found that, covid19 spread and its daily positive cases has negative and significant influence on market. The moment cases increases daily stock return move downward. This trend, author observed across major economies. Hence, it is concluded that, the corona attack badly impacted the economies all over the world.

Ferguson (2020) added to this philosophy that global social crisis has power to influence stock market performance. There may be disparity across sectors, but overall the impact is full. The market sentiments also affected investors' behavior for fresh investments. The countries like India was badly hit by corona attack. The food inflation reaches to 30-40%, global prices went up and crosses 50k from 35k. Medical services and expenses turn into blast and government expenditure increased significantly. Davis, (2020) investigated the relationship between firm level risk exposure and stock price reaction during covid19. The risk bearing capacity of firms tackle the covid shock up certain level. But, in long run all have experienced the dark phase of the situation.

**REVIEW OF LITERATURE**

Onali (2020) investigated the impact of covid19 on US stock market and found that stock volatility was high during that period. The stock performance of almost all companies were shacking and at end went down. The overall return was negative and market was affected badly. Mckibbin& Fernando (2020) studied various dimensions of covid19 spread including social, economic and political. It has caused industries contraction almost all manners like- production, distribution and selling. This has caused lower market performance and made huge revenue loss to the investors. The stock returns are contracted and shrink to its lowest. This shows, impact of covid19 was significant on stock index.

Mckibbin&Triggs (2018) revealed that, covid19 attack smash the world almost every possible manner. Initially, the disruption happened in China quickly turned into global disaster. Talking specifically about 'auto industry' the global

producers stopped new assembly of vehicles as the global supply chain was at closure due to immense pressure of pandemic. The disruptive move of corona pandemic worsens the global demand for automotive products. This has decreased the global auto production as well as demand.

Ameex Technologies (2020) propound that, global shut down causes tremendous hike in pharmaceutical raw material which according to FDA comes from China and contributes to 13% of the total supply. It resulted into increased cost of medicines that inflated to final price of the product all over the world. Its impact reaches to Indian pharmaceutical too and here the price of required medicine shoot up significantly. But, despite of this, the consumers didn't compromise and made regular purchases of needed medicines. This didn't let nifty pharma to come down and good performance was recorded even in covid19 period.

Anand (2020) opined that FMCG sector was also shown great decline during the end of March but gradually when permission was given to essential services the sector started booming due to huge demand and bulk buying behavior. The consumers' spending tremendously increased which gave sharp hike in stock prices. Hence, during the covid19 period overall FMCG market shown considerable hike and good performance.

Farooqui (2020) found that, no sector was secured from the ill effect of covid19, even media industry found lots of hurdles in terms of job losses, low TRP and decline in stock return. At the initial level the industry too shaken badly but gradually with some liberty to people and slowly opening market gave pace to it. If we look at it in totality the media stocks have given considerable return over other industries. It has risen and performed well even in the turbulence time.

## OBJECTIVE

- To study the impact of 'Covid19' on Nifty stock performance of selected sectors using a pre & post analysis.

## RESEARCH METHOD

*Research Type-* The current study is descriptive in nature which investigate 'what' happened to nifty stock returns due to 'Covid19' attack. To make this study focused five selected sectors are identified and conducted a pre & post analysis using 248 days daily closing index of these sectors.

*Sampling Method*-The study uses secondary data collected from NSE India official website.

*Sampling Unit*- Total 248 days' daily closing index is recorded in which 124 days of pre Covid19 and 124 days' of during Covid19 are taken.

*Analysis Tool*- Paired T-test is used to analyze mean difference between pre & post data series.

## HYPOTHESES

*H01: There is no significant difference in the pre & during Covid19 Nifty Infrastructure stock returns.*

*H02: There is no significant difference in the pre & during Covid19 Nifty Pharma stock returns.*

*H03: There is no significant difference in the pre & during Covid19 Nifty Auto stock returns.*

*H04: There is no significant difference in the pre & during Covid19 Nifty FMCG stock returns.*

*H05: There is no significant difference in the pre & during Covid19 Nifty Media stock returns.*

## RESULT ANALYSIS

H01: There is no significant difference in the pre & during Covid19 Nifty Infra stock returns.

**Table 1- Paired Samples Statistics**

**Paired Samples Statistics**

|  |  | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | Pre_Covid_SP_Infra | 3.2553E3 | 124 | 164.41013 | 14.76447 |
|  | Post_Covid_SP_Infra | 3.0411E3 | 124 | 367.15379 | 32.97138 |

**Table 2- Paired Samples Test**

**Paired Samples Test**

| | | Paired Differences | | | | | | | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 95% Confidence Interval of the Difference | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | t | df | |
| Pair 1 | Pre_Covid_SP_Infra - Post_Covid_SP_Infra | 1.42319E1 | 440.83655 | 39.58829 | -64.13074 | 92.59445 | .359 | 123 | .020 |

Null hypothesis H01 is rejected, the sig. value for the test is observed 0.020 < 0.05. The test reveal that pre and during Covid19 nifty infra stock index differ significantly. The stock performance of 'nifty infra' deviate significantly during Covid19 period. The stock returns went down and produce losses to the investors. Hence, it is concluded that, Covid19 put significant negative impact on 'nifty infra' stock return.

H02: There is no significant difference in the pre & during Covid19 Nifty Pharma stock returns.

**Table 3- Paired Samples Statistics**

**Paired Samples Statistics**

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 2 | Pre_Covid_SP_Pharma | 1.0733E4 | 124 | 930.33386 | 83.54645 |
| | Post_Covid_SP_Pharma | 8.0655E3 | 124 | 631.56404 | 56.71613 |

**Table 4- Paired Samples Test**

**Paired Samples Test**

| | | Paired Differences | | | | | | | Sig. (2-tailed) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | df | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Pre_Covid_SP_Pharma - Post_Covid_SP_Pharma | -2.66734E3 | 1086.22647 | 97.54602 | -2860.42830 | -2474.25558 | -27.344 | 123 | .000 |

Null hypothesis H02 is rejected, the test is found significant at 5% level of significance. The test reveal that 'nifty pharma' stock index differ significantly. The mean values reflect that, during the covid19 period 'nifty pharma' went up and given tremendous growth. There is a positive impact of Covid19 on 'nifty pharma' stock performance.

H03: There is no significant difference in the pre & during Covid19 Nifty Auto stock returns.

**Table 5- Paired Samples Statistics**

**Paired Samples Statistics**

| | | Mean | N | Std. Deviation | Std. Error Mean |
| --- | --- | --- | --- | --- | --- |
| Pair 3 | Pre_Covid_SP_Auto | 7.2473E3 | 124 | 1246.20339 | 111.91237 |
| | Post_Covid_SP_Auto | 7.2031E3 | 124 | 816.42209 | 73.31687 |

**Table 6- Paired Samples Test**

**Paired Samples Test**

| | | Paired Differences | | | | | | | Sig. (2-tailed) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | df | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Pre_Covid_SP_Auto - Post_Covid_SP_Auto | 4.42383E1 | 1882.84700 | 169.08465 | -290.45439 | 378.93101 | .262 | 123 | .794 |

Null hypothesis H03 is accepted, the test is found not significant at 5% level of significance. The test reveal that 'nifty auto' stock index do not differ significantly. The mean values reflect that, even during the covid19 period 'nifty auto' didn't experience much movement. Covid19 has impacted the auto sector as the mean value during Covid19 is found lesser than pre covid19 period. Hence, 'nifty auto' shows little decline in the returns but not statistically significant.

H04: There is no significant difference in the pre & during Covid19 Nifty FMCG stock returns.

### Table 7- Paired Samples Statistics

### Paired Samples Statistics

|  | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| Pair 4   Pre_Covid_SP_FMCG | 2.2698E4 | 124 | 1982.32815 | 178.01832 |
| Post_Covid_SP_FMCG | 2.9942E4 | 124 | 1374.54535 | 123.43782 |

### Table 8- Paired Samples Test

### Paired Samples Test

|  | Paired Differences | | | | | | | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
|  | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | df | |
|  |  |  |  | Lower | Upper |  |  |  |
| Pair 1   Pre_Covid_SP_FMCG - Post_Covid_SP_FMCG | -2.43963 E2 | 2627.75227 | 235.97912 | -711.06870 | 223.14370 | -1.034 | 123 | .030 |

Null hypothesis H04 is rejected, the test is found significant at 5% level of significance. The test reveal that 'nifty FMCG' stock index differ significantly. The mean values reflect that, during the covid19 period 'nifty FMCG' went up and reflect tremendous growth. There is a positive impact of Covid19 on 'nifty FMCG'stock performance. Covid19 proves to be influencing factor for FMCG sector in India.

H05: There is no significant difference in the pre & during Covid19 Nifty Media stock returns.

## Table 9- Paired Samples Statistics

### Paired Samples Statistics

|  | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| Pair 5   Pre_Covid_SP_Media | 1.3991E3 | 124 | 162.04870 | 14.55240 |
| Post_Covid_SP_Media | 1.6177E3 | 124 | 315.52197 | 28.33471 |

## Table 10- Paired Samples Test

### Paired Samples Test

|  | Paired Differences | | | | | | | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
|  | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | df | |
|  |  |  |  | Lower | Upper |  |  |  |
| Pair 1  Pre_Covid_SP_Media - Post_Covid_SP_Media | 2.18569E2 | 435.03356 | 39.06717 | 141.23829 | 295.90042 | 5.595 | 123 | .000 |

Null hypothesis H05 is rejected, the test is found significant at 5% level of significance. The test reveal that 'nifty media' stock index differ significantly. The mean values reflect that, during the covid19 period 'nifty media' went up and reflect tremendous growth. There is a positive impact of Covid19 on 'nifty media'stock performance. Covid19 proves to be influencing factor for media sector in India.

## FINDINGS & CONCLUSION

Covid19 has put significant impact on global stock markets including India. It has influenced almost all sectors in some or the other ways. Some sectors affected negatively and some positively. Any many sectors are there which neither affected positively nor positively but their performance become stagnant. In the current research, mixed impact have been observed like-

'Nifty Infra' shows negative impact as the nifty infra stock performance went down during the covid19 period.

'Nifty Pharma', shows positive impact on its performance. The growth is found magnificent, during the covid19 period pharmaceutical companies have recorded tremendous growth. Hence, their stock returns also influenced significantly and offered huge returns.

'Nifty Auto', shows negative impact on its stork return. During the covid19 period auto sector was affected badly as there was significant downfall in the demand. The adverse market condition hit this sector badly. As a result, stock return recorded loss in the market.

'Nifty FMCG', shows positive growth in their returns as the demand for FMCG grows during the covid19 period. Customers had tendency of bulk buying during turbulence time, as a result during covid19 people exceed the demand which increases the industry performance.

'Nifty Media', also shows positive growth as the nifty media recorded significant growth in its index. Media industry has earned huge popularity and was in demand during the covid19 period. Hence, this period proven to be good for media industry.

With reference to the above findings, the current study concluded that, covid19 shown ultimately adverse impact for the entire economy. Despite of having positive impact on some industries the overall impact is observed to be bad and negative.

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