# Region Wise Stock Market Performance in India and Covid-19: A Comparative Evaluation Amid Pre and During Covid Era

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## Abstract

This paper attempts to investigate the sectoral wise stock market behavior pre and during the COVID period. To this end, the daily closing prices of eight sectoral indices of Nifty are taken. The pre-COVID period was taken as the FY 2019-20 and during COVID period was taken as the FY 2020-21. In this paper, we investigate and compare the market behavior of these sectors before and during the COVID period. All indices had experienced sudden volatility in March 2020 when the lockdown was announced, all the sectors recovered from the losses during the financial year 2020-21 and exhibited a positive return. The volatility was also found to be lower in FY 2020-21.

## INTRODUCTION

The economic chaos linked with the COVID-19 pandemic has an extensive impact on financial markets. To contain the spread of virus, strict containment measures have severely affected global economic activities. The prolonged and strict lockdown affected the country's economy which had an impact on the stock market. Previous studies show that unexpected terrorist attacks and various other pandemics such as SARS had a severe impact on the economic and financial conditions of individuals (Nippani and Washer 2004). Such events instill a sense of fear and panic, creating an imbalance in supply and demand, money supply and labor movements. The United Nations have reported a decline to almost 3% in India's economic growth in 2020, as lockdowns and other control efforts reduced domestic consumption. As per these evaluations, India recorded an upsurge of 1.1% in the second half of FY21.

The bombay stock exchange (BSE), SENSEX and national stock exchange (NSE) NIFTY are the benchmark indices of India. These indices will exhibit an exact picture of the market sentiments of the Indian economy. Any prudent investor will closely monitor these indices for their investment decisions.

This study is focused on the market behavior of the sectoral indices of NSE NIFTY. The sectoral indices will reflect the performance of the sectors during the

period. The pandemic has affected various sectors in different ways. The adoption of digital technologies and work-from-home culture have benefitted IT sector. Further, the pharma sector was categorised as essential services and suffered relatively fewer disruptions during the lockdown. In this scenario, this study is an attempt to analyze the sectorwise market behavior in India. A comparative study of pre and during COVID-19 is intended to study the magnitude of the impact of a pandemic.

## Review of Literature

(Chandran 2021) investigated the impact of COVID-19 on the Nifty Indices. The study looked at the performance of several Nifty sectors month by month. According to the analysis, the fast moving consumer goods (FMCG) and media industries fared the worst during the COVID-19 pandemic, while the pharmaceutical and banking industries fared better. The paper looked at the indices for the fiscal year 2020-21 and recommended the best firms for investors to invest in.

(Mishra and Mishra 2020) analyzed the stock market behavior of 12 Asian nations during the corona pandemic. The study used econometric methodologies such as the GARCH (1,1) model, event study method, and panel fixed effect regression model. The rapid spread of coronavirus had a substantial negative influence on Asian stock markets, revealing that pandemics produce spirals of market uncertainty, weakening investor attitudes and causing market volatility. The analysis found that stock market anomalous returns became negative the day after the global notification of the risk of COVID-19 spreading quickly. The study found evidence that increasing COVID instances, oil price drops, and currency rate volatility negatively impacted market confidence.

Sikdar 2021, analyzed the impact of the pandemic on the economy as a whole, and researchers compared the number of transactions. The research used 50 BSE-listed companies from a variety of industries, including various sectors. The arithmetical mean and standard deviation of daily return as a measure of volatility were compared using a paired sample t-test. The analysis found a substantial variation in average daily share price, average daily return, daily number of transactions, and volatility for most industries.

Bora and Basistha 2020, analyzed the stock market volatility during the COVID-19 pandemic with the help of GARCH model. The daily closing prices of Nifty and Sensex has been used for the study and the results revealed significant volatility during the COVID period. The returns were also found to be higher during the pre-COVID period.

Shankar and Dubey 2021, studied the stock market behaviour prior to the COVID-19 pandemic (08/07/2019 to 10/03/2020) and during the pandemic (11/03/2020 to 07/07/2020). The researchers looked at the performance of the Indian stock market by calculating average returns and trading volume. The data demonstrated that the pandemic had a consistent impact across all industries. In terms of average returns, however, the benchmark index stayed stable. The market as a whole saw lower returns and more liquidity, which can be explained by lower market volatility.

From the literature review, it was found that a sectoral performance of the stock market is needed, which will help the investors understand the market better and make wise investment decisions.

## The objective of the study

- To understand the market behavior of various sectoral indices of nifty before and during COVID 19

## Methodology

**Data description:** The study is based on secondary data taken from the website of NSE. The eight sector indices viz; Nifty Auto, Nifty Bank, Nifty FMCG, Nifty IT, Nifty Media, Nifty Metal, Nifty Pharma and Nifty Realty are taken for the study. The pre-COVID period was taken as the FY 2019-20 and during COVID period was taken as the FY 2020-21.

**Tools used for the study:** Descriptive statistics have been used to analyze the market behavior before and during COVID-19. The study is analyzed on the return of the series, which is generated using the following formula:

$$\text{Return}_t = \frac{P_t - P_{t-1}}{P_{t-1}} \quad ....(1)$$

**Table 1:** The descriptive statistics are summarised

*Pre COVID*

|  | *Nifty Auto* | *Nifty Bank* | *Nifty FMCG* | *Nifty IT* | *Nifty Media* | *Nifty Metal* | *Nifty Pharma* |
|---|---|---|---|---|---|---|---|
| Mean | -0.002 | -0.002 | -0.001 | -0.0008 | -0.003 | -0.003 | -0.001 |
| Median | -0.003 | -0.001 | -0.0003 | 0.0004 | -0.001 | -0.002 | -0.0006 |
| Maximum | 0.099 | 0.083 | 0.082 | 0.090 | 0.077 | 0.075 | 0.051 |
| Minimum | -0.138 | -0.167 | -0.106 | -0.096 | -0.103 | -0.116 | -0.089 |
| Std. Dev. | 0.020 | 0.021 | 0.014 | 0.017 | 0.022 | 0.023 | 0.015 |
| Skewness | -1.086 | -1.982 | -1.218 | -1.267 | -0.745 | -0.840 | -1.053 |
| Kurtosis | 13.797 | 20.692 | 22.538 | 15.849 | 6.148 | 7.262 | 9.822 |
| Jarque-Bera | 1238.134 | 3355.624 | 3957.269 | 1751.033 | 123.814 | 214.308 | 520.385 |
| Probability | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| During COVID | | | | | | | |
|  | Nifty Auto | Nifty Bank | Nifty FMCG | Nifty IT | Nifty Media | Nifty Metal | Nifty Pharma |
| Mean | 0.003 | 0.003 | 0.001 | 0.003 | 0.002 | 0.004 | 0.002 |
| Median | 0.003 | 0.003 | 0.001 | 0.003 | 0.002 | 0.004 | 0.002 |
| Maximum | 0.104 | 0.105 | 0.083 | 0.778 | 0.067 | 0.079 | 0.104 |
| Minimum | -0.072 | -0.832 | -0.037 | -0.047 | -0.067 | -0.079 | -0.048 |
| Std. Dev. | 0.019 | 0.023 | 0.012 | 0.016 | 0.020 | 0.021 | 0.017 |
| Skewness | 0.650 | 0.227 | 1.412 | 0.426 | -0.113 | -0.162 | 1.012 |
| Kurtosis | 8.695 | 5.816 | 13.108 | 5.123 | 4.104 | 4.587 | 8.591 |
| Jarque-Bera | 352.597 | 84.075 | 1138.699 | 54.038 | 11.152 | 27.103 | 366.105 |

Source: Prepared by the Researcher

Where, return is the daily return of indices for time t, $P_t$ is the closing price of the indices in the time t and $P_{t-1}$ is the closing price in the time period t -1.

# Analysis and Results

From the table above, all the indices displayed a negative return during the pre-COVID period. Even though all indices had experienced sudden volatility in March 2020, when the lockdown was announced, all the sectors recovered from the losses during the financial year 2020-21. All the sector indices have shown a posted a positive return during the financial year 2020-21. The pre-COVID period showed negative skewness for all the indices. The negative skewness indicates the probability of an investor having frequent small gains and few large losses during the period. The period during COVID showed positive skewness for all indices except for Media and Metal. The positive skewness showed
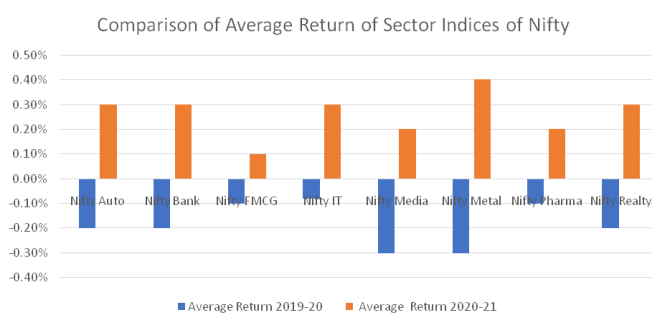


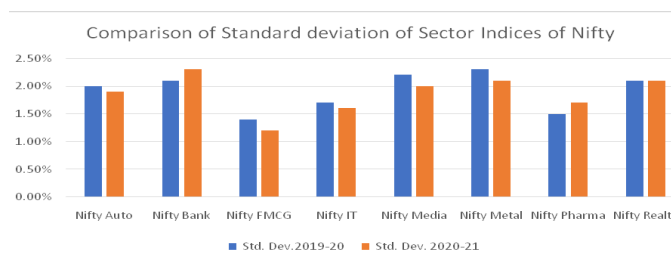**Chart 1:** Comparison of Average Return of Sector Indices of Nifty



**Chart 2:** Comparison of Standard deviation of Sector Indices of Nifty

that the investor could have frequent small losses and few large gains during the period. The positively skewed distribution is generally desirable by an investor as the probability to gain huge profit can cover frequent small losses. The kurtosis value of all indices was higher during the pre-COVID period than during the COVID period, according to the analysis. The greater the kurtosis value, the greater the financial risk.

The average return for all indices was negative for all indices for the financial year 2019-20. The lowest return was for Nifty Media and Nifty Metal. During the financial year 2020-21, Nifty Metal posted the highest return of 0.40% followed by Nifty Auto, Nifty Bank and Nifty Realty.

The above chart shows the standard deviation of the selected indices before and pre COVID. All the indices except Nifty bank exhibited a fall in the standard deviation during the COVID period. A lower standard deviation means the prices are less volatile and investments are less risky.

# Conclusion

The study analyzed the market behavior of Nifty indices before and during COVID-19. The descriptive statistics revealed that negative returns across all the indices before COVID-19. A sudden spark of volatility was exhibited during March 2020 during the announcement of the lockdown. After that the market showed a sign of recovery and revealed a positive return across all the indices. The standard deviation was also found to be lower in COVID period in all indices except Nifty Bank. From the study it can be concluded that all the indices recovered from the loss suffered from the lockdown and exhibited a bullish trend in the FY 2020-21.

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