Causality analysis of stock market during COVID-19 Lockdown Period in India

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ABSTRACT

The examination researches the impact of the lockdown period caused by the COVID-19 to the stock market of India. The investigation looks at the degree of the impact of the lockdown on the Indian securities exchange and whether the market response would be the equivalent in pre-and the post-lockdown period brought about by COVID-19. A sample of top10 stocks companies listed on Bombay Stock Exchange (BSE) are selected for the purpose of the study. The sample period taken for the study is 35 days (24 February-17 April, 2020). An event window of 35 days was taken with 20 days prior to the event and 15 days during the event. The event being the official announcement of the lockdown. The study finds evidence of a positive AR around the present lockdown period and confirms that lockdown had a positive impact on the stock market performance of stocks till the situation improves in the Indian context.

Keywords: *COVID-19, Event study, Lockdown period, Stock Market, Abnormal Return.*

1.0 Introduction

The episode of COVID-19 has caused a pandemic of the respiratory sickness (COVID-19) for which immunizations and directed therapeutics for treatment are inaccessible (Wang et al. 2020). The pandemic caused significant worry for public wellbeing just as the economy of the world. The COVID-19 is the abbreviation utilized for Corona Virus Disease 2019. This infection causes a pneumonia of obscure reason previously recognized in Wuhan, China, and first answered to the World Health Association (WHO) on 31st December, 2019. The World Wellbeing Organization reported the official assignment of this savage infection on February 11, 2020. On March 11, it proclaimed COVID-19 a pandemic, highlighting more than 118,000 instances of the COVID-19 ailment in 110 nations and regions around the globe and the continued danger of further worldwide spread. (Time 2020).

India is the nation with the second biggest populace on the planet. According to World Bank information, India is home to 176 million needy individuals and furthermore has least positions in tidiness furthermore, clinical offices everywhere on the world, and it will turn into a debacle if COVID-19 is spreading to its populace. In any case India was not a long way behind, and the principal case was accounted for on 30 January, 2020; by 17 April 2020, 14,376 individuals passed on (Deccan Envoy 2020). Without better ways of life and public wellbeing, it was significant worry for the Government of India under Prime Minister Narendra Modi, who reported and requested a cross country lockdown for 21 days on 24th March, 2020 for forestalling the spreading of the infection, and on 14 April, the Prime Minister broadened the cross-country lockdown until 3 May. This Pandemic COVID-19 influenced the economies of the world and India was additionally among those countries. Due to the lockdown requested by the public authority of India, everything came to end in this busiest nation. The slamming of the worldwide market economy, significant drop in oil costs, and expanding joblessness are a portion of the effects of the pandemic Coronavirus that influenced practically all nations on the planet. India was additionally not a long way behind to get the effect of COVID-19 on their financial development, advancement, economy and stock market.

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India has a strong securities exchange that responds a lot well to the worldwide circumstance. The primary case was accounted for in India on 30th January and the lockdown requested on 24 Walk, 2020, that was a hole of very nearly 53 days that was too a matter of concern; imagine a scenario in which the Government had requested the. Lockdown prior? It might have eased back the spreading of the infection in the populace. How did the securities exchange react to this cross-country lockdown? In this occasion study, the impact of the lockdown because of COVID-19 on the securities exchange is clarified with the semi-solid type of market effectiveness speculation (Fama, 1970). They are called occasion contemplates (Fama, 1991). This occasion study estimated how quickly security costs react to declarations of the lockdown because of COVID-19.

2.0 Literature Review

Since, the COVID-19 was acknowledged pandemic by WHO, there is a lack of studies associated to COVID-19 impact on stock market, as it is a new global advance. Some research has been supported out to scrutinize the impact of COVID-19 on different economies, but the number is still small. Ramelli and Wagner (2020) observe the market reactions to the COVID-19 on the international trade and financial policies of the firm and found a negative consequence for internationally-oriented US firms, especially those with China exposure and the US; markets moved feverishly when the virus spread across Europe and the US. The author concluded how the health crisis instigated the economic crisis that enlarged through numerous financial channels.

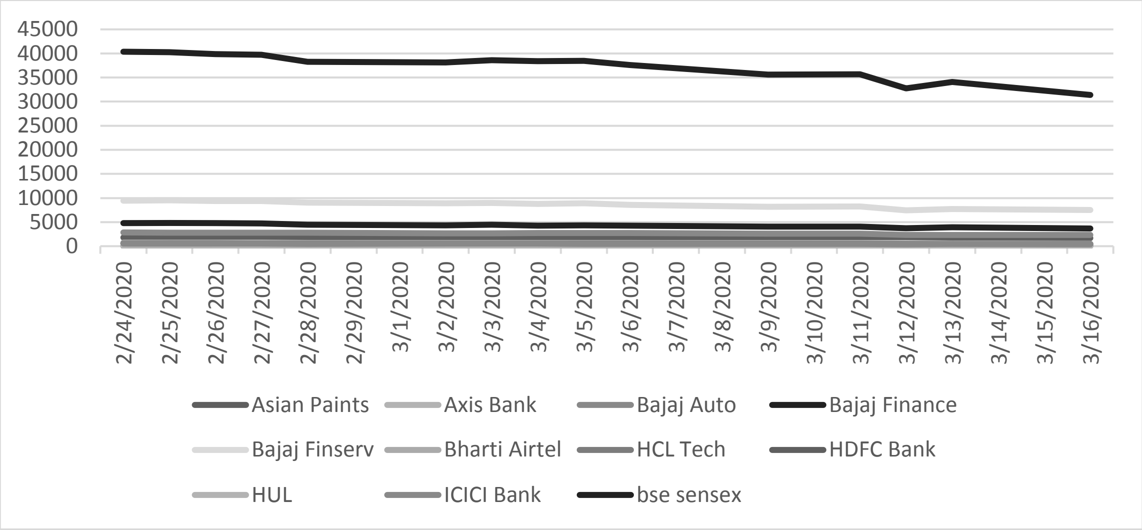
Jim, (2020), contended that because of social separating measure the profitability of the organizations gets antagonistically influenced, and it prompts a lessening in income, higher working expense, and income difficulties to the organizations. In Europe, the Financial Times Stock Exchange 100 list saw a sharp one-day fall since 1987 (BBC News, 2020).

3.0 Data and Methodology

The study is based on secondary sources of data. Data on daily closing prices of indices Sensex have been collected from the official site of BSE. For this study, the period before this date is considered as the pre-COVID-19 era and the period after this date (24th Feb to 17th March, 2020)is considered as during the COVID-19 era. To analyze the effect of COVID-19 on the stock market volatility GARCH model was used.

4.0 Discussion and Analysis

The chart below shows the trend of BSE and the selected stock returns during the study period We also try to examine the behavior of the return series data by using BSE Sensex and NSE Nifty. The Examination result pointed out non-normal distribution and volatility clustering. The term volatility clustering refers to the fact that large changes move toward in bulks.



(Author's own calculation)

To check the stationarity of the stocks and BSE, we perform ADF and PP stationarity tests. The result presented in Table: 1 revealed that the data are non-stationary in level form, hence the null hypothesis is accepted

Table: 1 Result of unit root statistics

			Cross-	
Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-12.5115	0.0000	11	142
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-11.3924	0.0000	11	142
ADF - Fisher Chi-square	135.206	0.0000	11	142
PP - Fisher Chi-square	145.399	0.0000	11	143
** Probabilities for Fisher tests are computed using an asymptotic Chi				
-square distribution. All other tests assume asymptotic normality.				

(Author's own calculation)

Table: 2 Result of GARCH model with BSE Sensex

Null Hypothesis:	Obs	F-Statistic	Prob.
BSE_SENSEX does not Granger Cause BSE_STOCKS	13	1.52218	0.2753

BSE_STOCKS does not Granger Cause BSE_SENSEX		2.42867	0.1499

(Author's own calculation)

Table: 2 presents the result of GJR GARCH with BSE. It can be seen that BSE Sensex does not cause the returns for the stocks and neither the BSE Stocks cause BSE Sensex.

5.0 Conclusion

In this study, the data was investigated to find the effect of COVID-19 on the performance of BSE ; the stock market of India-. GJH GARCH model is used to test the volatility in the stock market by taking the two time periods, before and after 1st positive COVID-19 cases in India(24th Feb to 17th March, 2020). These two periods are taken as the dependent variable and per day closing price of BSE indices are considered as the independent variable. The result shows that the stock market especially the BSE Sensex become volatile during the pandemic period., it was also found that there is no such significant impact of the COVID-19 period on the volatility of NSE stock prices.

References

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