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NATIONWIDE LOCKDOWN AND INDIAN STOCK MARKET

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ABSTRACT

Indian capital market is a market where new shares are issued, existing shares are traded and various other types of financial instruments are dealt. The capital market ensures liquidity to the company and the investors, by providing the facility of exchange of shares and raising capital through IPO. Shares are issued at their face value or premium value and are traded at their market price. The market price of shares implies the market value of the company which depends upon its performance. The increase in the market value of the company increases its market capitalisation. Market capitalisation is the total value of the company which is determined by multiplying the share price with the total number of outstanding shares of the company. In India, market capitalisation of companies decides whether a company is small-cap or mid-cap or large-cap company. At the end of December 2019, an unanticipated disease Coronavirus (Covid19) spread world-wide and following which Prime Minister of India Narendra Modi imposed a nationwide lockdown on 24th march of 2020 in India for 21 days which resulted in disorderly market condition. The study is conducted to investigate the influence of nationwide lockdown on large-cap, mid-cap and small-cap companies. The event study methodology is one of the main techniques used to measure any abnormal return of the stock or index and hence has been applied in the present study. The study has used 41 days event window period and 200 days as estimation period. The results based on the testing of hypothesis shows clearly that the nationwide lockdown and performance of the stock exchange has a strong relation and the impact of the event was different on classified capitalised companies from large-cap to small-cap companies. The event affected the indexes unevenly.

Key words: Capital Market, Market capitalisation, Nationwide lockdown, Covid19, Event Study

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1. INTRODUCTION

Stock market or Stock exchange is a market where the buyers and sellers trade various securities of financial market. Money Market and Capital Market are two financial markets, where financial instruments are traded. Short term instruments are dealt in money market whereas long term instruments are dealt in capital market. Indian capital market is a market where new shares are issued, existing shares are traded and various other types of financial instruments are dealt in. In India, NSE and BSE are two major exchanges where the shares are bought and sold. The shares of companies are traded where they are listed. Listing means that the shares of the company are available for trade in the stock exchange. The capital market ensures liquidity to the company and the investors, by providing the facility of exchange of shares and raising capital through IPO**.** Shares are issued at their face value or premium value and are traded at their market price. The market price of shares implies the market value of the company which depends upon its performance, how well the company is performing. The increase in the market value of the company increases its market capitalisation. Market capitalisation is the total value of the company which is determined by multiplying the share price with the total number of outstanding shares of the company. Increase in market capitalisation assists the company to raise additional capital or raise loans or issue debentures. In India, market capitalisation of companies decides whether a company is small-cap or mid-cap or large cap-company. There is no statutory definition for the classification of large-cap, mid-cap and small-cap companies. However, as per SEBI circular of mutual fund schemes, top 100 companies are large-cap companies, from 101th to 250th companies are mid-cap companies and from 251th company onwards are small-cap companies in terms of full market capitalisation. Though, increase in share price of all types of companies depends upon its performance but if there is a sudden disruption in the market the impact on the companies vary from large-cap to small-cap companies. The recovery from the disruption may also vary from large-cap to small-cap companies. Stock market is very sensitive to the conditions prevailing in the market. Any crash in the ongoing stock market directly relates to the market disruption. It has been seen over the years that any unanticipated event impacts the volatility of the stock market to the large extent. At the end of December 2019, an unanticipated diseases Corona virus (Covid19) spread all over the world. It was first originated in Wuhan, China and within few days it spread all across the world. In India the first case was reported on 30th January, 2020 and since then it kept on increasing which created wide spread panic among the people. On 24th March, PM Narendra Modi imposed a nationwide lockdown for 21 days which resulted in disorderly market condition. Each and every sector was adversely affected even Indian capital market was not an exception. The various broad market indexes in the National stock exchanges are Nifty 50, Nifty next 50, Nifty 100, Nifty 200, Nifty 500, Nifty mid-cap 50, Nifty mid-cap 100, Nifty Full mid-cap100, Nifty small-cap 100, Nifty mid-cap 150, Nifty small-cap 50, Nifty small-cap 250, Nifty Full small-cap 100, Nifty mid-small 400, and Nifty large-midcap 250, which are calculated to measure the performance of certain set or certain group of companies or the exchange as a whole. Among these indexes, the stock return of Nifty 50 index is considered as a barometer to measure the performance of companies listed in NSE India as it represents top 50 companies. In the present study, the stock return for the Indexes Nifty 100, Nifty mid-cap 150 and Nifty-small cap 250 are taken with an intention to measure the performance of large market capitalisation companies, mid market capitalisation companies and small market capitalisation companies during the period of the lockdown. Nifty 50 have been taken as base for the calculation of market return. Nifty 100 index represents top 100 diversified companies with largest market capitalisation which tracks the behaviour of Nifty 50 and Nifty Next 50 indexes. The Nifty Mid-cap 150 index represents the next 150 companies of mid market capitalisation and the Nifty Small-cap 250 index represents 250 companies of small market capitalisation. These three indexes represent

companies under Nifty 500 index consisting 95.2 % of companies in terms of market capitalisation and thus included in the study to measure the impact of Covid19 on marked based companies on national stock exchange.

2. REVIEW OF LITERATURE

Binder (1998) in his article sheds light on event study methodology; the researcher discusses the beginning of event study methodology with FFJR (1969) and focuses on how the technique can be applied to calculate abnormal returns on the stock prices due to any event.

3. OBJECTIVES OF THE STUDY

The objective of the study is to investigate the influence of nationwide lockdown on the performance of large-cap, mid-cap, and small-cap companies and also to see whether there is any deviation of the impact.

4. HYPOTHESIS OF THE STUDY

Hypothesis of the study:

H_0 = There is no significant impact of nationwide lockdown on performance of Nifty 100, Nifty Mid-cap 150 and Nifty Small-cap 250 indexes.

H_1= There is significant impact of nationwide lockdown on performance of Nifty 100, Nifty Mid-cap 150 and Nifty Small-cap 250 indexes.

5. RESEARCH METHODOLOGY

The study is exclusively based on secondary data. Closing price data has been collected for Nifty 50, Nifty 100, Nifty mid-cap 150 and Nifty small-cap 250 from the National stock exchange of India (NSE) website for the period from 3rd May 2019 to 27th April 2020. Event study technique has been applied to analyse the impact of the event on Nifty 100, Nifty mid-cap 150 and Nifty small-cap 250 indexes. Here the announcement of nationwide lockdown has been taken as an event for the study. The event date was 24th March of 2020 which is denoted by '0' day. Event window period for (-20, +20) event day has been taken. Window estimation of 200 days has been taken to compute the estimated returns. Stock return, market return, normal return, abnormal return, cumulative abnormal return, and test statistic has been calculated for the study.

Stock return and market return has been calculated by considering the changes in today's closing price in relation to the previous closing price.

$$\textbf{Return} = (P_t - P_{t-1})/P_{t-1} \quad (1)$$

Where,

P_t= closing price of today

P_{t-1}= previous day closing price

The following is the formula for calculation of normal return-

$$\overleftrightarrow{R}_i = R_f + \beta_i\,[\overleftrightarrow{R}_m - R_f] \quad (2)$$

$\overleftrightarrow{R}_i$=stands for normal return

R_f= expected return (Intercept)

β_i = expected risk (Slope)

$\overleftrightarrow{R}_m$ = index return

After calculating normal return, the difference between stock return and normal return is identified as abnormal return and then cumulative abnormal return for the window period (-20, +20) are calculated.

For the purpose of testing the hypothesis two tailed Z test has been used. Z test are usually used when the sample size is more than 30. And 5% level of significance has been used to test the hypothesis. If the value of test statistics is greater than the critical value which is 1.96, we reject the null hypothesis and accept the alternative hypothesis.

6. DISCUSSION

The event of lockdown has impacted the index of the companies listed in the stock exchanges which can be visible in the graphs. The graphs show the movement of the market indexes which are calculated to measure the performance of various companies which are grouped into various categories based on their market capitalization. The fig. 1 shows the movement of 242 days in total including the period of pre event days and post event days.

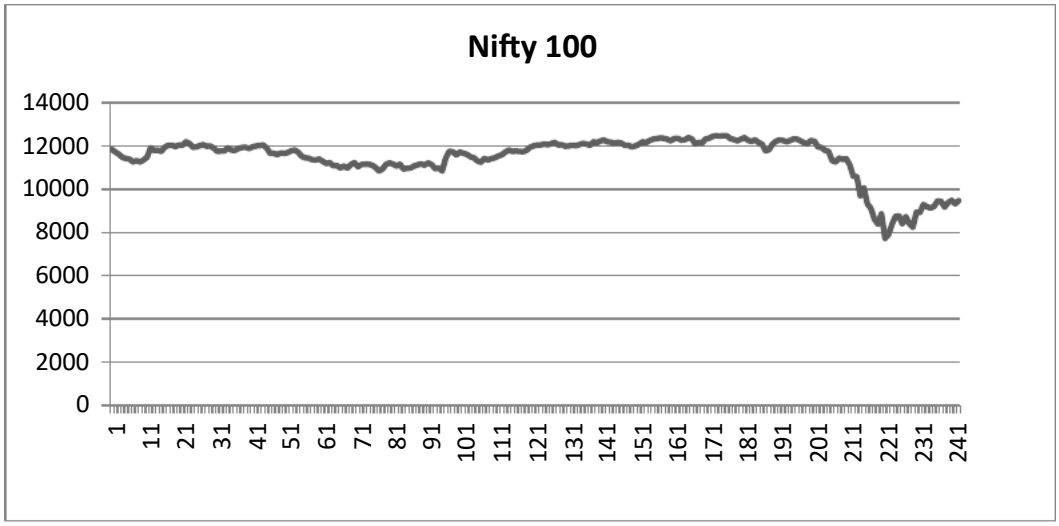

Figure 1 Graph showing the movement of Nifty large-cap index or Nifty 100**.**

source: national stock exchange of India

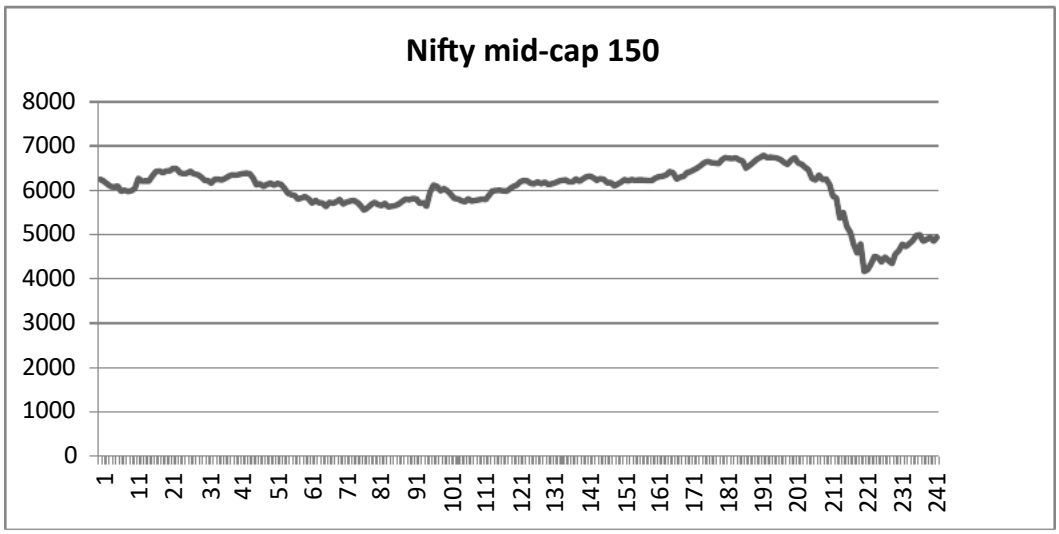

Figure 2 Graph showing the movement of Nifty mid-cap index or Nifty mid-cap 150**.**

source: national stock exchange of India

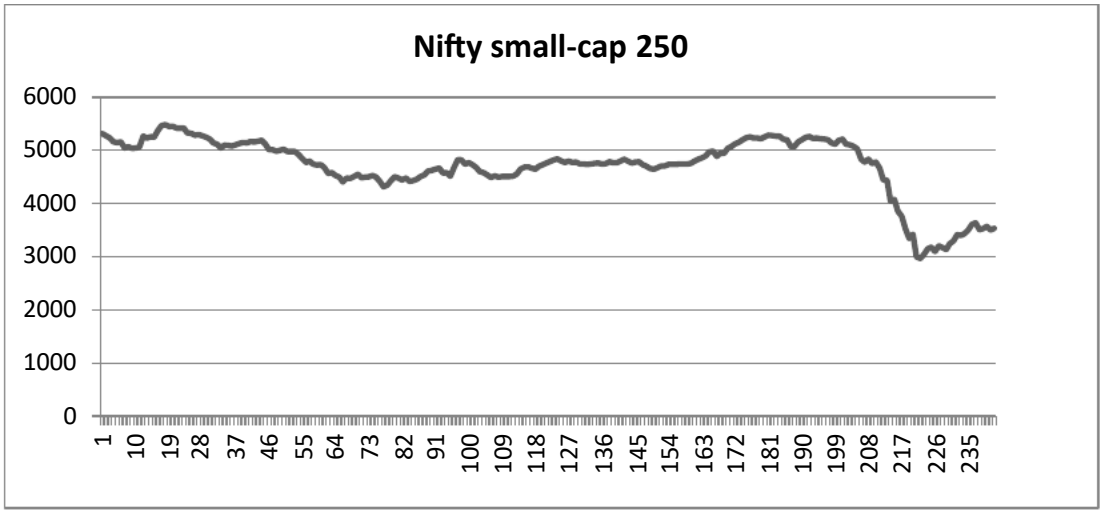

Figure 3 Graph showing the movement of Nifty small-cap index or Nifty small-cap 250**.**

source: national stock exchange of India

From the Fig.1, Fig.2, Fig.3, we can see that the normal movement of the market indexes of Nifty 50, Nifty mid-cap 150, Nifty small-cap 250 shows downward trend which indicate that the nationwide lockdown has impacted the normal trend of the market.

Table 1 Intercept, slope and standard error calculated for Nifty 100, Nifty mid-cap 150 and Nifty small-cap 250**.**

	Nifty 100	**Nifty mid-cap 150**	**Nifty small-cap 250**
Intercept (Alpha)	+0.000004	+0.000227	-0.000239
Slope (Beta)	+1.000710	+0.941346	+0.877477
Standard error	+0.000575	+0.004593	+0.005572

source: as computed and compiled by author

The above table contains intercept, slope and standard error value for Nifty 100, Nifty mid-cap 150 and Nifty small-cap 250 indexes. This data has been used to calculate the test statistics and testing of the hypothesis.

Table 2 T-statistics value of Nifty 100, Nifty mid-cap 150 and Nifty small-cap 250.

Indexes	**-20 day**	**-10 day**	**0 day**	**+10 day**	**+20 day**
Nifty 100	-.001	+3.177	+3.049	+13.757	+14.706
Nifty mid-cap 150	+0.315	-4.855	-31.024	-29.966	-26.238
Nifty small-cap 250	+0.430	-0.559	-13.852	-18.192	-15.555

source: as computed and compiled by author

The above table shows the t-statistics value for the window period (-20, +20 days). The data indicates that the test statistics value of the three indexes at -20th day is less than the critical value which means that the impact of nationwide lockdown was not significant till -20th day prior to announcement of lockdown.

The test statistics value for -10th day of Nifty 100 and Nifty mid-cap 150 is greater than the critical value at 5% level of significance shows that, the Nifty mid-cap 150 and Nifty 100 had significant impact. This depicts due to the panic widespread across, the investors as well as participants of mid-cap and large-cap, who were expecting some measures to be taken by the government which started reflecting advance in their stock prices. But the value of Nifty small-cap 250 is less than the critical value which means the traders and investors in the

small-cap companies were not much impacted by the news of spread of infection all over the world. Hence, the participants' reaction differed from large to small cap companies.

The test statistics value for all the three indexes on the event day i.e. '0' day is greater than the critical value at 5% level of significance. Thus, the null hypothesis has been rejected based on the comparison of the test statistics value and the critical value. So, we accept the alternative hypothesis that the event of nationwide lockdown had a significant impact on the performance of the three indexes on the event day. The small cap companies who were not much affected prior to the event showed more cumulative abnormal return on the event day.

The data post the event day shows that the cumulative abnormal return kept on increasing which means that with every passing day the participants in the market were reacting according to the news prevailing in the market. The news of lockdown extension, moratorium, etc kept on driving the market. Though the movement of small-cap and mid-cap companies show that the event had negative impact but there was positive impact seen on large-cap companies. The large-cap companies were showing positive returns at an increasing rate during the period of the lockdown. The test statistics value is also greater than the critical value which supports that with increase in cumulative abnormal return the value of test statistic also increased and thus, we reject the null hypothesis.

With the above figures and evidence we can conclude that the small-cap and mid-cap companies are the main who suffers the brunt of the event while the large cap companies kept on moving in the normal trend.

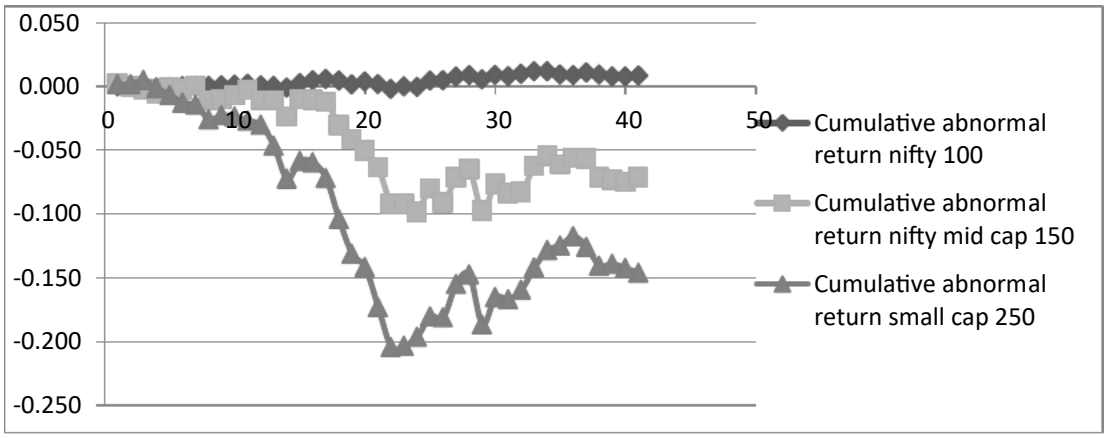

Figure 4 Graph showing the cumulative abnormal return of Nifty 100, Nifty mid-cap 150 and Nifty small-cap 250 index**.**

source: as computed and compiled by the author

The Fig.4 shows the cumulative abnormal return of Nifty large-cap, Nifty mid-cap and Nifty small-cap index. It is quite visible in the graph that the cumulative abnormal return varies from large-cap to small-cap companies.

7. CONCLUSION

The study has been undertaken with the objective of investigating the impact of lockdown on various types of indexes prepared to measure the performances of companies listed in NSE India. The indexes are classified into large-cap, mid-cap and small-cap companies based on their market capitalisation. The result of the study shows that the impact was significant on the three indexes selected for the study. The findings suggest that the impact of the event was different on classified capitalised companies. The large cap companies suffer lesser and also recovers faster than the other type of capitalised companies. The mid-cap companies even

though suffers the brunt of the event but eventually recovers fast. The small-cap companies suffer the most and are also the ones who are affected first with any uncertain event. The recovery also takes longer in case of small-cap companies in comparison to others.

8. LIMITATIONS OF THE STUDY

There are two main limitations of the present study. The first limitation of the study is that the researcher has focused only on three indexes to see the impact of nationwide lockdown because these three indexes namely Nifty100, Nifty mid-cap150 and Nifty small-cap 250 represents the companies under Nifty 500 index which consist 95.2 % of companies in terms of market capitalisation. The other limitation is that the researcher has not study the companies in details which wouldn't have been conclusive and has selected the market capitalisation base to standardize and cover more area.

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