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Lockdown of covid-19: An analytical study of impact on selected indices of Bombay stock exchange

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Abstract

The Covid-19 lockdown lead to sentiment in the stock markets across the word is gloomy. It has been reflected in the frequent crashes in the share markets in all parts of the world. Financial markets in India are witnessed sharp volatility in stock market indices due to fall in line with the global benchmark indices as the domestic market usually tracks the major global indices and the high volatility in likely to continue. In India BSE (Bombay Stock Exchange) is considered as oldest stock exchange and Sensex is its Major index. In this study attempt is made to identify the impact of covid-19 lockdown on Sensex and its selected sub-indices. Time period of this study is selected as before lockdown two months and after lockdown two month has been selected. For identification of impact paired t-test has been used as statistical tool. The major finding of the study indicated as significant negative impact of covid-19 lockdown is recorded on Sensex and its sub-indices.

Keywords: Covid-19, Lockdown, BSE = Bombay Stock Exchange, NSE = National Stock Exchange

Introduction

Bombay stock exchange is the first ever stock exchange in Asia established in 1875. The company serving their product and service over the past 143 years and the country to be granted permanent recognition under the securities contract regulation act, 1956. The Bombay stock exchange lists near about 6,000 companies and it is one of the largest exchanges in worldwide stock exchanges. The basic functions of Bombay stock exchanges is helped develop India's capital markets with the help of retail debt market and also help to grow and sustain Indian corporate sectors. BSE consist of equities trading platform for small and medium enterprise. It is also diversify their business from capital market to clearing, settlement, and risk management.

Literature review

(Aravind M, 2020) have studied covid: 19 effects on leading pharmaceutical stocks listed with NSE. For the study researcher selected ten leading pharmaceutical companies listed on NSE, these companies are selected based on market capitalisation of the companies. For this study general hypothecation was pharmaceutical stock will the general market trade or it has no effect and study period considered as pre and post covid-19 period should be considered. The data are selected of 123 daily price observations of the selected pharmaceutical companies. Time span in dated as 3rd September 2019 to 28th February 2020. The major findings of the study indicated momentum effect is persisting with selected stock and it was moving in accordance with general benchmarking index but Aurobindo Pharma and Lupin Ltd reported with varied return trend during the study period. This study identified strong reputed companies like Sun pharma, Cipla, Glenmark were seems to be sustaining in the crisis period in spite of general falling market trend.

(Ferraz Zeren, 2020) In this study they identified the impact of covid-19 Corona Virus on stock markets: evidence from selected countries. The aim of this study was reveal possible effect of covid-19 epidemic on stock markets. Time period of the study as 23rd January 2020 and 13th march 2020 should be considered. For identification of possible impact Maki (2012) co integration test should be used. For obtaining result all selected stock market examined with total death act together in long run. The major finding of the study indicated that total cases have co integration relationship of SSE, KOSPI and IBEX35 but there is no relationship with FTSE, MIB, CAC40 and DAX30. Researcher suggested that to avoid investment in stock market and divert flow of investment to Gold markets because as per researcher it is safe for investment.

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(Haiyue Liu, 2020) have analysed the Covid-19 outbreak and affected countries stock markets response. In this paper researcher studied short term impact of Covid-19 outbreak on 21 leading stock market indices in major affected nations namely Japan, Korea, Singapore, USA, Germany, Italy and UK etc. The covid-19 epidemic directly affected to stock markets in worldwide. In this study for findings event study method used and it was indicated that major stock market countries affected and area fell quickly after the covid-19 break. Out of selected nations specifically Asian countries experienced strong negative abnormal return as compared to other selected nations. Statistical tool like panel fixed regression model also support the adverse effect of covid-19 confirmed cases on stock indices and with these abnormal returns through this channel obtained and in investor think on pessimistic sentiments on future returns.

(Aishwarya Katare, 2020) In this study researcher analysed a study to comprehend Nifty-50 index of India during covid-19 pandemic Epoch. There are two significant indices in India which are S&P BSE Sensex and CNX Nifty. The CNX Nifty consist of large and most frequently traded stocks within the national stock exchange which is managed by IISL (Indian Index services and product limited) that is joint venture of national stock exchange and CRISIL. The term CNX stand for CRISIL and NSE and for the analysis few movement of nifty 50 examined in which technical indicator, DOW futures, daily news both month wise and international, FII and DII activities, SGX Nifty were useful. The time span of study was from 28th February to 27th march 2020. And data source use for this study was Zerodha application with few indicators. The major findings of the study indicated market all over the globe have corrected by more than twenty percentage which is pushed all the indices in the world into bear market trend. The 38.8% reduction in nifty trend as on 23th march 2020 and it is also indicated major sector are also affected due to Covid-19 like Metals, Banks, NBFCs, automobile, aviation and supply chain etc.

Research Gap:

There is not similar type of study made with consideration of literature reviews so there is undiscovered are in the Bombay stock exchange Sensex analysis. Research gap helps to make way for researcher in existing study.

Research methodology:

Research Methodology has been differ from study to study and it is give indicate path to researcher that how to conduct research on selected problem. For study following methodology should be used.

Objectives of the study:

- To analyse trend of Bombay Stock Exchange sub-indices
- To identify impact Of Covid-19 on Bombay Stock Exchange Sub-Indices.

Period of the study:

The time spans of study should be considered as 24th January to 24th April in which before 2 months of lockdown and after 2 months of lockdown are take to consideration for identification of impact on sub BSE indices.

Scope of the study:

Functional Scope: Functional scope of the study is identify whether covid-19 lockdown was effected on selected BSE sub-indices or not and with the help of paired t-test.

Selection of indices:

The probability sampling technique has been used for selection of indices in which out of total indices BSE Senses, BSE Sensex50, BSE Sensex 200, BSE Bharat 22, BSE 250 Small cap, BSE 150 Mid Cap, BSE 250 Large Mid Cap and BSE Next 50 selected.

Data collection:

The data are use for this study is Secondary nature data in which various stock exchange websites, newspapers, news articles have been used for analysis and interpretation of data.

Table 1: Data analysis and interpretation

BSE Indices	Before Lockdown period			After Lockdown Period		
	24-Jan.	24-Feb.	Aver.	24-Mar.	24-Apr.	Aver.
BSE Sensex	41,613	40,363	40,988	26,674	31,327	29,001
BSE Sensex 50	12,840	12,394	12,617	8,161	9,594	8,878
BSE Sensex 200	5,163	4,989	5,076	3,280	3,862	3,571
BSE Bharat 22	3,264	3,065	3,165	1,905	2,190	2,048
BSE 250 Small Cap	2,194	2,111	2,153	1,231	1,468	1,350
BSE 150 MidCap	5,103	5,006	5,055	3,220	3,713	3,467
BSE 250 LargeMid Cap	4,874	4,710	4,792	3,095	3,642	3,369
BSE Next 50	32,668	31,320	31,994	20,683	24,718	22,701

(Source: www.bseindia.com)

Above table indicated BSE Indices in which major BSE indices as Sensex and BSE sub Indices like BSE Sensex 50, BSE Sensex 200, BSE Bharat 22, BSE 250 Small Cap, BSE 150 Midcap, BSE 250 Large midcap and BSE Next 50 should be considered for analysis and identify the impact of Covid-19 on selected indices in time duration of before lockdown period and after lockdown period. BSE Sensex demonstrate around 30 companies share prices. As on 24th January 2020 Sensex was 41,613 and after one month on 24th February Sensex indicated 40,363 that means decrease

by 980 points within month. This is considered as before lockdown period. Due to Covid-19's lockdown there is significant impact on Sensex which is describe by on 24th may the Sensex was at 26,647 point which is lowest in the year of 2020. BSE Sensex 50 was 12,840 on dated 24th January and minor decrease after one month that is indicated major 50 companies share prices. This index is designed performance of the fifty largest and liquid companies which are listed on Bombay stock exchange limited and it is also demonstrate each key economic sector identify by BSE's

sector model. On the date 24th march which is lockdown date BSE Sensex was 8,161 and after that it was increased up to 9,594 on the date of 24th April. It is indicated highly impacted of lock down on this stock index. BSE Sensex 200 is the index which is demonstrates 200 companies listed on stock exchange. As on January 24th which before lock down date the index indicated 5,163 after one month minor decrease and index stood at 4,989 but due to lockdown on 24th march significant impact on index which is recorded as 3,280 and after one month it was stood at 3,862 and two month before average was 5,076 and after average was 3,571 which was indicated highly negative affected on this index. BSE Bharat 22 Index is designed to measure the performance of 22 selected companies which are disinvested by the central government of India and registered on BSE. These companies also affected by Lockdown which give evidence as on 24th January index was 3,264 and after one month index was 3,065 and average index was 3,164 but due to lockdown it is also affected as on 24th march index was 1,905 which means decrease 1,160 points due to covid-19 lockdown. It was also indicated after average of two month was 2,048. The small capitalisation companies indices indicated by BSE 250 small cap and it was also affected due to lock on 24th march in which as on 24th January index was 2,194 and after one month it was stood at 2,111, two months average indicated as 2,153 but due to impact of covid-19 lock down it was stood as average 1,350 of two months in 24th march it was 1,231 then after 24th April it was 1,468. BSE 150 Mid Cap is constructed to track

the performance of 150 medium capitalisations companies' performance by total market capitalisation, subject to buffers. On 24th January BSE 150 Mid Cap index was 5,103 and then after one month it was stood at 5,006 and both date average was 5,055 but due to effect of lock down on 24th march index was stood at 3,220 and 3,713 after one month. Average of two month after lockdown was 3,467 means decrease of 1,588 points due to it. The BSE 250 Large Mid Cap Index indicated total of 250 companies bifurcated by 65:35 portfolio in which 65% position consist of or weight in BSE 100 and remaining 35% weigh is BSE 150 Mid Cap Companies. Average index before lockdown was 4,710 which is consist of 24th January 's index as 4,874 and 24th February index as 4,710 then after lock down average was 3,369 which was consist of 24th march index as 3,095 and 24th April as 3,642. From these data also indicated significant impact of covid-19 lockdown. BSE Sensex next 50 indicated transparent, rules based index which is constructed to measure the performance of the next 50 largest and liquid organisation's stocks. As on 24th January index was 31,320 then on 24th February index was 31,994 but due to covid-19 lockdown first month 24th march index indicated as 32,668 and second month index was 31,320 then due to effect of covid-10 lockdown 24th march index as 20,683 and 24th April index as 24,718 that average before lockdown average was 31,994 and after lockdown average index was 22,701 means 9,293 points are decrease within two months.

Table 1: PAIRED T-Test for Identification of Impact of Covid-19's Lockdown

	Before Aver.	After Aver.	df	7
Mean	13229.8125	9297.687	t Stat	2.590
Variance	221645955.1	112243518	P(T<=t) one-tail	0.0179
Observations	8	8	t Critical one-tail	1.894
Pear. Correlation	0.99		P(T<=t) two-tail	0.035
Hypoth. Mean Diff.	0		t Critical two-tail	2.364

Above table indicated paired-t test for before lockdown and after lockdown average of BSE Sensex and its sub-indices. t-test has been performed base on average of two month which is before lockdown period and average of after two months lockdown period for the identification of impact of covid-19 impact on selected indices. The result of test is indicated paired t- test *p-value* one tail and two tails is less than 0.05 which means there is significant impact of covid-19 lock down on BSE Sensex and its sub-indices.

Findings

- The major finding of the study is there is significant negative impact of Covid-19 lockdown on BSE Sensex and its Sub-Indices have been recorded with the help of data analysis and statistical test.

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