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Stock Market Reaction to Covid-19 Lockdown Announcement in Nigeria: An Event Study Approach

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ABSTRACT

The study examined COVID-19 lockdown announcement effect on the Nigerian stock market. The study investigated the extent of the lockdown announcement impact on the Nigerian stock market and examined whether the reaction of the market prior to the lockdown announcement is the same with the post-lockdown period reaction. The research employed the event study methodology and computed the market model for a randomly selected sample of 38 companies listed on the floor of the Nigerian Stock Exchange (NSE). The event window used in the study is 35 days (20 days prior to the lockdown announcement and 15 days after the announcement). The findings of the study showed that there was a positive market reaction during the announcement period and beyond, as significant positive average abnormal returns were recorded in the market all through the lockdown period. Conversely, negative average abnormal returns were recorded prior to the lockdown announcement. The research concluded that, lockdown during the COVID-19 pandemic has a positive significant effect on the performance of stocks in the stock market in Nigeria.

KEYWORDS*:* Abnormal Return, Lockdown announcement, Event study, COVID-19.

1. Introduction

Since the beginning of the century, there has been the widespread of many pandemics, including the severe acute respiratory syndrome (SARS) in 2003, the H1N1 influenza in 2009, the Middle East respiratory syndrome (MERS) in 2012 and the Ebola epidemic in 2014 (Abdulazeez, 2020). The consequences resulting from such calamities to economy, health and national security across the globe have always been enormous.

In January 2020 the World Health Organization (WHO) declared COVID-19 a world health emergency. The epidemic propagation on a global scale and the extraordinary protection means countries around the world are using to prevent its proliferation, certainly have the consequences of flouting economic activities and aggregate demand reduction on the international scale. Tough restrictive measures naturally strengthen world financial market turbulence. The pandemic is considered by the society as a bigger threat to the economy rather than their health and there is no concern for economic saving measures declared by the governments (Oliver, 2020; Samuels, 2020).

Nigeria is the country with the largest population in Africa and considering the poor medical facilities in the country, it becomes a disaster if COVID-19 is spreading within its population. The Federal Ministry of Health has confirmed a corona-virus disease (COVID-19) case in Lagos State. The case, which was confirmed on the 27th of February 2020, is the first case to be reported in Nigeria since the beginning of the outbreak in China in January 2020. Nigeria's President Muhammadu Buhari on Sunday, 29th March, 2020 announced a lockdown of major cities worst hit by the virus. Since the first reported case in February, 2020, till June, 2020, 36,107 cases have been confirmed, 14,938 cases have been discharged and 778 deaths have been recorded in the 36 states and the Federal Capital Territory (NCDC, 2020).

The spread of the Covid-19 virus that encouraged social distancing led to the shutdown of financial markets, corporate offices, businesses and events, hence, greatly affected the global economy. Similarly, the rate at which the virus spreads and the high level of uncertainty concerning how bad the situation could be, led to a flight to safety in consumption and investment among consumers and investors (Ozili & Arun, 2020). The general consensus among top economists is that COVID-19 pandemic would trigger a global economic recession.

The lockdown caused the global economy to slow down and that resulted in COVID-19 taking its toll on the global demand for oil, which is estimated to surpass the 2007-08 recession, when a loss of nearly 1 million barrels per day was recorded. This is also coming at a time when two key players in the global oil industry – Russia and the OPEC cartel – are at loggerheads on the decision to cut output. This may have more dire consequences on the oil price that has already started to dive.

The COVID-19 pandemic therefore, affected global economies and Nigeria is not an exemption. There was a total halt in activities as a result of the total lockdown announced by the Nigerian government. Financial markets were among the worst hit sectors as global stock markets erased about US$6 trillion wealth within a week (Ozili, 2020). The S&P 500 index also lost over $5 trillion within the same period and the S&P 500's largest 10 firms experienced a combined loss of over $1.4 trillion due to fear and uncertainty among investors. Travel restrictions led to massive losses in the events, aviation, entertainment, hospitality and sports industries. These led to a combined global loss of over $4 trillion (World Bank, 2020).

The Nigerian stock market was also affected by the Covid-19 pandemic. Barely three weeks after the first COVID-19 case was confirmed in January 28, 2020, stock market investors lost over NGN 2.3 trillion (US$5.9bn). The market capitalisation of listed equities, depreciated by NGN2.349 trillion within a period of three weeks (February 28 to March 23, 2020), while the All-share index dropped by 20.8 per cent within the same period. The intensity of lost in investors wealth recorded in just a period of three weeks is mind boogling and therefore, calls for an empirical investigation to be conducted in order to investigate how did the stock market responded to this nationwide lockdown announcement. In this study, the researcher employed the use of event study with the semi-strong form of market efficiency hypothesis of Fama (1970) to explain the influence of the lockdown due to COVID-19 on the Nigerian stock market. Consequent upon that, the study investigates the impact of the lockdown announcement on the stock market and its effect on the average abnormal return of stocks in the Nigeria stock market.

The next sections cover literature review and hypotheses development, research methodology, results and discussions and finally, summary and conclusions of the research.

2. Literature Review and Hypotheses Development

This section presents views of existing empirical evidence concerning the link between financial markets and COVID-19 pandemic, which provide further leads to the development of the hypotheses.

Ever since, the COVID-19 pandemic was declared as a global disaster by the WHO, there has been a dearth of studies associated with the impact of COVID-19 on the stock market. In Nigeria, the researcher is yet to come across any empirical investigation on the impact of COVID-19 on the stock market. However, a number of researches have been carried out elsewhere analysing the impact of COVID-19; nevertheless the number is still negligible.

Literature showed that the COVID-19 pandemic has caused more serious financial distractions and financial market risks than those caused by previous disasters (Goodell, 2020; Zhangetal., 2020). Among the earliest studies that investigated the impact of COVID-19 on stock market is Baker et al. (2020) which analysed the role of COVID-19 developments in recent stock market behaviour and compared it with previous virus outbreaks and concluded that no previous infectious disease has ever led to daily stock-market swings that even

slightly resemble COVID-19. Examining the market reactions to the COVID-19 on the international trade and financial policies of firms, Ramelli and Wagner (2020) found a negative outcome for internationally-oriented US firms, particularly those with China exposure and the US and markets moved feverishly when the virus spread across Europe and the US. Qing Heandal (2020) analysed the direct and spill-over effects of COVID-19 on daily stock markets returns in China, Italy, South Korea, France, Spain, Germany, Japan and the USA. The findings showed that COVID-19 has a negative but short-term effect on stock markets returns in these countries. Similarly, Ozili & Arun (2020) analysed the impact of COVID-19 on the global economy and result showed that restriction on internal movement and higher fiscal policy spending positively impacted on the level of economic activities, while the increasing number of confirmed corona-virus cases did not have a significant effect on the level of economic activities.

Al-Awadhietal (2020) examined the effect of COVID-19 pandemic on Chinese stock market and findings showed a decrease in both the daily growth in total confirmed cases and in total cases of death caused by COVID-19 involved an increase on stock returns across all companies. In the same spirit, Ben-Ayed e tal., (2020) investigated the reaction of Tunisian stock market to the COVID-19 pandemic and findings showed that daily growth rate of confirmed cases is positively related with stock returns, whereas daily growth of deaths cases negatively affected the performance of stock returns. Badar, Nadeem and Ashraf (2020) utilised daily change in major stock index and daily growth in COVID-19 confirmed cases and mortalities data from 64 countries and found negative market response to increase in COVID-19 confirmed cases and weak market response to growth in number of mortalities.

Evaluating the relationship between COVID-19 confirmed cases and all the financial markets in USA and China, Sansa (2020) concluded that a positive and significant relationship exist between COVID-19 confirmed cases and the financial markets response in these countries. Hai Yue Liu et al., (2020) examined stock market indices of the most affected countries and found that COVID-19 confirmed cases reduced the daily abnormal return of stock market indices. El-Basuony (2020) revealed that there is a negative significant relationship between confirmed cases and death cases from COVID-19 and the trading volume on KSA and Egypt stock exchange.

Investigating the effect of corona-virus spread on stock markets, Alber (2020) documented evidence of a significant negative impact of Corona-virus spread for China, Germany, France and Spain but not for American and Italian markets. El-sayedandal (2020) examined the effects of COVID-19 spread on 17 sectors of the stock exchange of Egypt and found that stock market's returns of all sectors are most sensitive to new cases of COVID-19 and more sensitive to cumulative death indicators than daily mortalities. Gormsen and Koijen (2020) examined the impact of growth expectations by investors in the US and European countries and findings showed downward trend in dividends and GDP growth as a result of the COVID-19 lockdown. Utilising the market model event study methodology, Alam, Alam & Chavall (2020) investigated the impact the lockdown period caused by the COVID-19 to the stock market of India. These researchers examined the extent of the influence of the lockdown on the Indian stock market and whether the market reaction would be the same in pre- and post-lockdown period caused by COVID-19. The study found evidence of a positive abnormal return during the lockdown period and confirmed that lockdown had a positive impact on the stock market performance of stocks till the situation improves.

The literature regarding the link between financial markets and COVID-19 is quite limited and therefore, this study contributes to the emerging evidence by investigating the effect of the COVID-19 pandemic on a Sub-Sahara Africa (SSA) stock market which also remains limited.

Research Hypotheses

In line with the current literature regarding the effects of COVID-19 on the financial markets, the following hypotheses are formulated for this research:

Hypothesis (H_0): there is significant positive average abnormal return (AAR) around the event date of COVID-19 lockdown announcement in Nigeria,

Hypothesis (H_1): there is a significant negative average abnormal return (AAR) around the event date of COVID-19 lockdown announcement in Nigeria.

3. Research Methodology

The study utilised the standard event study methodology. The population of the study consisted of all firms listed on the Nigerian Stock Exchange (NSE) as at 30th June, 2020. The sample comprised all firms that have price data within the period of the study. However, firms under technical suspension were dropped from the sample. Data was obtained from the Nigerian Stock Exchange (NSE) website.

The period of the study is_March – April, 2020, and therefore, NSE index closing prices for that period were taken. The event is the announcement of lockdown by the federal government of Nigeria and the event date is defined as the day the lockdown was announced (i.e. 29th of March, 2020), which is taken at day 1. The assumption is that the information was known to the market on the day of the event, which was Sunday. The event window for the study is 35 days, which is defined as 20 days prior to the lockdown announcement and 15 days after the announcement.

In order to capture the abnormal returns as a result of the COVID-19 lockdown announcement, the study employed the Market Model pioneered by Ball & Brown (1968), Fama (1969), Brown & Warner (1985) and Mackinlay (1997) using the following linear model:

$$R_{i,t} = \alpha_1 + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

This model assumes that a linear relationship exists between the returns of the security to the returns of the market portfolio and it has been proven to yield valid results and a relatively powerful methodology that can be applied under a wide variety of situations (Salamuddin et al., 1999; Brown & Warner, 1985).

The daily prices of 35 trading days for pre and lockdown periods are included in the estimation period for computation of the regression coefficients for the sampled firms. A 35-days event window, -20 to +15 in the pre- and lockdown period where event date is day 1, which was the announcement day of the lockdown is used for computing the abnormal returns (AR), for each of the stocks, the average abnormal returns (AAR) of the sampled firms and the cumulative average abnormal returns (CAAR) around the date of stocks in the sample. Consistent with Alam, Alam & Chavali (2020), a comparison of the percentage of the average abnormal returns (AAR %) and the T-statistics of the period prior to the lockdown and the lockdown period are calculated and compared.

The study investigates if there is any significant positive AR that is associated with the lockdown period within the event dates and to determine the speed with which information regarding the lockdown announcements are absorbed into the security prices in the market. The study examines the extent of influence of the COVID-19 lockdown period on the Nigerian stock market and its impact on the market reaction around the lockdown period.

The hypotheses of the study are tested using the standard t-test, thus, the normality of

residuals is necessary to validate t-tests (De Medeiros & Matsumoto, 2006). In the light of this, the study utilises the Jarque-Bera Normality test (Bera & Jarque, 1981) to test for the normality of the abnormal returns.

4. Results and Discussion

Table 1 shows the number of firms by sector that are utilised as samples in the study.

Table 1 Sample Distribution of Firms

Firm	Sector
Access Bank	Financials
Africa Prudential Registrars	Technology
African Paints (Nigeria)	Basic Materials
Aso Savings And Loans	Financials
B.O.C. Gases Nigeria	Basic Materials
Berger Paints	Basic Materials
Cadbury Nigeria	Consumer Goods
Capital Oil	Oil & Gas
Costain	Real Estate
Courteville Business Solutions	Technology
Diamond Bank	Financials
Dunlop Tyre & Rubber	Consumer Services
Ekocorp	Health Care
Eterna	Oil & Gas
FCMB Group	Financials
Flour Mills Of Nigeria	Consumer Goods
Guaranty Trust Bank	Financials
Guinness Nigeria	Consumer Goods
HIS	ICT
Interlinked Technologies	Industrials
International Breweries	Consumer Goods
Livestock Feeds	Consumer Goods
Neimeth International Pharmaceuticals	Health Care
Nig – German	Natural Resources
Oando	Oil & Gas
Okomu Oil Palm	Consumer Goods
PZ Cussons Nigeria	Consumer Goods
Skye Bank	Financials
Sterling Bank	Financials
Studio Press (Nigeria)	Industrials
Tantalizers	Consumer Services
Thomas Wyatt Nigeria	Basic Materials
U A C N	Industrials
Union Bank Of Nigeria	Financials
United Bank For Africa	Financials
Unity Bank	Financials
University Press	Consumer Services
Wema Bank	Financials

Source: NSE (2020)/Researcher's Compilation, 2020

Table 2 showed the results for thirty eight regressions of the individual firms share return series against the respective market return.

Table 2: Results of the Market Model Regression over the Event Window

	Intercept	Coefficient	Std. error	T-statistics	F-statistics	R^2	Obs	Method of Estimation
ACCESS+	-0.201140	-0.041860	0.267818	-0.156301	0.024430	0.000610	42	OLS
AFRIPRUD	4.606790	-0.000516	0.000411	-1.255191	1.575503	0.037895	42	OLS
BOC GAS	0.038733	-0.018968	0.025896	-0.732445	0.536476	0.013234	42	OLS
BPAINTS	0.020082	0.000184	0.024286	0.007559	0.994007	0.000001	42	OLS
CADBURY	0.022003	0.013378	0.010899	1.227439	0.226833	0.036298	42	OLS
COSTAIN	0.095334	0.004203	0.068797	0.061087	0.951594	0.000093	42	OLS
CTVILLE	0.005625	0.001171	0.001099	1.065679	0.292959	0.027608	42	OLS
DIAMOND	0.002115	0.001228	0.021643	0.056717	0.955053	0.000080	42	OLS
DUNLOP	0.082527	-0.024040	0.037456	-0.641823	0.524649	0.010193	42	OLS
EKOCORP	0.082527	-0.024040	0.037456	-0.641823	0.524649	0.010193	42	OLS
ETERNA	0.019912	0.005175	0.000516	10.03617	0.000000	0.715757	42	OLS
FBN	-0.002451	0.021834	0.032987	0.661911	0.511824	0.010834	42	OLS
FCMB	0.007097	0.015458	0.015107	1.023207	0.312359	0.025506	42	OLS
FLOURMILL	-0.032553	0.009994	0.023809	0.419780	0.676893	0.004386	42	OLS
GUARANTY	0.074355	-0.209539	0.140955	-1.486571	0.144968	0.052355	42	OLS
GUINESS	0.034453	0.104814	0.039655	2.643179	0.011671	0.148690	42	OLS
HIS	0.004710	0.000633	0.001293	0.489626	0.627073	0.005958	42	OLS
IBREW	0.036676	0.037269	0.023606	1.578823	0.122253	0.058661	42	OLS
INTTERLINK	0.010245	0.007627	0.017959	0.424699	0.673332	0.004489	42	OLS
JOSBREW	0.098218	-0.008201	0.030574	-0.268251	0.789885	0.001796	42	OLS
LIVESTOCK	0.097584	0.004306	0.034975	0.123128	0.902622	0.000379	42	OLS
NIGWIRE	0.023527	-0.000680	0.000675	-1.007981	0.319677	0.025390	42	OLS
NMEITH	0.022630	0.001626	0.009955	0.163335	0.871077	0.000667	42	OLS
OANDO	0.033902	0.031574	0.042115	0.749727	0.457806	0.013858	42	OLS
OKOMUOIL	0.040846	0.001539	0.012284	0.125302	0.900912	0.000392	42	OLS
PBREW	0.001804	0.000443	0.000265	1.669033	0.103786	0.071822	42	OLS
PZ	0.009315	0.009871	0.009666	1.021167	0.313312	0.025407	42	OLS
SKYEBANK	-0.201170	-0.009201	0.050628	-0.181738	0.856707	0.000825	42	OLS
STUDPRESS	0.003274	-0.012562	0.012596	-0.997351	0.324590	0.024264	42	OLS
STERLIN	0.013483	0.004427	0.004349	1.017733	0.314921	0.025241	42	OLS
THOMSWYT	0.098981	-0.000148	0.001681	-0.088231*	0.930145	0.000200	42	OLS
TANTALIZER	0.010757	0.000397	0.003553	0.100707*	0.911614	0.000312	42	OLS
UAC	-0.004039	-0.006616	0.007765	-0.851977	0.399299	0.017823	42	OLS
UBA	0.011212	0.061665	0.024411	2.526125	0.015594	0.137584	42	OLS
UBN	0.106810	0.248542	0.096575	2.573558	0.0139	0.142058	42	OLS
UNITY	-0.017871	0.003668	0.002779	1.319756	0.194420	0.041727	42	OLS
UPL	0.002576	-0.009742	0.000411	-23.69777	0.000000	0.933509	42	OLS
WEMA	0.027351	-0.000939	0.000533	-1.761668	0.085767	0.072001	42	OLS

Source: E-views 7.0 outputs, 2020

*, **and*** imply significance at the 10%, 5% and 1% levels respectively.

The figures in Table 2 showed that the coefficient of determination (R^2) which represents the explanatory power of the relationship between the variables in most of

the regressions is weak. This implied that the larger part of the variation in the dependent variable is explained by other factors outside the model, but since the study is only concerned with the part not explained by the estimated regressions (i.e. Residuals), the result will not in any way affect the analysis of the study. On the one hand, Table 2 also presented statistically insignificant t-statistic values in the majority of the regressions. In particular, only the regressions for FCMB, Thomswyatt and Tantalizer revealed statistically significant results at the five, ten and ten percent level respectively. The findings also have no bearing on the analysis of the study, since there is no any hypothesis that was tested under any of the fifty eight regressions that were estimated in the event window or the parameter estimation window. On the other hand, the table revealed relatively low standard errors on the average, with the highest as approximately 0.8518 and the lowest being approximately 0.0004. All the fifty eight regressions are estimated using the ordinary least squares (OLS) model.

Table 3 presents results for each of the 35 days' event window, 20 days represent pre-lockdown period and 15 days represent lockdown period for the entire sample of 38 companies.

Table 3: Daily average abnormal returns (AAR) and t. statistics before and after the lock down announcement

Day	AAR (%)	T. Stat	H_0 Test	CAAR (%)	Day	AAR (%)	T. Stat	H_0 Test	CAAR (%)	Day	AAR (%)	T. Stat	H_0 Test	CAAR (%)
-20	-0.1748	-2.4168	Reject	-0.1748	-8	-0.1320	-0.4345	Accept	-2.3468	5	0.0899	1.5461	Accept	0.6415
-19	-0.4435	-0.2945	Accept	-0.6183	-7	-0.4425	0.04257	Accept	-2.7892	6	0.1941	0.4361	Accept	0.8357
-18	-0.1143	-1.1822	Accept	-0.7327	-6	-0.3277	-0.7951	Accept	-3.1169	7	0.3049	0.6799	Accept	1.1406
-17	0.1720	0.1027	Accept	-0.5607	-5	-0.2708	1.4641	Accept	-3.3877	8	0.2575	1.4083	Accept	1.3981
-16	-0.1932	-1.2709	Accept	-0.7539	-4	-0.2454	0.8670	Accept	-3.6331	9	0.3933	0.3154	Accept	1.7915
-15	-0.1276	-1.6983	Reject	-0.8815	-3	0.2112	-0.6007	Accept	-3.4219	10	0.4225	2.1300	Accept	2.2140
-14	-0.0445	2.2100	Accept	-0.9260	-2	-0.0195	0.8243	Accept	-3.4414	11	0.2243	2.2902	Accept	2.4383
-13	-0.4555	1.6201	Accept	-1.3814	-1	-2.1143	0.3384	Accept	-5.5557	12	-0.1979	2.2751	Accept	-2.6362
-12	-0.3065	0.3558	Accept	-1.6880	1	5.5431	-0.4238	Accept	8.9666	13	0.5538	-0.2585	Accept	3.1901
-11	-0.3155	-0.8408	Accept	-2.0034	2	0.0689	-2.2736	Reject	0.0689	14	-0.2868	0.4758	Accept	-3.4769
-10	-0.1487	-0.8696	Accept	-2.1521	3	-0.1888	-0.8149	Accept	-0.2577	15	0.3110	-0.6409	Accept	3.7879
-9	-0.0627	-1.2293	Accept	-2.2148	4	-0.4737	0.7208	Accept	-0.7314					

Source: E-views 7.0 outputs, 2020

Table 3 reported the average daily AARs and CAAR for the day's t−20 to t+15 along with the test statistics obtained. The AARs are all negative prior to the lock down announcement, except for days -17 and -3. However, it is observed that there are significantly positive AARs in most of the days after the lockdown announcement. CAAR is also seen to be significantly positive in the event window. This result led to the acceptance the first hypothesis (H0) of the study that there is significant positive average abnormal return (AAR) around the event date of COVID-19 lockdown announcement in Nigeria.

The result indicated that the lockdown announcements have significantly increased the returns of the majority of the stocks in the sample. The implication of the finding is that the significant increase in the stock returns may be as a result of the lockdown announcement news; because the market anticipated that the lockdown could control the spread of the virus in the country which would ultimately benefit the country's stock market in the long run. Consequently, all stock market players received the lockdown announcement as positive news and therefore, hailed the decision of the government, which ultimately reflected on stock returns in the market.

Table 4: Average abnormal returns (AAR) before and after the lock down announcement

Event Window	AAR (%)	T. Stat	Test of H0	Level of Significance
Before the COVID-19 lock-down announcement	-0.003	-0.161	Reject	
After the COVID-19 lock-down announcement	0.036	3.422	Accept	

Source: E-views 7.0 output, 2020

Table 4 showed the comparison of AARs across different event windows prior and after the lockdown periods. Prior to the lockdown, the stock market reaction was negative, which led to the rejection of the first hypothesis (H0) at the 5-percent level of significance. In the period prior to the lockdown announcement, the AAR was negative and thus, hypothesis H0 was rejected. This may not be far from the fact that, the whole world was panicked by the pandemic. The enormous withdrawals from the stock market therefore, contributed to the negative AAR, and investors were eager for a policy formulation that serves as a protective measure in preventing spread of the virus. Consequent upon, the global market reaction, in the pre-lockdown period in Nigeria, investors engaged in heavy withdrawals of capital and disposal of the stock, which might have led to the negative

AAR prior to the lockdown announcement. Conversely, on the day of the lockdown announcement and beyond, the AARs were positive and, therefore, the hypothesis (H0) is accepted. The reason for the positive AARs in the market after the announcement may be that the stock market had anticipated the announcement of the lockdown by the Government and predicted that it would be favourable. Similarly, investors were also eagerly waiting for such measures from the Government.

5. Conclusions

The COVID-19 pandemic has greatly affected the global economy. Nigeria is the most populous country in the African continent; therefore, the pandemic was particularly dangerous to Nigeria. The pandemic approximately has affected all stock markets around the world. The outbreak of the virus is the greatest crisis of the century so far. Total lockdown and social distancing were declared as the only solutions to preventing the spread of the virus until vaccines were available. Although, the lockdown announcement was eventually made in Nigeria, the announcement was a little bit late and this was clearly evident in the period prior to the lockdown announcement when AAR was negative. With the lockdown announcement, the stock market immediately responded positively which was evident in the positive AAR recorded in the stock market after the announcement.

The study also found evidence of positive AR around the lockdown period and confirmed that the lockdown has positively impacted the stock market performance until the situation improved in the Nigerian context. However, the result held true for the selected samples of firms listed in the floor of the NSE during the period considered for the study. Furthermore, the findings of the study cannot be generalised to other traded stocks, neither can it be generalized for other periods in the future or in a different market context. The implications of the study findings are that investors can take precautionary steps before trading in stocks during any period of a lockdown. Whereas, investors that are risk averse can completely stay away from trading around the lockdown to avoid the risk associated with stocks volatility in the lockdown period. The result of this study would be of benefit to policy makers, investors and researchers as it may help them better understand and evaluate the impact of the lockdown on stock markets caused by COVID 19.

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