IMPACT OF COVID-19 ON INDIAN STOCK MARKET: A REVIEW OF LITERATURE

Sunita* Dr. Gurbir Singh Khera** Dr. Ritu Gupta***
*Assistant Professor,Department of Commerce, Govt. College Dujana, Jhajjar, Haryana-124102,
& Research Scolar at: School of Management & Commerce, K.R. Mangalam University,
Gurugram, Haryana-122103, India.
**Professor,School of Management & Commerce,K.R. Mangalam University, Gurugram,
Haryana-122103, India.
***Assistant Professor, Department of MBA,Maharaja Agarsen Institute of Technology (IP
University), Rohini, Delhi-110086, India.

Abstract
The paper conducts a qualitative analysis of literature available on the impact of Covid-19 on Indian stock market. WHO declared Covid-19 as a pandemic on March 11, 2020. This virus created health problems as well as economic problems all over the world. In this paper, guidelines related to Items of Preferred Reporting and Meta-Analyses were adopted for conducting the systematic review. Total 60 articles were identified by performing database searches that were published in English from 2020 to 2021. In these articles, performance of stock markets is empirically tested to know the impact of covid-19. The major findings of the present review showed that the markets become more volatile and unpredictable due to high uncertainty of the pandemic and its related economic losses. At starting of this pandemic, investors did not invest in stock market. Gold and cryptos were assumed to be a better and safe investments. But within a short span of time the Indian stock market re-gain confidence and started performing positively. Some of the researches also clear the mechanisms behind this. The present study finds that no study has been carried out to study the sector wise and industry wise impacts of Covid-19 on Indian stock market.

Keywords: Indian stock market, Covid-19, Pandemic, Investors, Systematic Literature Review, Volatility

1.   Introduction

The new infectious corona virus (SARS-CoV-2), later on named as Covid-19 was initially discovered in China (Wuhan city) in December 2019. From China, this virus spread very speedily in other countries around the world (Kabir et al., 2020; Yang, Isa, & Ramayah, 2021; Zhou et al., 2020). World Health Organization (WHO) considered it a health emergency globally on Jan.30, 2020 and a pandemic in a very short time on March 11, 2020.

India is on 2nd position population wise and in population density it is on the top in the entire world. According to World Bank data about 176 million Indians are poor and their living standard is very low. In cleanliness, health and medical service, it has very low ranking all over the world. In India the first case of corona virus was reported on 30th January 2020. ("DH Web Desk (2020). Coronavirus India update: State-wise total number of confirmed cases, deaths on April 17. ," 2020). To restrain the spread of this virus, a lockdown was announced by Indian government on March 24, 2020 for 21 days and then extended it as per requirement of that time, which continues till May 3, 2020 and about 14376 people were died by April 17, 2020 ("DH Web Desk (2020). Coronavirus India update: State-wise total number of confirmed cases, deaths on April 17. ," 2020). The global economy was affected by this pandemic and India was not the exception(Barbate, Gade, & Raibagkar, 2021). (Pandey & Kumar, 2011). This pandemic pushed the world in a great crisis of century.

This paper presents the review of research work related to consequences of covid-19 on the performance of stock market of different countries all over the world. This review will give an insight to understand how stock markets are behaving in response of covid-19 news and various control measures adopted by different authorities.

This research work is organised into four parts. In first part, a brief introduction of volatility and Indian stock market is given. The second part explains the techniques and methodologies adopted to collect and analyse the available literature. In third part, the summary to explain the impact of covid-19 and control measures adopted by different authorities to combat its adverse impacts is reported. Finally, the future scope of this study is proposed that will assist the investors as well as policymakers for better decision making and policy formation.

2.   Volatility and Indian Stock Market
 Volatility is termed as random ups and downs in stock markets. The price, return and different events are uncertain and these are reflected by volatility in concerned stock market. Except over certain months, the volatility in stock prices in India has displayed a declining trend.   . Unlike the major developed and emerging stock markets, Indian stock market also shows similar characteristics. Whenever uncertainty and cynicism wrapped up an economy, then the investors are always expected to move to stable investment options instead of risky investments (Arin, Ciferri, & Spagnolo, 2008). But such type of adverse reaction of market always seems to be for a short time and markets return to the normal track when investors regained their confidence.

3.   Research Methodology
Standard methodology was adopted for this systematic review to ensure methodological rigour (Higgins et al., 2019). Multiple databases were searched to locate articles namely SAGE Publication, Elsevier, Emerald and Google Scholar. Appropriate terms like covid-19, preventive measures, Stock market volatility etc. were searched. Apart from this, various articles were retrieved through cross references. To find the relationship among covid-19 and stock market volatility, the review process is confined to empirical studies published only in English language from 2020 to 2021. This search yielded 9835 articles, after screening and reading titles & abstracts, 9690 articles were excluded due to duplication and irrelevancy. Full manuscripts of the remaining 145 articles were read and found potentially relevant. Finally 60 articles were selected for the final review, the remaining 85 were excluded based on inclusion–exclusion criteria. To highlight the sample characteristics data table was made that includes impact of covid-19 on stock markets of various countries, year, research methodology and major findings.

4.   Objectives of Study
Following questions are taken into consideration to guide this review of literature. (a) What is the impact of covid-19 on Indian stock market return and volatility? (b) What is the impact of covid-19 on Global stock market return and volatility? (c) How are the different preventive measures helpful to revive the declining stock market? These three questions helped the authors to conduct a comprehensive review of available literature. It also aims to find out the research gaps in existing studies for further research.

5.   Literature Review
5.1.   Pandemic And Global Stock Market
A very little work has been done to know the impact of this deadly disease on stock market return. Here efforts are made to analyse that research work which shows the effects of covid-19 on stock market risk,

volatility and return. Along this the impact of various steps taken by different authorities are also taken into consideration for analysis to get complete picture of the scene. Efforts are also made to see the consequences of this virus on stock market all over the world including Indian stock market specially.

The press news brought no impact on stock market returns in early stage of this pandemic. In the beginning, stock markets were performing very well. When it is announced as human to human communicable disease, it negatively impacted stock market returns. (Khan et al., 2020). During early stage of pandemic, US stock market volatility was increased but after that it became insensitive to new cases of covid-19. But China stock market was more volatile to very small daily increase in new cases(Gao, Ren, & Umar, 2021). Stock market volatility increased according to increase in covid-19 cases but it is lower in those countries where people have faith in themselves and trust in government(Engelhardt, Krause, Neukirchen, & Posch, 2021). Covid-19 news got more attention by the people at home causing covid-19 fear. It is found that stock market performance and GDP is decreased by 0.8% and 0.56% respectively with 1% rise in corona cases.(Li et al., 2021). Total number of confirmed cases at global level strongly affected the US stock market volatility in comparison to cases reported in US itself. The existing pandemic and its uncertainty increased US stock market volatility(Albulescu, 2021). Covid-19 news made US stock market highly volatile in comparison to other economic factors. Negative news (no. of deaths) has great impact on stock market volatility than positive news like recovery rate (Baek, Mohanty, & Glambosky, 2020). During this pandemic, the uncertainty of economic policy also increased stock market crash risk in US(Dai, Xiong, Liu, Huynh, & Sun, 2021).

Google searches regarding covid-19 created strong direct and indirect shock on volatility of European stock market in comparison to remaining world. The anxiety increased due to increased search about covid-19 and its economic consequences made negative relationship between return and volatility more stronger(Papadamou, Fassas, Kenourgios, & Dimitriou, 2020). Overall this pandemic increase volatility and reduces stock market return. But this return reduces less in more free countries in comparison to less free countries. Loss in stock markets by covid-19 was less in more free countries (Erdem, 2020). Investors that belong to high uncertainty avoiding countries reacted more strongly and stock markets of these countries displayed huge decline in return and high volatility in comparison to stock markets of low uncertainty avoidance, high individualism and low disease incidence countries (Fernandez-Perez, Gilbert, Indriawan, & Nguyen, 2021).

Asian stock markets reacted very quickly and reported more decline in their returns on the outbreak of this pandemic and in this slowdown investor's fear played the role of mediator and transmission channel. The shutting down of offices and factories reduced income and profitability of different companies. (H. Liu, Manzoor, Wang, Zhang, & Manzoor, 2020).

The spill over impact of covid-19 among Asian countries and European and American countries was bidirectional. The effect of this virus on returns is different and more than the impact of any recession. Because investors got confidence once the pandemic is over in comparison to recession (Q. He, Liu, Wang, & Yu, 2020). Health pandemic is a significant source of financial contagion from US and China to global stock market rather than only financial crises as proved in earlier studies. The volatility spill over is very weak from US and China to certain countries during this pandemic(Nguyen, Phan, Ming, & Nguyen, 2021).

The fluctuations in US stock market during this pandemic are mostly due to investor's sentiments rather than Federal Reserve announcements(Cox, Greenwald, & Ludvigson, 2020). A habituation was seen within six weeks, because the covid-19 fear reduced to previous level that was before lockdown. Covid-19 fear raised swiftly and afterwards levelled off in spite of covid-19 new cases and deaths(Hetkamp et al., 2020).

All sectors have been affected by covid-19 but the sectors that are digitally transformed are able to sustain their activities during this pandemic and recovered faster post covid-19 period(Ding, Guan, Chan, & Liu, 2020).

Large capitalization stocks faced more negative returns in comparison to small capitalization stocks (Al-Awadhi, Alsaifi, Al-Awadhi, & Alhammadi, 2020). All companies whether listed or not, performed poorly during outbreak of this pandemic in China. But IT and medicine manufacturing companies were performing better than market in comparison to Beverages and transport companies (Al-Awadhi et al., 2020). The decision of lockdown brought a great shock to Chinese stock market. The stocks related to low institutional ownership like retail investors overreacted to this pandemic(Huo & Qiu, 2020). The impact of covid-19 on various industries of China shows that traditional industries are greatly affected by this pandemic. But various opportunities are created for high tech industries. (P. He, Sun, Zhang, & Li, 2020).

The confirmed cases negatively impacted the stock market returns but stock markets' reaction to death cases is very weak. Stock markets responded in different ways over the period of this pandemic according to the harshness of this pandemic (Ashraf, 2020b). Japan' stock market showed a decline according to US stock market even if when the number of infected cases in Japan was very low in comparison to other countries. The companies which have more exposure to China and US economy faced more decline in their returns (Takahashi & Yamada, 2021).

Global financial markets suffered a loss of 5 trillion-dollar equity out of the market within a short span of one week. The volatility connectedness was increased and natural gas proved a safe haven and best hedging option in comparison of other commodities for the investors (Farid, Kayani, Naeem, & Shahzad, 2021). Shock news shows asymmetric effect between US and Chinese stock markets (Yousfi, Ben Zaied, Ben Cheikh, Ben Lahouel, & Bouzgarrou, 2021). The investors in financial markets withdrew their investment during this pandemic which caused lower returns and high volatility. (Harjoto, Rossi, Lee, & Sergi, 2021).

It is observed that market crash risk in China was increased due to rise in investors fear even when the number of confirmed cases is very low. Investors are sensitive to local as well as global news during a pandemic. So, clear and timely communication is the demand of the hour to tackle any emergency like covid-19 (Z. Liu, Huynh, & Dai, 2021). Financially strong companies recovered from the shock created by this pandemic in comparison to other companies and showed a V- shaped recovery. Investors sell off their shares in financially distressed companies and their chances of survival becomes marginal. (Mahata, Rai, Nurujjaman, & Prakash, 2021).

This pandemic negatively affected Taiwan stock market return but impact on CSR companies was insignificant and recovery of these companies was also faster than Non-CSR companies because investors are more confident in these companies(Lee & Lu, 2021). Covid-19 highly affected the

volatility of oil and stock market in comparison to 2008 global financial crises. (W. Zhang & Hamori, 2021).

5.2.   Pandemic and Indian Stock Market

Mostly states in India are not capable to solve any health emergency like covid-19 pandemic. Facing and tackling of a pandemic is only possible through timely actions of govt. like social distancing until there is full coverage by vaccine (Bhattacharya & Banerjee, 2021).

Stock market showed negative reaction to this pandemic and this reaction was to media coverage rather than the pertinent situation(Khanthavit, 2020). This pandemic affected stock market returns more severally than demonetisation and GST(A. K. Mishra, Rath, & Dash, 2020). Indian stock market became more volatile in comparison to other developed economies and all indices showed negative returns except healthcare and Pharma sector during this pandemic(Chaudhary, Bakhshi, & Gupta, 2020). These two sectors performed positively during the crisis period as investors believed that these sectors would be beneficial during any pandemic like covid-19(Mittal & Sharma, 2021). Indian stock market faced a sharp decline in automobile sector when overseas investors moved to dollar backed assets(Rajamohan, Sathish, & Rahman, 2020).

Volatility spill over was increased and energy sector and then oil and gas were the major sectors of volatility transmission during this pandemic(Guru & Das, 2021). All sectors in India reported negative returns but after the announcement of supportive packages by government, stock markets started rising(Thomas, Sankararaman, & Suresh, 2020).

Stock prices declined up to first lockdown period and after that they moved upward again(Bora & Basistha, 2021). The attention dynamics of socio- economic search at Google by the investors during Covid-19 affected the indices of NSE Nifty and BSE Sensex in short and long run and this impact is greater in NSE in comparison to BSE(Sinha, 2021).

This pandemic has created opportunities for private equity investors to invest in the field of education and e-health(Malik, Sharma, & Kaur, 2020).

The market uncertainty and information asymmetry created by ongoing covid-19 weakened the investors' confidence and stock market volatility is increased at sectoral level. During extreme market conditions, investors showed herding behaviour by following the other investors rather than to believe on their own information. (P. K. Mishra & Mishra, 2021).

Investors were encouraged to invest in equity as their risk perception was decreased in the hope of bullish market. So, financial sectors were performing well but with reduced average return in comparison to rest of the economy(Rishika & Priti, 2021).

5.3.   Impact of Different Preventive Measures On Stock Market

The different preventive measures adopted by different authorities all over the world to control this pandemic, actually brought positive and negative results on stock market returns. As social distancing and lockdowns stopped entire economic activities, stock market returns declined very much. But on the other side, when number of confirmed cases started reducing due to these steps, investors got confidence and stock market bounced back again (Ashraf, 2020a).

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

Asian emerging markets are highly impacted by this pandemic in comparison to European emerging markets. The countries who adopted preventive measures timely, their stock markets are least sufferer by this virus. In the same way, the countries whose incentive packages of large amount, comparatively less affected. Negative impact, caused by this pandemic starts decreasing and financial markets reached to earlier score by mid-April (Topcu & Gulal, 2020).

Emerging countries are badly affected by covid-19 in comparison to developed countries. In the same way small firms faced more adverse impacts of this pandemic than large firms. The various measures taken by Government of different countries to control the negative impact of this pandemic are not proved as perfect antidote for small firms. (Harjoto, Rossi, & Paglia, 2021). The different policy measures implemented by Govt. to protect the troubled stock markets proved beneficial in short run but in long run an imbalance is created between investors' expectations. These preventive measures actually created a high level of uncertainty among emerging countries and push the world economy towards disintegration (D. Zhang et al., 2020).

The decision of imposing lockdown was taken as a positive step by the investors and BSE reacted positively with positive average returns but before lockdown, investors were panicked and it was displayed by negative returns (ALAM, ALAM, & CHAVALI, 2020).

Various policy measures adopted by Indian Govt. reduced tail risk but not covered the high uncertainty due to this pandemic. (Agarwalla, Varma, & Virmani, 2021).

China imposed lockdown to control this virus because the speed of transmission is very high and health system was incapable to treat a large no. of patients which required intensive care. This pandemic gives a lesson that investment in health system is crucial for economic development of a nation (Ftiti, Ben Ameur, & Louhichi, 2021).

The impact of harsh restrictions regarding closure of business units and schools to control this pandemic are very limited on liquidity of stock market. When investors are well informed about the risk of any pandemic, they can easily manage their portfolios and it promotes safe trading and enhances liquidity (Zaremba, Aharon, Demir, Kizys, & Zawadka, 2021).

The government interventions in G7 countries affected stock market return in a positive way and lockdown was most effective method to cover the covid-19 risk(Duttilo, Gattone, & Di Battista, 2021). The permanent volatility in stock market is increased due to this pandemic. China stock market is less affected due to timely and effective medical and economic response to covid-19(Bai, Wei, Wei, Li, & Zhang, 2021). Shanghai Composite Index bounced back as various measures were taken by Chinese Govt. to combat this covid-19 that shows the regained confidence of investors in stock markets(Ashraf, 2020a). The different containment steps by authorities brought economic disruptions for short term only. And in medium term, these steps boosted the investors' confidence and reduced uncertainty(Acharya & Liu, 2021). During this pandemic, the dependence among different industrial sectors increased in China. It shows the successful implementation of preventive measures by China govt. to control the pandemic(Wu & Hui, 2021). The government stringent actions affected solar stock prices more than number of confirmed cases. The confirmed cases of covid-19 and government actions produced negative results on solar energy stock prices but this negative impact is not significant in Non-OECD countries, so investors can transfer their fund from OECD countries to Non-OECD countries to reduce their risk(Wang, Chen, & Chang, 2021). The extreme monetary policy by US government to control stock

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

market volatility left no space to government to handle the on-going financial market downturn. In case of high stock market volatility caused by any health emergency, the loose monetary policy may play a significant role to reduce the volatility of stock market(Gao et al., 2021).

It is found that during this pandemic, stock markets of some countries are not performing according to efficient market hypothesis but they are responding according to behavioural finance theory like Italy, France and Germany. Investors in these stock markets are not affected by this virus until death cases are recorded there (Zeren & HIZARCI, 2020). Low interest rates and low taxes are required to boost confidence. Use of technology should be promoted in schools and offices(Li et al., 2021). There is a requirement of further research to understand the impacts of Governments strict provision on stock market returns.

It is necessary to disseminate quality information at appropriate time to increase market efficiency and for recovery from any emergency situation. (Tripathi & Pandey, 2021).

Proper co-ordination and co-operation among world banks and government is required at national level and international level to face the challenge and uncertainty created by this pandemic especially in tourism and exporting. Rising temperature is helpful to control the infection rate of this virus. Covid-19 created a huge economic and financial loss to the countries. Policymakers need to be concerned about uncertainty created by this pandemic (Sharma, Tiwari, Jain, Yadav, & Erkut, 2021). Leniency is to be given to cash crunched sectors like tourism and manufacturing by the bank authorities (H. Liu et al., 2020).

The fear created by this pandemic forced investors to demand more risk premium and ultimately causing negative stock market return. (Aggarwal, Nawn, & Dugar, 2021). To contain the negative impact of this pandemic, the complete lockdown is the only measure but it will pave the way to global recession. There is requirement of such a macro-economic model to calculate the cost of different measures to the global economy. This is the need of the time to focus on Make IN India initiative to focus on indigenous technology to develop a self-reliant economy. Stock markets will start recovery soon once the pandemic is over and recovery will be faster than expected (Praveen Kumar & Manoj Kumara, 2021).

Table 1: Summary of reviewed papers

Sr No	Title of Paper, Autors & Year	Research Methods	Country of Study	Data Source and Time Period	Major Findings
1	(Al-Awadhi et al., 2020)	Panel testing	China	Bloomberg, Worldometer Jan. 10 to March 16, 2020	Covid-19 affected stock market returns negatively.
2	(Zaremba et al., 2021)	Panel Regression	49 Countries	Data Stream Global Equity Indices Jan. 1 to April 3rd	Trading environment negatively impacted by government

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

				2020	restrictions. Govt. need to encourage public information system.
3	(Ashraf, 2020b)	Panel data analysis	64 Countries	www.investing.com and website of John Hopkins University Jan. 22 to April 17, 2020	Stock market negatively responded to increase in Covid-19 cases.
4	(Wang et al., 2021)	panel data mode	24 countries	https://www.macrotrends.net, https://ourworldindata.org Dec. 31, 2019 to June 4, 2020	Stock prices of solar energy were not significantly impacted by government restrictions and cases of Covid-19.
5	(Engelhardt et al., 2021)	Panel regression model	47 national stock markets	Johns Hopkins University, Trading Economics and Yahoo Finance Jan. 22nd to July 29th 2020	Stock markets of High trust countries are less volatile during announcement of Covid-19.
6	(Erdem, 2020)	Panel data regression	75 Countries	Bloomberg, and https://ourworldindata.org	Stock market volatility is highly impacted in less free countries in comparison to freer countries.
7	(Tripathi & Pandey, 2021)	Pool and panel fixed-effects methods, Heteroscedasticity	25 countries	Datastream-Eikon" database January 1, 2020 to April 30, 2020.	The information dissemination in a systematic way reduced the stock market volatility by contributing the recovery process positively.
8	(Ashraf, 2020a)	Pooled panel ordinary least squares regression model	77 Countries	John Hopkins University, www.investing.com website Jan. 22 to April 17, 2020	Stock market returns are impacted by restrictions imposed by government in dual way-direct negative and indirect positive impact.

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

9	(Papadamou et al., 2020)	Panel data analysis & robustness tests	13 stock markets, including USA, Europe, Asia, & Australia regions	Google trends Metrics Jan. 2 to April 9, 2020	Anxiety created due to Covid-19 increased risk in stock markets.
10	(Zeren & HIZARCI, 2020)	Maki co-integration test	China, South Korea, Italy, France, Spain and Germany	www.wordometer.info and www.uk.finance.yahoo.com 23 Jan. 23 to March 13, 2020	Crypto currency, old and derivatives were found to be the best option to invest during crises period to reduce risk.
11	(Albulescu, 2021)	A simple Ordinary Least Squares (OLS) regression	U.S.	S&P Dow Jones Indices, S&P 500 volatility index, Situation reports of WHO March 11, 2020 to May 15, 2020	US stock market became more volatile due to uncertainty caused by this pandemic.
12	(Topcu & Gulal, 2020)	A pooled Ordinary Least Squares regression method	26 stock markets of emerging economies	Worlddometer Statistics, Investing Database and Yahoo Finance Database March 10 to April 30, 2020	Asian countries are worst affected by Covid-19 in comparison to European countries.
13	(Rishika & Priti, 2021)	OLS method	India	NIFTY 50 & NSE Sectoral Indices July 8, 2019 to March 10, 2020 and March 11 to July 7, 2020	Indian stock market became more volatile during the pandemic.
14	(Takahashi & Yamada, 2021)	OLS estimation with clustering	Japan	Data measured and calculated by the self generated market-adjusted model Jan. to Dec. 2019	The companies with S and China exposure faced worse stock returns.

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

15	(Khan et al., 2020)	Pooled OLS regression, t-test, Mann-Whitney test	16 Countries	Weekly Panneled data constructed from stock exchange of that particular country April 9, 2019 to April 3, 2020	Chinese Government's strict actions to control this pandemic helped the investors in gaining confidence and stock markets bounced back.
16	(Harjoto, Rossi, Lee, et al., 2021)	Multivariate regressions	53 Emerging and 23 Developed Countries	WHO Situation Report (WHO website), major stock indices from the Bloomberg terminal January 14 to August 20, 2020	Stock market performances are negatively affected by Covid-19 confirmed and death cases.
17	(Fernandez-Perez et al., 2021)	Regression Model	Australia, France, China, Belgium, HongKong, Italy, Singapore,Finland, Spain, Sweden, Thailand and other 60 countries	John Hopkins University, Hofstede and Minkov (2010), Murray and Schaller (2010), Thomson Reuters Data Stream Start of Pandemic to March 11, 2020	The countries with high exposure to this pandemic and with high tendency to avoid uncertainty reacted more negatively.
18	(Agarwalla et al., 2021)	Multiple forward-looking measures of uncertainty	India	Indian stock markets (liquid Nifty index) Jan. 1 to May 31, 2020	Monetary easing methods and lockdown done by government played significant role to face uncertainty caused by this pandemic.
19	(Bhattacharya & Banerjee, 2021)	Pre and Post Covid Vulnerability comparison of states	Indian States	Indices of health vulnerability and economic vulnerability for 22 states of India	Some states in India are highly vulnerable for any pandemic like this.

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

20	(Q. He et al., 2020)	t-tests and Mann-Whitney tests	China, Italy, South Korea, France, pain, Germany, Japan and USA	cn.investing.com June 1, 2019 to March 16, 2020	This pandemic affected stock markets for a very short time.
21	(Mahata et al., 2021)	A stock price model constructed	India	Data is ggenerated artificially	To minimize the risk, investors prefer to invest in quality stocks during any pandemic.
22	(W. Zhang & Hamori, 2021)	Approach of Diebold & Yilmaz (2012) and Barunik and Krehlik (2018)	America, Japan, Germany	Infectious Disease Equity Market Volatility Tracker (IDEMVT), Crude Oil WTI Futures (WTI), S&P 500 Index (SP500), TOPIX Index (TOPIX) and DAX index (DAX) Jan. 4, 2006 to Aug. 31, 2020	Investors suffered heavy losses but for a short period.
23	(Chaudhary et al., 2020)	GLS regression	India	BSE website Jan. 2019 to May 2020	Indian stock market became more volatile due to high fear of this pandemic in investors.
24	(Aggarwal et al., 2021)	Regression	Australia, Canada, China Germany, US, Hongkong, UK, India, Japan, South Korea. Switzerland , Taiwan	Ravenpack and ourworldindata.org, Bloomberg Dec. 2019 to May 2020.	Lockdown brought two way impact on stock market returns i.e. both positive and negative.

25	(Ftiti et al., 2021)	Quantile Regression	China	Johns Hopkins Coronavirus Resource Center December 31, 2019 to April 7, 2020	This pandemic gave a lesson that health sector is crucial for each economy.
26	(Praveen Kumar & Manoj Kumara, 2021)	Correlation Analysis	India	Secondary data of Indian stock market from www.nseindia.com Jan. 1 to June 30, 2020	The role of mediator and transmission channel is played by investors fear during this pandemic.
27	(D. Zhang et al., 2020)	Volatility analysis, Correlation analysis	Top 10 Countries on the basis of confirmed cases on 27 March, 2020,	Indexes of all stock markets downloaded from investing.com, John Hopkins Corona virus Resource Center Up to March 27, 2020	Stock markets became more volatile and unpredictable. The unconventional policy can cause long term problems and disintegration among countries.
28	(Gao et al., 2021)	Wavelet-based quantile-on-quantile method	U.S. and China	WIND database, US Energy Information Administration Jan. 1 to Oct. 30, 2020	A new loose monetary policy is required to stabilize the market volatility.
29	(Sharma et al., 2021)	Wavelet Coherence	top-15 most affected countries	https://ourworldindata.org/grapher/daily-cases-COVID-19) Feb. 01 to May 13, 2020	Proper co ordination among international bodies is required to face any challenge like coid-19
30	(Yousfi et al., 2021)	Multivariate GARCH	U.S. and China	S&P 500 index and CSI 300 index Jan. 5, 2011 to Sept. 21, 2020	This pandemic brought harmful consequences for world economy in general and U stock market in particular.

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

31	(Farid et al., 2021)	MCS-GARCH model and Diebold-Yilmaz spillover index	U.S.	US ETFs to make the volatility connectedness network Jan. 2, 2019 to May 29, 2020	Volatility connectedness was very high among the different assets during Covid-19 pandemic.
32	(Li et al., 2021)	AR (1) – GARCH		Data of international stock market collected and analyzed in four panels: Dec. 16, 2019 to Dec. 16, 2020	Stock market and GDP were declined by 0.8 % and 0.56 % respectively with every 1 % increase in Covid-19 cases.
33	(Z. Liu et al., 2021)	GARCH-S model	China	China Stock Market & (CSMAR) database, Baidu database Jan. 2017 to Dec. 2019, June 2020 to March 2020	All companies of China performed poorly during this pandemic except IT and medicine manufacturing companies.
34	(Wu & Hui, 2021)	Multivariate GARCH model	China	WIND database August 1, 2019 to August 28, 2020	China government implemented preventive methods successfully to combat the adverse effect of Covid-19.
35	(Bora & Basistha, 2021)	Generalized autoregressive conditional heteroscedasticity model	India	Nifty and Sensex Sept. 3, 2019 - July 10, 2020	Stock market returns were higher before occurrence of Covid-19.
36	I (Bai et al., 2021)	An extended GARCH-MIDAS model	US, China, UK and Japan	S&P 500, CSI 300, FESE 100 and NIKKEI 225 Jan 2005 to April 2020	Stock market became more volatile and reacted in different way with different type of measures adopted by various governments.

37	(Nguyen et al., 2021)	GARCH(1,1) model with a Student t-distribution	U.S. and China	Datastream database July 1, 2019 - June 30, 2020	Volatility spillover was very weak during this pandemic.
38	(Duttilo et al., 2021)	Threshold GARCH(1,1)-in-Mean model	Euro countries	Investing.com website Jan. 4, 2016 to Dec. 31, 2020	Stock market of Euro countries became more volatile during this pandemic.
39	(Acharya & Liu, 2021)	GARCH model and an ARIMA mode	Italy, Germany, France and U.S.	English newspapers, tweets, videos and government websites Jan. 2 to Oct. 29, 2020	Stringent actions taken by the governments of the countries under study caused economic disruption in short term but in medium term it boosted investor's confidence.
40	(Dai et al., 2021)	GARCHS (GARCH with skewness) model	U.S.	https://ourworldindata.org/coronavirus Feb. 14 to March 23, 2020	The study suggested that if government implements pro-active measures in time, it reduces the uncertainty of economic policy % can prevent stock market crash risk.
41	(P. K. Mishra & Mishra, 2021)	GARCH Model	India	NSE website 1 August 2019 to 28 July 2020.	In financial services, Herding behavior is displayed by investors by not trusting their own information
42	(Hetkamp et al., 2020)	Generalized-Anxiety-Disorder-7 (GAD-7) with seven items on a	German public	Data from 16245 individuals via online channels March 10, 2020	The fear caused by Covid-19 declined to the earlier level with in the period of six weeks that shows habituation

		four point Likert-scale		to April 30, 2020	to any pandemic.
43	(Thomas et al., 2020)	Analytical research, T-Test, One Way ANOVA	India	Website of National Stock Exchange www1.nseindia.com March 25 to April 14,2020	Nifty showed negative performance bt started rising with the announcement of stimulus packages by government.
44	(Barbate et al., 2021)	A decision-tree approach	India	Businessinsider.com Tradingeconomics.com BBC news and compiled by author 2020-2025	The present study depicted that the Covid-19 will affect the economy. The study also highlighted the various modes of recovery of economy; strong, moderate and weak recovery modes.
45	(Guru & Das, 2021)	Diebold-Yilmaz spillover analysis	India	BSE India website Jan. 1, 2015 to Oct. 9, 2020	Volatility spillover was introduced in stock market during Covid-19.
46	(Ding et al., 2020)	VAR model	China	FactSet, NASDAQ Jan. 1 to April 30, 2020	Stock market resilience was moderated by digital transformation during Covid-19.
47	(Baek et al., 2020)	A Markov Switching AR model.	U.S.	Johns Hopkins Coronavirus Resource Center, FRED3 database, Kenneth French data library4, and Bloomberg Jan. 02, 2020 to April 30, 2020	Negative news about deaths were more impactful in comparison to positive news about recoveries.
48	(Sinha, 2021)	Autoregressive distributed lag	India	Google online search data, NSE Nifty Index and BSE Sensex	Economic and social attention in Google search showed a robust

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

		(ARDL) model and GARCH		Index https://trends.google.com Jan.1 to May 30, 2020	co-integrating impact for Nifty Index
49	(A. K. Mishra et al., 2020)	Markov switching vector autoregression	India	CEIC database Jan. 3, 2003 to April 20, 2020	Covid-19 severely affected the stock market returns in comparison to GST and demonetization.
50	(Khanthavit, 2020)	Event-study method	French, German, Italian, Spanish, U.K., U.S., Chinese, Philippine, and Thai stocks	MSCI database (www.msci.com/end-of-day-data-country) August, 27, 2018 to April 8, 2020	Stock markets reacted more negatively to media news about Covid-19 and its declaration as pandemic in comparison to occurrence of actual situations.
51	(Cox et al., 2020)	GLL model, Event Study	U.S.	Federal Reserve announcements Jan. 01 to May 05, 2020	The stock markets movements during Covid-19 were affected by sentiments rather than substance.
52	(Harjoto, Rossi, & Paglia, 2021)	Event study method.	Developed countries and emerging countries	MSCI stock indices like MXWOU, MXUS, MXEF, MXUSLC and MXUSSC from Bloomberg March 13, 2019 to April 23, 2020	Stock markets faced a shock when WHO announced Covid-19 as a global pandemic. But Federal Reserve announcement brought positive abnormal returns to US stock market in comparison to emerging markets.
53	(Mittal & Sharma, 2021)	Event study method	India	BSE website and e-research May, 15, 2019 to April, 24, 2020	The pharmaceutical and health sectors got cumulative abnormal returns during this pandemic.

Research Paper
Impact Factor: 6.462
Peer Reviewed & Indexed Journal
www.ijmsrr.com

IJMSRR
E- ISSN - 2349-6746
ISSN -2349-6738

54	(ALAM et al., 2020)	Market Model Event study	India	BSE Feb. 24 to April 17, 2020	The decision of lockdown was welcomed by the investors and brought positive returns to Indian stock market.
55	(Lee & Lu, 2021)	Event study approach	Taiwan	Taiwan Stock Exchange Jan. 01 to May 30, 2020	Stock prices are merely affected in case of CSR companies in comparison to non-CSR companies.
56	(Huo & Qiu, 2020)	Event study	China	China Stock Market and Accounting Research Database (CSMAR) Jan 22 to March 03, 2020,	Chinese stock market got a great shock on announcement of lockdown by Chinese government and retail investors reacted more aggressively to this pandemic.
57	(Rajamohan et al., 2020)	Event Study	India	Secondary data from NSE Oct. 07, 2019 to March 19, 2020	Stock markets of India witnessed a sharp decline when investors turned their investments to dollar based assets during this pandemic.
58	(H. Liu et al., 2020)	An event study method	Major affected countries (Japan, Korea, Singapore, USA, Italy, Germany and UK etc.)	Dow Jones Global Index, website Investing.com 21 Feb. 21, 2019 to March 18, 2020	In comparison to other countries, Asian countries got more negative returns during this pandemic.

| 59 | (P. He et al., 2020) | Event study approach | China | CSMAR database June 3, 2019, to March 13, 2020 | Some industries like IT, education, manufacturing & health care were resilient to this pandemic while some other faced adverse impact like transportation, mining, electricity eating, environment industries etc. |
| 60 | (Malik et al., 2020) | EY analysis | India | VCC Edge data, Preqin May, 2019 to May, 2020 | Covid-19 caused uncertainty creates many opportunities for PE fund, if these companies work strategically. |

6.   Conclusion

In this paper comprehensive literature analysis of impact on stock market return and policy measures adopted to control the negative effects of covid-19 has been done to find the research gap. As the different strains of this virus are coming and unfortunately India has faced three waves of this pandemic, so the effect of this pandemic on stock markets is an important and emerging area of research. This pandemic actually increased risk and volatility of stock markets. So further research can be conducted to analyse the impact of different waves of pandemic on stock market return and volatility. Here better option need to be searched for investors of less advanced countries like India. Hence additional scope of research is to study the investor behaviour after this pandemic.

The different policy measures adopted by different countries worldwide to revive stock markets and economies would be beneficial in short run. In long run, these steps may spread further uncertainty in global markets and create problems for developing economies. Thus, there is requirement of research to study the effectiveness of such policies and measures that ensure development of stock markets and economies after pandemic. Different countries are responding differently at national level, it would push the world towards disintegration that would be more dangerous than this virus. This is the need of the time to work collectively at global level to face this challenge.

7.   Discussion and Future Research Directions

There is a requirement of further research to critically evaluate the reasons for increased volatility of stock markets at the beginning of this pandemic and reasons for revival of stock markets very soon in a very short span of time. Also, it is required to study whether the adopted preventive measures were sufficient that time to control the movements of stock markets. A detailed study of investor's behavior and their expectation about future earnings need to be performed. As most of the work is performed in developed stock markets, it is need of the time to include marginalized economies in study.

Most of the work is performed by using GARCH model, panel data analysis and OLS methods on secondary data to study the market movements during and after this pandemic. To broaden the area of this study, primary data along with secondary can be analyzed for better understanding. Here is also the requirement to study this topic in long time horizons for better clarity. A great need to be innovative at the time of selecting the methodology for evaluating the impact of any pandemic on stock market movements.

8. Executive Summary
In this paper, a literature review is conducted of available research work on impact of covid-19 on Indian stock market. For this, multiple databases and cross references were searched to get relevant papers on this topic and then 60 papers were selected for review purpose. The whole work is divided into four sections. The first section defines the meaning of volatility and nature of volatility in Indian stock market. The 2nd section includes the techniques and methods adopted to review the existing work. The next section describes the summary that explains the impact of this pandemic on stock markets of various countries and how the different preventive measures remained beneficial to control the negative impact of sudden outbreak of covid-19 on various stock markets. The finding of the paper is that the risk and uncertainty raised due to covid-19 substantially increased the volatility in stock markets and emerging countries are worst affected by this pandemic in comparison to developed countries. But when preventive measures adopted by authorities, investors got their confidence back and it was reflected by positive stock returns. It is the requirement to develop a model through which the overall impact of any pandemic can be measured on the movements of stock markets.

Declaration of Conflicting Interests
The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

References
1. Abdullah, Samsuri, Mansor, Amalina Abu, Napi, Nur Nazmi Liyana Mohd, Mansor, Wan Nurdiyana Wan, Ahmed, Ali Najah, Ismail, Marzuki, & Ramly, Zamzam Tuah Ahmad. (2020). Air quality status during 2020 Malaysia Movement Control Order (MCO) due to 2019 novel coronavirus (2019-nCoV) pandemic. *Science of The Total Environment, 729*, 139022. doi: https://doi.org/10.1016/j.scitotenv.2020.139022
2. Acharya, Viral V., & Liu, Yang. (2021). COVID-19 Containment Measures and Expected Stock Volatility: High-Frequency Evidence from Selected Advanced Economies. *IMF Working Papers, 2021*(157), A001. doi: 10.5089/9781513573502.001.a001
3. Acter, Thamina, Uddin, Nizam, Das, Jagotamoy, Akhter, Afroza, Choudhury, Tasrina Rabia, & Kim, Sunghwan. (2020). Evolution of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) as coronavirus disease 2019 (COVID-19) pandemic: A global health emergency. *Science of The Total Environment, 730*, 138996. doi: https://doi.org/10.1016/j.scitotenv.2020.138996
4. Agarwalla, Sobhesh Kumar, Varma, Jayanth R., & Virmani, Vineet. (2021). The impact of COVID-19 on tail risk: Evidence from Nifty index options. *Economics Letters, 204*, 109878. doi: https://doi.org/10.1016/j.econlet.2021.109878

5. Aggarwal, Shobhit, Nawn, Samarpan, & Dugar, Amish. (2021). What caused global stock market meltdown during the COVID pandemic–Lockdown stringency or investor panic? *Finance Research Letters, 38*, 101827. doi: https://doi.org/10.1016/j.frl.2020.101827

6. Al-Awadhi, Abdullah M., Alsaifi, Khaled, Al-Awadhi, Ahmad, & Alhammadi, Salah. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. *Journal of Behavioral and Experimental Finance, 27*, 100326. doi: https://doi.org/10.1016/j.jbef.2020.100326

7. ALAM, Mohammad Noor, ALAM, Md Shabbir, & CHAVALI, Kavita. (2020). Stock market response during COVID-19 lockdown period in India: An event study. *The Journal of Asian Finance, Economics, and Business, 7*(7), 131-137.

8. Albulescu, Claudiu Tiberiu. (2021). COVID-19 and the United States financial markets' volatility. *Finance Research Letters, 38*, 101699. doi: https://doi.org/10.1016/j.frl.2020.101699

9. Arin, K. Peren, Ciferri, Davide, & Spagnolo, Nicola. (2008). The price of terror: The effects of terrorism on stock market returns and volatility. *Economics Letters, 101*(3), 164-167. doi: https://doi.org/10.1016/j.econlet.2008.07.007

10. Ashraf, Badar Nadeem. (2020a). Economic impact of government interventions during the COVID-19 pandemic: International evidence from financial markets. *Journal of Behavioral and Experimental Finance, 27*, 100371. doi: https://doi.org/10.1016/j.jbef.2020.100371

11. Ashraf, Badar Nadeem. (2020b). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance, 54*, 101249. doi: https://doi.org/10.1016/j.ribaf.2020.101249

12. Baek, Seungho, Mohanty, Sunil K., & Glambosky, Mina. (2020). COVID-19 and stock market volatility: An industry level analysis. *Finance Research Letters, 37*, 101748. doi: https://doi.org/10.1016/j.frl.2020.101748

13. Bai, Lan, Wei, Yu, Wei, Guiwu, Li, Xiafei, & Zhang, Songyun. (2021). Infectious disease pandemic and permanent volatility of international stock markets: A long-term perspective. *Finance Research Letters, 40*, 101709. doi: https://doi.org/10.1016/j.frl.2020.101709

14. Barbate, Vikas, Gade, Rajesh N., & Raibagkar, Shirish S. (2021). COVID-19 and Its Impact on the Indian Economy. *Vision, 25*(1), 23-35. doi: 10.1177/0972262921989126

15. Bhattacharya, Mihir, & Banerjee, Panchali. (2021). COVID-19: Indices of economic and health vulnerability for the Indian states. *Social Sciences & Humanities Open, 4*(1), 100157. doi: https://doi.org/10.1016/j.ssaho.2021.100157

16. Bora, Debakshi, & Basistha, Daisy. (2021). The outbreak of COVID-19 pandemic and its impact on stock market volatility: Evidence from a worst-affected economy. *Journal of Public Affairs*, e2623.

17. Chaudhary, R, Bakhshi, P, & Gupta, H. (2020). The performance of the Indian stock market during COVID-19. Investment Management and Financial Innovations, 17 (3), 133–147.

18. Cox, Josue, Greenwald, Daniel L, & Ludvigson, Sydney C. (2020). What Explains the COVID-19 Stock Market? : National Bureau of Economic Research.

19. Dai, Peng-Fei, Xiong, Xiong, Liu, Zhifeng, Huynh, Toan Luu Duc, & Sun, Jianjun. (2021). Preventing crash in stock market: The role of economic policy uncertainty during COVID-19. *Financial Innovation, 7*(1), 31. doi: 10.1186/s40854-021-00248-y

20. DH Web Desk (2020). Coronavirus India update: State-wise total number of confirmed cases, deaths on April 17. . (2020, April 20, 2020). *Deccanherald Online Newspaper,*. Retrieved from https://www.deccanherald.com/national/coronavirus-india-updatestate-wise-total-number-of-confirmed-cases-deaths-onapril-17-826340.html

21. Ding, Ding, Guan, Chong, Chan, Calvin M. L., & Liu, Wenting. (2020). Building stock market resilience through digital transformation: using Google trends to analyze the impact of COVID-19 pandemic. *Frontiers of Business Research in China, 14*(1), 21. doi: 10.1186/s11782-020-00089-z

22. Duttilo, Pierdomenico, Gattone, Stefano Antonio, & Di Battista, Tonio. (2021). Volatility Modeling: An Overview of Equity Markets in the Euro Area during COVID-19 Pandemic. *Mathematics, 9*(11), 1212.

23. Engelhardt, Nils, Krause, Miguel, Neukirchen, Daniel, & Posch, Peter N. (2021). Trust and stock market volatility during the COVID-19 crisis. *Finance Research Letters, 38*, 101873. doi: https://doi.org/10.1016/j.frl.2020.101873

24. Erdem, Orhan. (2020). Freedom and stock market performance during Covid-19 outbreak. *Finance research letters, 36*, 101671-101671. doi: 10.1016/j.frl.2020.101671

25. Farid, Saqib, Kayani, Ghulam Mujtaba, Naeem, Muhammad Abubakr, & Shahzad, Syed Jawad Hussain. (2021). Intraday volatility transmission among precious metals, energy and stocks during the COVID-19 pandemic. *Resources Policy, 72*, 102101. doi: https://doi.org/10.1016/j.resourpol.2021.102101

26. Fernandez-Perez, Adrian, Gilbert, Aaron, Indriawan, Ivan, & Nguyen, Nhut H. (2021). COVID-19 pandemic and stock market response: A culture effect. *Journal of Behavioral and Experimental Finance, 29*, 100454. doi: https://doi.org/10.1016/j.jbef.2020.100454

27. Ftiti, Zied, Ben Ameur, Hachmi, & Louhichi, Waël. (2021). Does non-fundamental news related to COVID-19 matter for stock returns? Evidence from Shanghai stock market. *Economic Modelling, 99*, 105484. doi: https://doi.org/10.1016/j.econmod.2021.03.003

28. Gao, Xue, Ren, Yixin, & Umar, Muhammad. (2021). To what extent does COVID-19 drive stock market volatility? A comparison between the U.S. and China. *Economic Research-Ekonomska Istraživanja*, 1-21. doi: 10.1080/1331677X.2021.1906730

29. Guru, Biplab Kumar, & Das, Amarendra. (2021). COVID-19 and uncertainty spillovers in Indian stock market. *MethodsX, 8*, 101199. doi: https://doi.org/10.1016/j.mex.2020.101199

30. Harjoto, Maretno Agus, Rossi, Fabrizio, Lee, Robert, & Sergi, Bruno S. (2021). How do equity markets react to COVID-19? Evidence from emerging and developed countries. *Journal of Economics and Business, 115*, 105966. doi: https://doi.org/10.1016/j.jeconbus.2020.105966

31. Harjoto, Maretno Agus, Rossi, Fabrizio, & Paglia, John K. (2021). COVID-19: stock market reactions to the shock and the stimulus. *Applied Economics Letters, 28*(10), 795-801. doi: 10.1080/13504851.2020.1781767

32. He, Pinglin, Sun, Yulong, Zhang, Ying, & Li, Tao. (2020). COVID–19's Impact on Stock Prices Across Different Sectors—An Event Study Based on the Chinese Stock Market. *Emerging Markets Finance and Trade, 56*(10), 2198-2212. doi: 10.1080/1540496X.2020.1785865

33. He, Qing, Liu, Junyi, Wang, Sizhu, & Yu, Jishuang. (2020). The impact of COVID-19 on stock markets. *Economic and Political Studies, 8*(3), 275-288. doi: 10.1080/20954816.2020.1757570

34. Hetkamp, Madeleine, Schweda, Adam, Bäuerle, Alexander, Weismüller, Benjamin, Kohler, Hannah, Musche, Venja, . . . Skoda, Eva-Maria. (2020). Sleep disturbances, fear, and generalized anxiety during the COVID-19 shut down phase in Germany: relation to infection rates, deaths, and German stock index DAX. *Sleep Medicine, 75*, 350-353. doi: https://doi.org/10.1016/j.sleep.2020.08.033

35. Higgins, Julian PT, Thomas, James, Chandler, Jacqueline, Cumpston, Miranda, Li, Tianjing, Page, Matthew J, & Welch, Vivian A. (2019). *Cochrane handbook for systematic reviews of interventions*: John Wiley & Sons.

36. Holshue, Michelle L., DeBolt, Chas, Lindquist, Scott, Lofy, Kathy H., Wiesman, John, Bruce, Hollianne, . . . Pillai, Satish K. (2020). First Case of 2019 Novel Coronavirus in the United States. *New England Journal of Medicine, 382*(10), 929-936. doi: 10.1056/NEJMoa2001191

37. Huo, Xiaolin, & Qiu, Zhigang. (2020). How does China's stock market react to the announcement of the COVID-19 pandemic lockdown? *Economic and Political Studies, 8*(4), 436-461. doi: 10.1080/20954816.2020.1780695

38. Kabir, Md Tanvir, Uddin, Md Sahab, Hossain, Md Farhad, Abdulhakim, Jawaher A., Alam, Md Asraful, Ashraf, Ghulam Md, . . . Aleya, Lotfi. (2020). nCOVID-19 Pandemic: From Molecular Pathogenesis to Potential Investigational Therapeutics. *Frontiers in cell and developmental biology, 8*, 616-616. doi: 10.3389/fcell.2020.00616

39. Khan, Karamat, ZHAO, Huawei, Zhang, Han, Yang, Huilin, Shah, Muhammad Haroon, & Jahanger, Atif. (2020). The impact of COVID-19 pandemic on stock markets: An empirical analysis of world major stock indices. *The Journal of Asian Finance, Economics, and Business, 7*(7), 463-474.

40. Khanthavit, Anya. (2020). World and national stock market reactions to COVID-19. *ABAC Journal, 40*(2).

41. Lee, Kuo-Jung, & Lu, Su-Lien. (2021). The Impact of COVID-19 on the Stock Price of Socially Responsible Enterprises: An Empirical Study in Taiwan Stock Market. *International Journal of Environmental Research and Public Health, 18*(4), 1398.

42. Li, Weiqing, Chien, Fengsheng, Kamran, Hafiz Waqas, Aldeehani, Talla M., Sadiq, Muhammad, Nguyen, Van Chien, & Taghizadeh-Hesary, Farhad. (2021). The nexus between COVID-19 fear and stock market volatility. *Economic Research-Ekonomska Istraživanja*, 1-22. doi: 10.1080/1331677X.2021.1914125

43. Liu, HaiYue, Manzoor, Aqsa, Wang, CangYu, Zhang, Lei, & Manzoor, Zaira. (2020). The COVID-19 Outbreak and Affected Countries Stock Markets Response. *International Journal of Environmental Research and Public Health, 17*(8), 2800.

44. Liu, Zhifeng, Huynh, Toan Luu Duc, & Dai, Peng-Fei. (2021). The impact of COVID-19 on the stock market crash risk in China. *Research in International Business and Finance, 57*, 101419. doi: https://doi.org/10.1016/j.ribaf.2021.101419

45. Mahata, Ajit, Rai, Anish, Nurujjaman, Md, & Prakash, Om. (2021). Modeling and analysis of the effect of COVID-19 on the stock price: V and L-shape recovery. *Physica A: Statistical Mechanics and its Applications, 574*, 126008. doi: https://doi.org/10.1016/j.physa.2021.126008

46. Malik, Kunjana, Sharma, Sakshi, & Kaur, Manmeet. (2020). COVID-19 and the Indian Private Equity Industry: Time to Use the Dry Powder. *Vision, 24*(3), 255-259. doi: 10.1177/0972262920942047

47. Mishra, Alok Kumar, Rath, Badri Narayan, & Dash, Aruna Kumar. (2020). Does the Indian Financial Market Nosedive because of the COVID-19 Outbreak, in Comparison to after Demonetisation and the GST? *Emerging Markets Finance and Trade, 56*(10), 2162-2180. doi: 10.1080/1540496X.2020.1785425

48. Mishra, P. K., & Mishra, S. K. (2021). Do Banking and Financial Services Sectors Show Herding Behaviour in Indian Stock Market Amid COVID-19 Pandemic? Insights from Quantile Regression Approach. *Millennial Asia*, 09763996211032356. doi: 10.1177/09763996211032356

49. Mittal, Shivam, & Sharma, Dipasha. (2021). The impact of COVID-19 on stock returns of the Indian healthcare and pharmaceutical sector. *Australasian Accounting, Business and Finance Journal, 15*(1), 5-21.

50. Nguyen, Dat Thanh, Phan, Dinh Hoang Bach, Ming, Tee Chwee, & Nguyen, Van Ky Long. (2021). An assessment of how COVID-19 changed the global equity market. *Economic Analysis and Policy, 69*, 480-491. doi: https://doi.org/10.1016/j.eap.2021.01.003

51. Pandey, Alok, & Kumar, Surya Bhushan. (2011). Volatility Transmission from Global Stock Exchanges to India: An Empirical Assessment. *Vision, 15*(4), 347-360. doi: 10.1177/097226291101500404

52. Papadamou, Stephanos, Fassas, Athanasios, Kenourgios, Dimitris, & Dimitriou, Dimitrios. (2020). Direct and indirect effects of COVID-19 pandemic on implied stock market volatility: Evidence from panel data analysis.

53. Praveen Kumar, M., & Manoj Kumara, N. V. (2021). Market capitalization: Pre and post COVID-19 analysis. *Materials Today: Proceedings, 37*, 2553-2557. doi: https://doi.org/10.1016/j.matpr.2020.08.493

54. Rajamohan, S, Sathish, A, & Rahman, Abdul. (2020). Impact of COVID-19 on stock price of NSE in automobile sector. *The International Journal of Advanced Multidisciplinary Research, 7*(7), 24-29.

55. Rishika, Shankar, & Priti, Dubey. (2021). Indian Stock Market during the COVID-19 Pandemic: Vulnerable or Resilient?: Sectoral analysis. *Organizations and Markets in Emerging Economies, 12*(1). doi: 10.15388/omee.2021.12.51

56. Sharma, Gagan Deep, Tiwari, Aviral Kumar, Jain, Mansi, Yadav, Anshita, & Erkut, Burak. (2021). Unconditional and conditional analysis between covid-19 cases, temperature, exchange rate and stock markets using wavelet coherence and wavelet partial coherence approaches. *Heliyon, 7*(2), e06181. doi: https://doi.org/10.1016/j.heliyon.2021.e06181

57. Sinha, Paritosh Chandra. (2021). Attention to the Fads and Fashions in the Indian Stock Markets During COVID-19. *Vision*, 09722629211002577. doi: 10.1177/09722629211002577

58. Takahashi, Hidenori, & Yamada, Kazuo. (2021). When the Japanese stock market meets COVID-19: Impact of ownership, China and US exposure, and ESG channels. *International Review of Financial Analysis, 74*, 101670. doi: https://doi.org/10.1016/j.irfa.2021.101670

59. Thomas, TC, Sankararaman, G, & Suresh, S. (2020). Impact of COVID-19 announcements on nifty stocks. *Journal of Critical Reviews, 7*(13), 471-475.

60. Topcu, Mert, & Gulal, Omer Serkan. (2020). The impact of COVID-19 on emerging stock markets. *Finance Research Letters, 36*, 101691. doi: https://doi.org/10.1016/j.frl.2020.101691

61. Tripathi, Abhinava, & Pandey, Ashish. (2021). Information dissemination across global markets during the spread of COVID-19 pandemic. *International Review of Economics & Finance, 74*, 103-115. doi: https://doi.org/10.1016/j.iref.2021.02.004

62. Wang, Quan-Jing, Chen, Di, & Chang, Chun-Ping. (2021). The impact of COVID-19 on stock prices of solar enterprises: A comprehensive evidence based on the government response and confirmed cases. *International Journal of Green Energy, 18*(5), 443-456. doi: 10.1080/15435075.2020.1865367

63. Wordometer, Reported Cases and Deaths by Country or Territory.). Retrieved 2nd June, 2021, 2021, from https://www.worldometers.info/coronavirus/

64. Wu, Xianbo, & Hui, Xiaofeng. (2021). The Impact of COVID-19 on the Dependence of Chinese Stock Market. *Discrete Dynamics in Nature and Society, 2021*, 5588562. doi: 10.1155/2021/5588562

65. Yan, Yuxin, Shin, Woo I., Pang, Yoong X., Meng, Yang, Lai, Jianchen, You, Chong, . . . Pang, Cheng H. (2020). The First 75 Days of Novel Coronavirus (SARS-CoV-2) Outbreak: Recent Advances, Prevention, and Treatment. *International Journal of Environmental Research and Public Health, 17*(7). doi: 10.3390/ijerph17072323

66. Yang, Shaohua, Isa, Salmi Mohd, & Ramayah, T. (2021). How Are Destination Image and Travel Intention Influenced by Misleading Media Coverage? Consequences of COVID-19 Outbreak in China. *Vision*, 0972262921993245. doi: 10.1177/0972262921993245

67. Yousfi, Mohamed, Ben Zaied, Younes, Ben Cheikh, Nidhaleddine, Ben Lahouel, Béchir, & Bouzgarrou, Houssem. (2021). Effects of the COVID-19 pandemic on the US stock market and uncertainty: A comparative assessment between the first and second waves. *Technological Forecasting and Social Change, 167*, 120710. doi: https://doi.org/10.1016/j.techfore.2021.120710

68. Zaremba, Adam, Aharon, David Y., Demir, Ender, Kizys, Renatas, & Zawadka, Dariusz. (2021). COVID-19, government policy responses, and stock market liquidity around the world: A note. *Research in International Business and Finance, 56*, 101359. doi: https://doi.org/10.1016/j.ribaf.2020.101359

69. Zeren, Feyyaz, & HIZARCI, Atike. (2020). The impact of COVID-19 coronavirus on stock markets: evidence from selected countries. *Muhasebe ve Finans İncelemeleri Dergisi, 3*(1), 78-84.

70. Zhang, Dayong, Hu, Min, & Ji, Qiang. (2020). Financial markets under the global pandemic of COVID-19. *Finance Research Letters, 36*, 101528. doi: https://doi.org/10.1016/j.frl.2020.101528

71. Zhang, Wenting, & Hamori, Shigeyuki. (2021). Crude oil market and stock markets during the COVID-19 pandemic: Evidence from the US, Japan, and Germany. *International Review of Financial Analysis, 74*, 101702. doi: https://doi.org/10.1016/j.irfa.2021.101702

72. Zhou, Peng, Yang, Xing-Lou, Wang, Xian-Guang, Hu, Ben, Zhang, Lei, Zhang, Wei, . . . Shi, Zheng-Li. (2020). A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature, 579*(7798), 270-273. doi: 10.1038/s41586-020-2012-7