International Journal of Contemporary Issues in Social Sciences
Volume 2, Issue 3, 2023 ISSN(P):2959-3808 | 2959-2461

THE COVID-19 EFFECTS ON STOCK MARKETS OF EMERGING COUNTRIES: ANALYSES OF SAARC COUNTRIES

Waseem Ahmad Khan[*1], Komal Shahzadi[2]

[*1]PhD Scholar in Abasyn University Peshawar,
[2]M.phil Scholar in Lahore Business School, University of Lahore

[*1]Waseemkhattak.islamian@gmail.com, [2]komalchaudhry100@gmail.com

Corresponding Author: *

Received: 02 September, 2023 **Revised:** 29 October, 2023 **Accepted:** 13 November, 2023 **Published:** 25, November 2023

ABSTRACT

The COVID-19 pandemic has left an indelible mark on societies and economies across the globe. This study focuses on the impact of COVID-19 on stock market performance in the South Asian Association for Regional Cooperation (SAARC) countries, namely India, Pakistan, Bangladesh, Sri Lanka, the Maldives, and Bhutan. The purpose of this research is to examine how the pandemic, with its distinct phases, affected stock market returns in these nations. To achieve this objective, we employ the event study methodology, a widely accepted approach in empirical investigations. We analyze the relationship between COVID-19 daily total deaths and daily total cases and stock markets in SAARC countries. Cointegration tests are used to assess the relationship between COVID-19 severity and stock market performance. The findings reveal that the COVID-19 pandemic had a substantial impact on stock market returns in SAARC countries. During the initial phase of the pandemic and country-imposed lockdowns, stock returns experienced significant declines. A 1% increase in COVID-19 cases or deaths was associated with a 5% decrease in stock returns. Furthermore, the study underscores the importance of psychological factors in market behavior, as not all stock markets exhibited similar reactions to the absence of death cases. This research contributes to the existing body of knowledge by exploring the impact of COVID-19 on stock markets in the SAARC countries, a region with unique economic and cultural characteristics. The study's novel approach in examining the pandemic's distinct phases provides a nuanced understanding of how stock markets reacted during various stages of the crisis. The study also highlights the behavioral dynamics at play in emerging market economies, where investor sentiment can play a significant role in market movements. In conclusion, this research underscores the profound influence of COVID-19 on stock market performance in SAARC countries and provides valuable insights for investors, policymakers, and researchers in understanding the complex relationship between pandemics and financial markets. As the world continues to grapple with the repercussions of the pandemic, the study's findings hold relevance for future economic and financial planning.

Keywords: Covid 19, Stock, Markets, SAARC

INTRODUCTION

STATEMENT OF THE TOPIC AND AIM:

Throughout history, numerous epidemic diseases have caused significant loss of human lives. The most devastating in terms of fatalities was the Black Death, also known as the "plague outbreak," which resulted in the deaths of an estimated 75-100 million individuals between 1347 and 1351 (Smith, 2019). Other notable epidemics include the bleeding fever epidemic in Mexico from 1545 to 1548, cholera outbreaks between 1899 and 1923, the appearance of the AIDS virus in Cameroon in 1908, and the Severe Acute Respiratory Syndrome (SARS) epidemic in 2002 and 2003 in Asia and Canada, along with others such as Ebola and Swine Flu.

The COVID-19 coronavirus, declared a pandemic by the World Health Organization (WHO) on March 12, 2020, is the most recent global epidemic (WHO, 2020). COVID-19 was first identified in December 2019 in Wuhan, Hubei Province, China (Estrada et al., 2020). Within a short period, it spread rapidly across the world, affecting nearly all aspects of life. By March 26, the virus had already claimed over 22,000 lives within three months, causing a significant impact on global society and economies (Estrada et al., 2020).

The pandemic's impact extended to international trade and the cultural and social activities of people worldwide. China's economic development suffered a decline in 2020, leading to downgrades by credit rating agencies Moody's and S&P (Zareen, 2020). Many countries halted imports and exports to and from China, and major companies like Honda, Nissan, General Motors, Peugeot, Renault, and Toyota postponed their manufacturing operations in China. Alongside these consequences, it is likely that exchange rates, GDP, and stock returns have also been affected. Zareen (2020) conducted research on the impact of COVID-19 on stock markets in emerging and developed countries, focusing on countries such as China, France, South Korea, Germany, Spain, and Italy. The countries were selected based on the severity of the virus's impact. Zareen (2020) employed cointegration analysis to investigate the relationship between COVID-19 severity and stock returns.

Although studies on the connection between pandemics and stock markets exist, research on the relationship between COVID-19 and stock market volatility in SAARC countries is scarce. Some country-specific studies have been conducted, such as Waris (2020) and Abid (2020) in Pakistan, Gupta (2020) and Chatterjee (2020) in India, Mamun (2020) in Bangladesh, LeVine (2020) in Bhutan, and SUZANA (2020) in the Maldives. Given the significance of SAARC countries and the existing gap in the literature, there has been no prior study on the association between pandemics and stock markets in SAARC countries. This study aims to examine how the COVID-19 pandemic affects stock market returns in SAARC countries. To the best of the researcher's knowledge, this study is the first to assess the impact of virus severity on different phases of stock returns in SAARC countries.

In light of the significance of SAARC countries and the need to address the scarcity of literature on the COVID-19 pandemic's impact on stock markets and its changing nature, this research aims to answer the following questions:

What is the impact of the COVID-19 pandemic on the stock market performance of SAARC countries?

What is the impact of different phases of COVID-19 on stock market returns in SAARC countries?

This study has two main objectives:

To describe the effects of the COVID-19 pandemic on stock market returns in the developing economies of SAARC countries.

To provide insights into the stock market's reactions during different phases of the COVID-19 pandemic.

The COVID-19 pandemic disrupted people's daily lives worldwide, and SAARC countries were no exception. The SAARC organization, founded in 1985, consists of member countries including Pakistan, Bangladesh, India, Sri Lanka, Bhutan, Nepal, and the Maldives. These countries vary in size, location, and diversity, making them uniquely significant. The countries selected for this study are emerging and developing economies, and their stock markets are known to be sensitive to crisis situations. Therefore, this study holds unique importance as it investigates the impact of the COVID-19 pandemic on stock market reactions in SAARC countries. The severity of the pandemic is assessed by the ratio of COVID-19-related deaths to the number of reported positive cases on a daily basis. A higher ratio indicates a greater severity of the pandemic, while the stock market index of each country serves as the outcome variable for this study.

The COVID-19 pandemic originated in Wuhan, Hubei Province, China, with the Chinese authorities notifying the World Health Organization (WHO) on December 31, 2019, about numerous cases of pneumonia of unknown etiology (WHO, 2020). Positive cases of the virus had already been recorded since December 8, 2019, with many affected individuals having connections to the Huanan seafood wholesale market in Wuhan. The virus was subsequently identified from a throat swab sample of an affected person, leading to its renaming as "Severe Acute Respiratory Syndrome Coronavirus 2" (SARS-CoV) by the coronavirus research team (Gorbalenya, 2020), and the disease was termed coronavirus disease 2019 (COVID-19) by WHO. On

January 30, the WHO declared the COVID-19 pandemic a "Public Health Emergency of International Concern" (PHEIC) (Burki, 2020).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT:

The emergence of the COVID-19 pandemic had profound effects on stock markets worldwide (Ozili, Contessi, S-Fernandes, N, 2020). Notably, reputable stock market indices experienced their largest single-day decline ever at the onset of the pandemic, affecting nearly all sectors (Vasiu, 2020). In the United States, the ten largest companies lost a significant portion of their wealth in the week of February 24, 2020 (Ozili & Arun, 2020). In their analysis of the U.S. stock market, Fernandes (2020) reported that it had declined by over 30% compared to its peak in March 2020. Fernandes (2020) extended the study to assess the development of other major global economies and hypothesized that stock markets in Brazil, Colombia, Germany, and the UK were all more negatively impacted than the U.S. stock market, with drops of 48%, 47%, 33%, and 37%, respectively.

Various studies have concluded that the number of COVID-19 cases and deaths have had a significant impact on financial and stock markets. For instance, Alber (2020) conducted a panel data study and found that the stock markets of Germany, China, Spain, and France were affected more by the number of COVID-19 cases than by deaths during the initial phase from March 1, 2020, to April 10, 2020. Several other studies have reported the negative impacts of COVID-19 on stock markets in various countries (Al-Awadhi, A. M et al., 2020, Gherghina, Ș. C et al., 2020, Elsayed, A et al., 2020, Kartal, M. T, et al., 2021 & Adenomon, M. O et al., 2022).

Kartal et al. (2021) conducted a study to examine how major stock market indices in East Asian countries (Japan, Hong Kong, China, Mongolia, Korea, and Taiwan) responded to the COVID-19 pandemic. The authors collected data for the pre-pandemic period (January to December 2019) and the post-pandemic period (December 2019 to September 2020) starting from the first recorded cases of COVID-19. The quintile regression models revealed a significant inverse impact of the COVID-19 pandemic on the reviewed stock markets. Al-Awadhi et al. (2020) focused their study on the two primary indices of China (The Shanghai Stock Exchange Composite Index and the Hang Seng Index) and, employing a panel data analysis, found a significantly inverse impact of both the number of deaths and daily increases in new positive cases of COVID-19. Similar results were also observed in Nigeria, where Adenomon et al. (2022) reported a negative association between the pandemic and market returns using GARCH models.

Elsayed and Abdelrhim (2020) conducted research on the Egyptian stock market, taking data from various sectors of the economy. They employed multiple regression techniques to study the impact of new positive cases and deaths due to COVID-19 between March 1, 2020, and May 10, 2020. The authors found that most sectors' returns were more sensitive to cumulative death indicators than daily deaths. Moreover, new positive cases of COVID-19 had a more significant impact on returns compared to cumulative cases.

Stock Market Connection During A Crisis:

Stock markets are interconnected and interdependent, with strong cross-market linkages observed during crises. Chiang, Nam, and Li (2007) examined the daily returns of stock markets in nine Asian countries from 1996 to 2003 and found a strong connection among these markets during crises. Sun and Hou (2018) identified that Vietnam, Malaysia, and Thailand had the highest financial integration with China in Southeast Asia. Morales and Callaghan (2012) noted that global capital markets were interlinked, and crises in one country could rapidly spread to others. Movements in stock markets are highly correlated, and events like infectious disease epidemics can lead to changes in investor sentiment, impacting their financial decisions and, consequently, stock market prices. The effect of investor sentiment on stock markets is stronger in countries with lower institutional participation and those more susceptible to herd behavior and overreactions due to cultural factors (Donadelli, Kizys, & Riedel, 2016; Zouaoui, et al., 2011).

Theory of Event Study Method:

The event study method is frequently employed in economics and finance empirical research to explore abnormal returns (ARs) and cumulative abnormal returns (CARs) around specific events. According to Mackinlay (1997), the concept of the event study

method was initially reflected in research by Dolley (1933), although Ball and Brown (1968) and Fama et al. (1969) are credited with first systematically presenting this approach. The event study method aims to determine how specific events impact stock prices, assuming an efficient market where the effect of an event is reflected in stock price changes.

In this study, the event study methodology is chosen to investigate the abnormal returns (ARs) and cumulative abnormal returns (CARs) of the stock market indices of developing SAARC countries affected by the COVID-19 pandemic.

Based on the literature and arguments presented, the following research hypotheses are formulated:

2.3 Hypothesis-1: The COVID-19 pandemic negatively affects the stock markets of SAARC countries.

2.4 Hypothesis-2: Stock market volatility varies in different phases of COVID-19 in SAARC countries.

METHODOLOGY:

To empirically examine the objectives and to test the hypothesis of this study, the analysis will be performed in steps. (1) Descriptive statistics; (2) testing the stationarity of the data of employed variables (3) modelling the effect of Covid intensity on stock market returns and (4) model robustness

DATA

To organize this study, data of daily stock returns and number of positive cases along with number of deaths will be collected from 01 March 2020 to till date of SAARC countries. To observe the effect of COVID-19 on the Stock market returns, we considered the Stock market index of selected countries along with the severity of COVID-19. Following table describe the variables, employed in this study and their sources for data collection

S.No	Variable	Country	Source
1	KSE-100 Index	Pakistan	https://www.psx.com.pk/
2	Number of Positive Cases		https://www.who.int/
3	Number of Deaths		https://www.who.int/
4	Bombay stock exchange.	India	https://www.bseindia.com/
5	Number of Positive Cases		https://www.who.int/
6	Number of Deaths		https://www.who.int/
7	Dhaka stock exchange	Bangladesh	https://www.dsebd.org/
8	Number of Positive Cases		https://www.who.int/
9	Number of Deaths		https://www.who.int/
10	Dhaka stock exchange	Bangladesh	https://www.dsebd.org/
11	Number of Positive Cases		https://www.who.int/
12	Number of Deaths		https://www.who.int/
13	CSE; Colombo stock exchange	Sri lanka	Investing.com
14	Number of Positive Cases		https://www.who.int/
15	Number of Deaths		https://www.who.int/
16	Maldives stock exchange	Maldives	https://stockexchange.mv/
17	Number of Positive Cases		https://www.who.int/
18	Number of Deaths		https://www.who.int/
19	Royal securities exchange of Bhutan	Bhutan	https://rsebl.org.bt/
20	Number of Positive Cases		https://www.who.int/
21	Number of Deaths		https://www.who.int/

VARIABLE OF MEASURMENT

The variables employed in this study and their operationalization are given below

Variable	Abbreviation	Unit	Measure
Number of positive cases	NPC	Number	Number
Number of deaths	ND	Number	Number
COVID-19 intensity	CovIn	Ratio	Ratio of number of deaths to number of positive cases
Market Return	MR	Ratio	The ratio obtained by dividing the difference of current and previous returns to their previous returns
Return Volatility	RV	Ratio	is measured by taking the standard deviation of the market returns
Phase of Covid-19	PCovid19	Categorical	Phases are categorized as Phase-1, Phase-2 and Phase-3 as per World Health Organization's declaration

ECONOMIC EQUATIONS

The econometric equations of the proposed model are as follows

$$MR_{it} = \alpha + \beta 1 CovIn_{it} + \beta_2 PCovid19_{it} + \sum \beta_i Countryi + \epsilon_{it} \quad \text{---------- (1)}$$

$$RV_{it} = \alpha + \beta CovIn_{it} + \beta_2 PCovid19_{it} + \sum \beta_i Countryi + \epsilon_{it} \quad \text{---------- (2)}$$

Equation (1) will determine the impact of the intensity of COVID-19 on Stock market returns and also determine the effect of various phases on stock

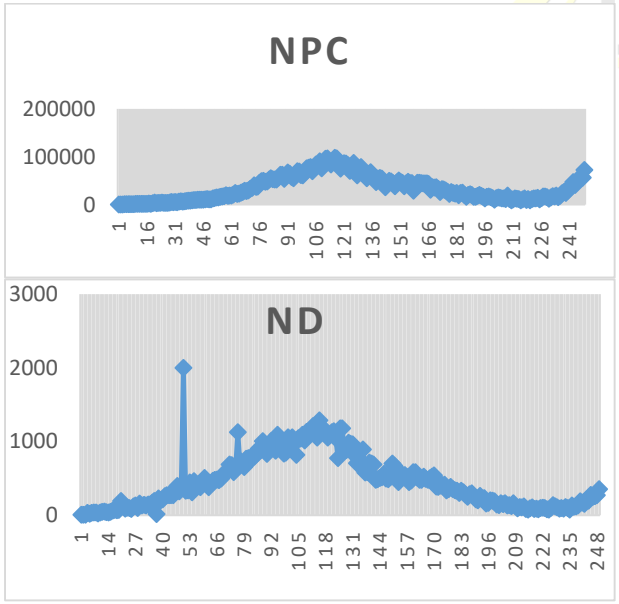
market returns. Similarly, equation 2 will determine the impact of intensity of COVID-19 on market volatility and how returns volatility varies in different phases of COVID-19. Furthermore, to determine the volatility ARCH and GARCH model will be employed.

Results and Discussion

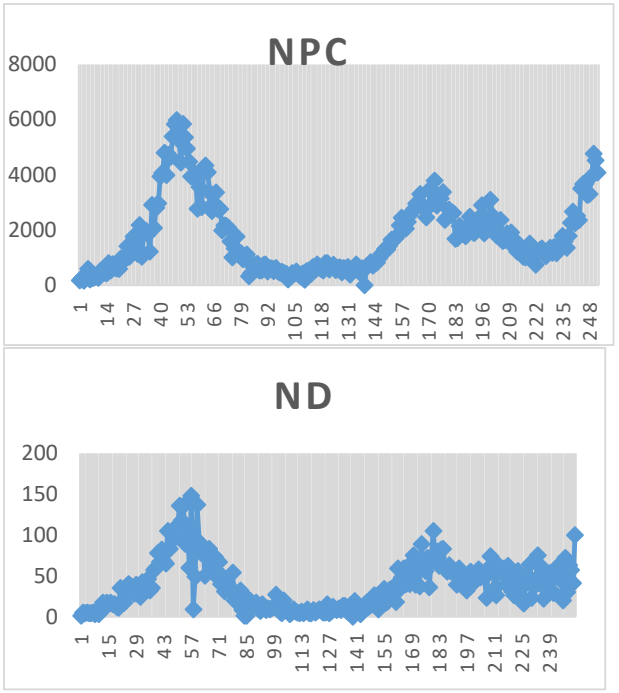
Table 1 shows the COVID-19 Phases in terms of the quantity of positive cases and numbers of deaths. Except for Pakistan, every country has two COVID-19 stages. There are three COVID-19 phases in Pakistan. The number of positive cases in India's first phase reached 10,000 before falling. The number of positive cases rose once more in the second phase and reached 8,000. Death cases in India throughout COVID-19 phases also increased. In Pakistan, the numbers of positive cases exceeded 6,000 in phase 1, 4,5,000 in phase 2, and subsequently climbed in phase 3 after a brief decline in phase 1. During the COVID-19 phases, other SAARC nations experience a similar circumstance.

Table 1

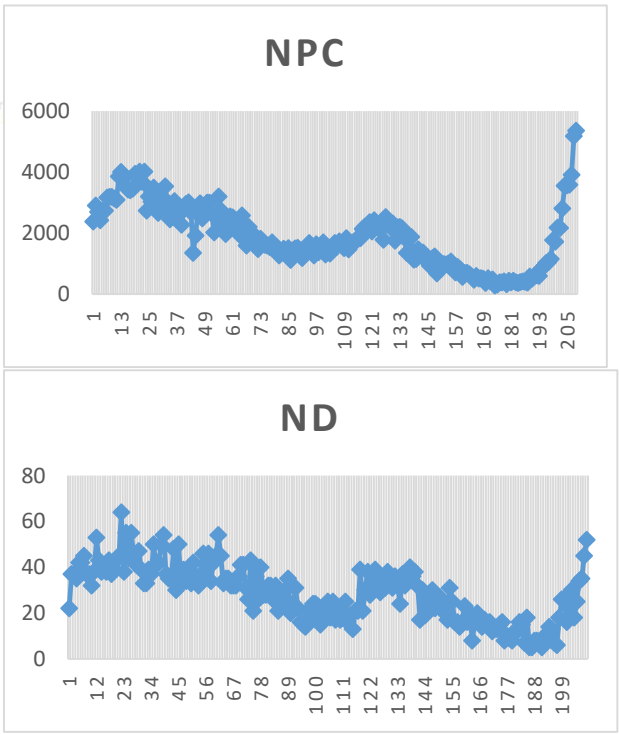
INDIA



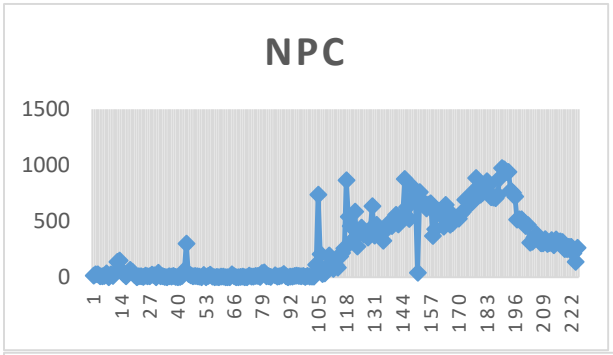
PAKISTAN

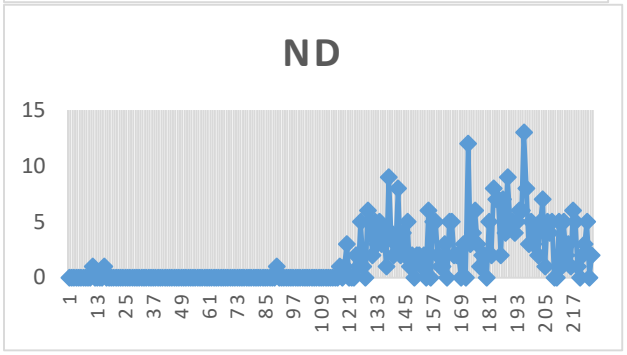


Bhutan

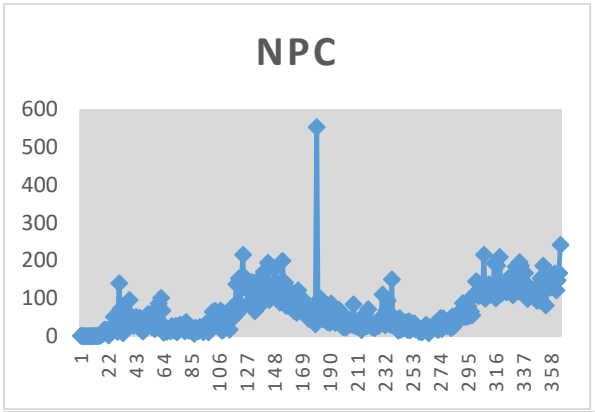


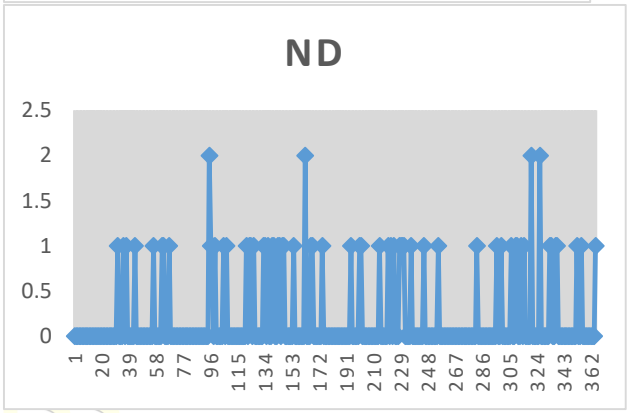
BANGLADESH



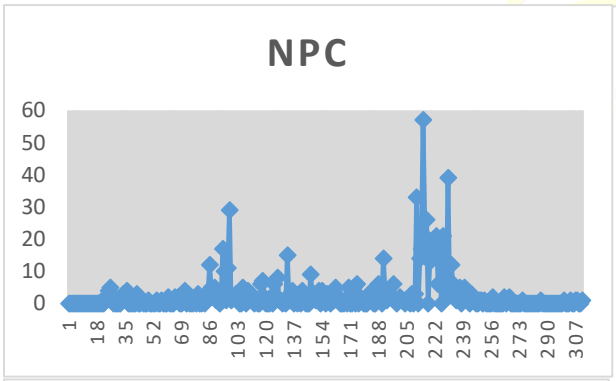


Maldives





SARI LANKA



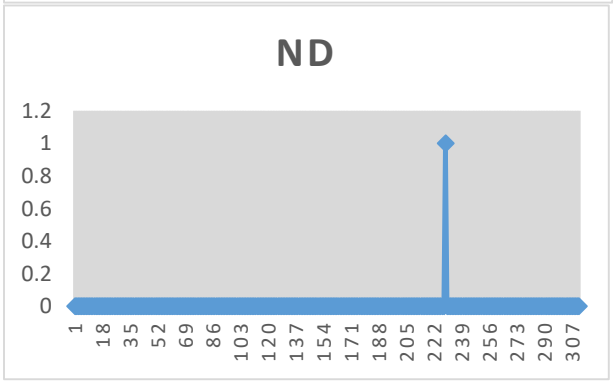


Table 2

Descriptive Statistics

Countries	Variable	Obs	Mean	Std. Dev.	Min	Max
India	Index	249	15735.5	2666.123	10527.29	20305.8
	ND	249	453.6948	360.1812	5	2003
	CovIn	249	0.0168256	0.013623	0.002277	0.1825223
Pakistan	Index	252	40052.27	4651.418	29505.57	46933.63
	ND	252	38.19841	29.87891	0	148
	CovIn	252	0.0219365	0.0111017	0.0014815	0.0629183
Bangladesh	Index	209	5111.79	3191.919	538.26	50115.2
	ND	209	28.5933	12.24243	5	64
	CovIn	209	0.017608	0.0078944	0.0050647	0.0513699
Sari Lanka	Index	225	6067.712	1073.205	4247.95	8812.01
	ND	225	1.613333	2.45982	0	13
	CovIn	217	0.004634	0.0115419	0	0.1111111
Maldives	Index	311	939.7011	9.081889	904	962.3
	ND	311	0.0032154	0.0567048	0	1
	CovIn	156	0.0016026	0.020016	0	0.25
Bhutan	Index	365	203.6271	6.800755	184.95	222.43
	ND	365	0.1835616	0.415038	0	2
	CovIn	353	0.0037039	0.0108516	0	0.08

The SAARC data's summary statistics are shown in Table 2. The daily change in the main stock index of the SAARC nation serves as a proxy for stock market returns. This table includes information on the SAARC countries' daily stock market closing points, COVID-19 intensity (CovIn), and total reported deaths (ND). The daily increase in COVID-19 confirmed cases in SAARC nations is used to calculate the growth in confirmed death cases. Death rate growth is calculated as a daily increase in the number of COVID-19 patients that passed away.

Table 3

Descriptive statistics of COVID-19 Phases

Covid_19 Phases	Mean	Std. Dev.	Freq.	F	P_Value
Phase 1	10363.112	12497.94	954	187.77	0.0000*
Phase 2	7960.9667	13153.895	612		
Phase 3	45621.363	939.32764	45		
Total	**10435.432**	**13967.103**	**1611**		

Table 3 contains statistics of COVID-19 by phase. 954 observations were made in total during phase one, which is the most compared to preceding stages. Phase 3 of COVID-19 was only observed in Pakistan, hence phase 3 had only 45 observations while phase 2 had 612. The stock markets are significantly affected by phases, as evidenced by the p-value being less than 0.05.

Table 4:

COVID-19 Phases wise effects on stock returns of SAARC.

COUNRTY	Covid_19 Phases	Mean	Std. Dev.	Freq.	F	P_Value
India	1	14667.726	1966.8201	194	324.82	0.0000*
	2	19501.823	524.69244	55		
Pakistan	1	37082.244	3728.2004	143	169.48	0.0000*
	2	42772.656	2135.4957	64		
	3	45621.363	939.32764	45		
Bangladesh	1	5102.1683	3254.7467	201	0.05	0.8277
	2	5353.535	45.476362	8		
Sari Lanka	1	5141.3792	358.47887	102	364.74	0.0000*
	2	6835.8895	834.25605	123		
Maldives	1	37.26615	10.941961	169	29.01	0.0000*
	2	942.59894	4.8087749	142		
Bhutan	1	205.20166	4.506803	145	13.33	0.0003*
	2	202.58936	7.7970453	220		

The above table 4 reports the results of robustness tests regarding the impact of COVID-19 on stock market returns after including country fixed-effect dummy variables in main model. Stock market returns is dependent variable in all models and is measured as the daily change in major stock index of a country. Growth in
confirmed cases is measured as the daily growth in COVID-19 confirmed cases in a country. Growth in deaths is measured as the daily growth in the number of COVID-19 patients died. The results are estimated with pooled OLS estimator using heteroskedasticity robust standard errors. P-values are given in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels, respectively.

Table 5:

Descriptive statistics of variable

Variable	Obs	Mean	Std. Dev.	Min	Max
Index	1611	10435.43	13967.1	184.95	50115.2
CovIn	1435	.0111071	.0147283	0	.25
MR	1610	-.0213122	.4419379	-10.14838	.9003604

Table 5 shows that there were 1611 total observations of SAARC Countries Indexes, 1610 marginal returns, and 1435 observations of Covid intensity. The covid intensity observations are lower than those of the index because of the daily basis data, and some covid intensity observations are missing due to death and zero positive cases.

Table 6:

Results of regress Index CovidS i.CovidS

Number of obs = 1611
F(2, 1608) = 187.77
Prob > F = 0.0000
R-squared = 0.1893
Adj R-squared = 0.1883
Root MSE = 12583

Index	Coef.	Std. Err.	t	P>|t|
CovidS	17629.13	959.7776	18.37	0.000*
2	-20031.27	1086.233	-18.44	0.000*
3	-7266.014	1119.432	-6.49	0.000*

Table 6's R2 value is 0.1893. Adjusted R2 = 0.1883, indicating that COVID-19 Phases, the independent variable, accounts for 18.9% of the variation in the population's dependent variable, Index. According to Cohen's (1988) classification, adjusted R2 is also a measure of the impact size, and at 0.1883 (18.83%), it indicates a medium effect size. However, findings are often reported using R2, not adjusted R2. The regression model in this instance has a statistically significant F(2, 1608) value of 187.77 and a p-value of.0000. This suggests that the model used as a whole can accurately predict the dependent variable, Index, using statistical methods.

Table 7

Results of regress Index CovidS I. Country

Number of obs =1611
F(6, 1604) =11246.59
Prob > F = 0.0000
R-squared = 0.9768
Adj R-squared = 0.9767
Root MSE = 2132.2

Index	Coef.	Std. Err.	t	P>|t|
CovidS	2326.944	103.9482	22.39	0.000*
2	23408.73	194.7947	120.17	0.000*
3	-10198.79	200.9271	-50.76	0.000*
4	-10425.87	199.0259	-52.38	0.000*
5	-15344.28	182.9681	-83.86	0.000*
6	-16420.43	179.6937	-91.38	0.000*
cons	12894.57	185.3761	69.56	0.000*

This F value has a very low p-value which is 0.0000. These numbers are used to respond to the question "Do the independent variables reliably predict the dependent variable?" You can say "Yes, the independent variable reliably predicts the dependent variable" if the p-value is less than your alpha threshold, which is commonly 0.05. You may say that the dependent variable "Index" can be accurately predicted using the variable "COVID-19". If the p-value was higher than 0.05 Then independent variable does not exhibit a statistically significant association with the dependent variable, or the independent variable does not accurately predict the dependent variable.Remember that this test does not examine the capacity of any specific independent variable to predict the dependent variable; rather, it examines whether the independent variables when combined reliably predict the dependent variable. In the Table 7 second portion, where each countries is listed, it is discussed how well each independent variable may predict the dependent variable.The percentage of the dependent variable's (Index) variance that can be predicted from the independent variables (COVID-19) is measured by R-Squared. This value shows that the variable COVID-19 can explain 97.67% of the variance in the stock index. Keep in mind that this is an overall measure of the strength of association and does not account for the strength of the relationship between any specific independent variable and the dependent variable.

The dependent variable (Index) is displayed at the top of the first column of the second section of Table 7, and the predictor variables (COVID-19 and countries) are displayed below it. The constant (_cons), often known as the Y intercept in textbooks and the height of the regression line where it crosses the Y axis, is represented by the final variable. In other words, when all other variables are 0, this is the projected value of Index.

The coefficients for the regression equation used to predict the dependent variable from the independent variable are denoted by Coef.

The numbers for Countries 1, 2, 3, 4, 5, and 6 are provided in the estimate's column (hence referred to as the coef. column).

These estimates provide information on the correlation between the independent and dependent variables. These estimates indicate how many units of the Index would increase/decrease if the predictor increase/decrease by one unit.

Because of the fact that country 2's coefficient (23408.73) has a p-value of 0.000, which is less than 0.05, it differs substantially from 0 when applying an alpha of 0.05.

Because of its p-value being less than 0.05, the coefficient for country3 (-10198.79) statistically differs from 0 in a significant way.

The coefficient for country 4 (-10425.87) is statistically significant because its p-value of 0.000 is less than .05.

The coefficient for country 5 (-15344.28) is statistically significant because its p-value of 0.000 is less than .05.

The coefficient for country 6 (-16420.43) is statistically significant because its p-value of 0.000 is less than .05.

The constant **(_cons)** is significantly different from 0 at the 0.05 alpha level.

CONCLUSION AND LIMITATIONS

The World Health Organization (WHO) declared a pandemic on March 12, 2020, when the Covid-19 coronavirus, which first arrived in China at the end of December 2019, spread to too many regions. The effects of this virus, which has an impact on everyone in the world, were unavoidable in terms of both sociocultural context and business context. Sociocultural activities are largely restricted, country economies have been negatively impacted by COVID-19, and industries including tourism, commodity trading, production, and transportation have experienced significant setbacks.

Worldwide stock markets and international markets were disrupted by the coronavirus' quick spread. The COVID-19 effect led to new future planning and tactics. This study examines the impact of COVID-19 on stock markets in relation to distinct phases in order to quantify the association between COVID-19 and stock market returns. Our research revealed that the stock market's volatility varied during various COVID-19 periods in SAARC nations. The pandemic also had a significant effect on stock performance and returns. Within a few weeks of the first phase of COVID-19's country-imposed lockdowns, stock returns appeared to be extremely poor.

The stock market volatility in Mumbai and Karachi decreased by 13.2% and 4.68%, respectively, while it decreased by around 13.22 percent and around 9.0% in Colombo, around 30% in the Maldives, and around 17.3% in the Royal Stock Exchange of Bhutan as a result of the pandemic. In addition, we discovered strong correlations between the MSX KSX, DSX, CSX, MSX, and RSX and the COVID-19 investor's worldwide fear index. A summary of the results reveals that the pandemic caused a considerable decline in stock market returns, with a 1% increase in COVID-19 causing a 5% decrease in stock returns, correspondingly.

The goal of this study was to look into the relationships between Covid-19 daily total deaths and daily total cases and stock markets in countries like India, Pakistan, Bangladesh, Sri Lanka, the Maldives, and Bhutan, where Covid-19 was seen in various stages and all of the SAARC countries. All these countries are sharing their borders with China except Sri Lanka, where the pandemic originated. The cointegration has thus been observed using the tests. While a relationship between daily total cases and selected country stock markets has been found, there is a cointegrated pattern between daily total deaths and all country stock markets. As a result, when a death occurs, it impacts all investors, whereas some stock markets in some nations were unaffected by the absence of death cases after hearing the case. Since many stock markets do not operate in accordance with the efficient market hypothesis and lean toward behavioral finance theories, the realization of the cases has little psychological impact on investors in some stock markets. The findings show the rebuilt interest of investors in COVID-19 phases.

Why Covid-19 instances and deaths in several countries grew day by day during phase one, then decreased and then increased again during phase two. It is acknowledged that at the time, stock market trading was not the best choice for investors. It makes sense for investors to invest in gold markets, which are regarded as safe havens in all financial markets. Cryptocurrencies like Bitcoin, the most popular cryptocurrency in the world, can be considered as another financial tool to invest in because of the Covid-19 virus spreading more broadly and forcing all aspects of corporate life online. Additionally, using derivative products was one of the best solutions for reducing risk. In that unique circumstance, turning to country markets, where

Covid-19 instances are comparatively low, was another wise investment decision.

Because of this, developing states like India, Pakistan, Bangladesh, Sri Lanka, the Maldives, and Bhutan suffered significant economic losses as a result of the epidemic, indicating that with the conclusion of COVID-19, the deck has been reshuffled and the world economy is sending new signals of movement. The fact that it is one of the groundbreaking types of research that demonstrates the connection between the Covid-19 case and stock markets using panel data on the impact of the Covid-19 phases on stock markets in emerging nations. The outcomes that will be attained with a higher frequency of data will provide clearer insights regarding the pandemic's potential repercussions on the financial markets and economy. However, as macroeconomic indicators like GDP, Trade Openness, and Unemployment are not currently tracked at a daily frequency, an empirical investigation to ascertain the relationship between these variables and Covid-19 is not yet possible. Future research using a new model that will be constructed by taking these variables into account will present significant economic findings to policy makers in the event that the pandemic continues or another pandemic like covid-19.

REFERENCES

Abid, K., Bari, Y. A., Younas, M., Tahir Javaid, S., & Imran, A. (2020). Progress of COVID-19 Epidemic in Pakistan. Asia Pacific Journal of Public, 32(4), 154-156.

Adenomon, M. O., Maijamaa, B., & John, D. O. (2022). The effects of Covid-19 outbreak on the Nigerian Stock Exchange performance: Evidence from GARCH Models. Journal of Statistical Modeling & Analytics (JOSMA), 4(1).

Al-Awadhi, A. M., Alsaifi, K., Al-Awadhi, A., & Alhammadi, S. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. Journal of behavioral and experimental finance, 27, 100326.

Alber, N. (2020). The effect of coronavirus spread on stock markets: The case of the worst 6 countries. Available at SSRN 3578080.

Armien, B., Suaya, J. A., Quiroz, E., Sah, B. K., Bayard, V., Marchena, L. Campos, C., and Shepard, D. S. (2008). Clinical Characteristics and National Economic Cost of the 2005 Dengue Epidemic in Panama, Am. J. Trop. Med. Hyg., 79(3), 2008, 364–371.

Ayittey, F. K., Ayittey, M. K., Chiwero, N. B., Kamasah, J. S., and Dzuvor, C. (2020). Economic Impacts of Wuhan 2019-nCoV on China and the World. Journal of Medical Virology, 1-3. 10.1002/jmv.2570.

Ball, R.; Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. J. Account. Res, 6, 159.

Carpenter, T. E., O'Brien, J. M., Hagerman, A. D., and McCarl, B. A. (2011). Epidemic and economic impacts of delayed detection of foot-and-mouth disease: a case study of a simulated outbreak in California, J Vet Diagn Invest, 23:26–33.

Chiang, T.C.; Jeon, B.N.; Li, H. (2007). Dynamic correlation analysis of financial contagion: Evidence from Asian markets. J. Int. Money Financ, 26, 1206–1228.

Contessi, S.; De Pace, P. (2020). The International Spread of COVID-19 Stock Market Collapses. Financ. Res. Lett. 2020, 101894.

Dickey, D.; Fuller, W.A. (1979). Distribution of the estimates for autoregressive time series with a unit root. J. Am. Stat. Assoc. 1979, 74, 427–431.

Elsayed, A., & Abdelrhim, M. (2020). The effect of COVID-19 spread on Egyptian stock market sectors. Available at SSRN 3608734.

Erandi, K. K. W. H., Mahasinghe, A. C., Perera, S. S. N., & Jayasinghe, S. (2020). Effectiveness of the strategies implemented in Sri Lanka for controlling the COVID-19 outbreak. Journal of Applied Mathematics, 2020.

Fernandes, N. (2020). Economic Effects of Coronavirus Outbreak (COVID-19) on the World Economy. IESE Bus. Sch. WP 2020.

Gherghina, Ș. C., Armeanu, D. Ș., & Joldeș, C. C. (2020). Stock market reactions to Covid-19 pandemic outbreak: Quantitative evidence from ARDL bounds tests and Granger causality analysis. International journal of

environmental research and public health, 17(18), 6729.

Gorbalenya AEA. Severe acute respiratory syndrome-related coronavirus: the species and its viruses – a statement of the Coronavirus Study Group. BioRxiv 2020, http://dx.doi.org/10.1101/2020.02.07.937862.

Gupta, A., Banerjee, S., & Das, S. (2020). Significance of geographical factors to the COVID-19 outbreak in India. Modeling earth systems and environment, 6(4), 2645-2653.

Chatterjee, P. (2020). Is India missing COVID-19 deaths?. The Lancet, 396(10252), 657.

Hatmanu, M., Cautisanu, C., & Ifrim, M. (2020). The impact of interest rate, exchange rate, and European business climate on economic growth in Romania: An ARDL approach with structural breaks. Sustainability, 12(7), 2798.

Dolley, J. (1933). Characteristics and Procedure of Common Stock Split-Ups. Harvard Business Rev, 11, 316–324.

Donadelli, M.; Kizys, R.; Riedel, M. (2016). Dangerous infectious diseases: Bad news for Main Street, good news for Wall Street? J. Financ. Mark, 35, 84–103.

Fama, E.F.; Fisher, L.; Jensen, M.C.; Roll, R. (1969). The Adjustment of Stock Prices to New Information. Int. Econ. Rev. (Philadelphia), 10, 1–21.

Hui DS, E IA, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health – the latest 2019 novel coronavirus outbreak in Wuhan, China. Int J Infect Dis 2020;91:264–6.

Kartal, M. T., Kiliç Depren, S., & Depren, Ö. (2021). How main stock exchange indices react to Covid-19 pandemic: Daily evidence from East Asian countries. Global Economic Review, 50(1), 54-71.

Kanjilal, K., & Ghosh, S. (2014). Income and price elasticity of gold import demand in India: Empirical evidence from threshold and ARDL bounds test cointegration. Resources Policy, 41, 135-142.

LeVine, S., Dhakal, G. P., Penjor, T., Chuki, P., & Namgyal, K. (2020). Case report: the first case of COVID-19 in Bhutan