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# Covid-19 Outbreak and Stock Market Performance: Evidence From Major Countries

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**Abstract**
The objective of this study is to determine the impact of COVID-19 on the performance of major Stock Market indices. This study uses the data of COVID-19 related confirmed cases, fatalities, and the closing prices of the selected indexes during the period from January 1 to July 31 in 2020. The findings of the study suggest that only COVID-19 confirmed cases are influencing the performance of the S&P 500 index, while the COVID 19 death cases are influencing the performance of both Shanghai composite index and KSE all indexes. However, no relationship exists between the NSE 500 index and COVID 19 confirmed and death cases.
**Keywords:** COVID-19 and Stock Market, Major Stock Market and Pandemic.
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## 1. INTRODUCTION

Stock market indices react to distinctive occasions very quickly. in advance, studies have referred to a number of extensive events for which inventory market returns have responded, together with, herbal catastrophe (Lee and Chen, 2020), information bulletins (Hussain and Ben Omrane, 2020), foremost sports activities occasion (Curatola et al., 2016), environmental occasions (Guo et al., 2020), political uncertainty (Hillier and Loncan, 2019), and terrorist incidents (Goel et al., 2017). stock marketplace indices may also react to pandemic diseases, consisting of the Ebola outbreak (Ichev and Marinč, 2018), intense Acute breathing Syndrome outbreak (Chen et al., 2007). nevertheless, there is no research that covers the effects of pandemic diseases on stock indices**.**

Beginning the excursion from Wuhan city in China, the coronavirus illness, COVID-19, at this point tainted 5,522,684 individuals and removed 347,032 significant lives and incapacitated the monetary framework over the world (WHO, 2020). Joined Kingdom, France, Spain, Iran, Italy, and China, and the United States are the genuine casualty of COVID-19. Entryways (Gates, 2020) named the conduct of COVID-19 as 'the once-in-a-century microorganism.' The pandemic has just harmed the genuine financial movement, and the breaking point is yet to know. COVID-19 makes extraordinary harms the economy of a nation than other regular and human-made emergencies like environmental change, atomic wars, catastrophic events, and neighborhood misfortunes (Goodell, 2020). He further referenced that COVID-19 has a generally wide scope of effects on monetary parts, in particular banking and protection, securities exchange, and renting. Thinking about these various impacts, the writing on the budgetary effects of COVID-19 has begun to develop quickly (Akhtaruzzaman et al., 2020; Al-Awadhi et al., 2020; Ali et al., 2020; Corbet et al., 2020; Corbet, Larkin and Lucey, 2020; Haroon and Rizvi, 2020; Ji et al., 2020; Sharif et al., 2020; Zhang et al., 2020). Sharif et al. (2020) research the connection ups among the COVID-19 spread, the securities exchange conduct, oil value insecurity, international hazard and the US financial arrangement vulnerability. Corbet et al. (2020) look at the relationship between the Chinese securities exchange and Bitcoin returns during a COVID-19 pandemic. Their investigations distinguish a few connections between the tested factors. Akhtaruzzaman et al. (2020) research the money related virus during COVID-19 emergency. Money related firms are more unmistakable in communicating disease than nonfinancial firms, they notice. Ali et al. (2020) set up a connectedness between the spread of COVID-19 and the worldwide monetary markets. The worldwide budgetary markets have gone into freefall, conversely, the Chinese market has balanced out during the later period of COVID-19 emergency, their investigation makes reference to. Haroon and Rizvi (2020) show the news affectability what's more, the responses of money related markets during a COVID-19 pandemic. Their examination states that media have tremendous commitments towards the speculation atmosphere vulnerability. Al-Awadhi et al. (2020) apply board information investigation to inspect the effect of COVID-19 on the Chinese securities exchange. At that point, Zhang et al. (2020) show that COVID-19 pandemic impactsly affects worldwide monetary markets. They additionally recognize a significant augmentation of unpredictability.

### 1.1 The COVID-19 Out Break

COVID-19 was first distinguished in December 2019 in Wuhan, the capital of China's Hubei region, and has since spread all inclusive. It didn't draw in much consideration OF the general population in China until January 20, 2020, when the Government conceded human-to-human transmission of the coronavirus openly. On 23 January 2020, the focal legislature of China forced a lockdown with an end goal to isolate the focal point of the COVID-19 flare-up. In resulting days, every single other city in Hubei territory were closed, and individuals in practically all territories of China experienced travel limitations or social removing. On February 28, 2020, the World Health

 

Organization (WHO) raised the hazard from "high" to "extremely high". On March 12, 2020, the WHO declared the COVID-19 flare-up as a pandemic. At the point when China finished its lockdown of Wuhan on 8 April 2020, COVID-19 has tainted more than 1.4 million people groups on the planet with more than 81,000 passings (Yan C, 2020). In Pakistan, the initial two instances of COVID-19 started to be identified on 26 February 2020 (Worldometer, 2020). The quantity of cases in Pakistan on 31st March 2020 is 1938, and on 30 April 2020 the cases raised to 16473, and on 31st May 2020 the all out number cases raised to 69496, and afterward 24 June 2020 the absolute cases in Pakistan are 188926 (Worldometer, 2020). Today the world is stunned because of this pandemic. Covid-19 is an irresistible illness brought about by another coronavirus (SARS-CoV-2) found in China.

## 2. LITERATURE REVIEW

This section contains the following literature review based on the proposed topic.

Yilmazkuday, (2020) examined the effects of the coronavirus infection 2019 (COVID-19) cases in the U.S. on the S&P 500 Index utilizing everyday information covering the period between December 31st, 2019 and May first, 2020. The examination is accomplished by utilizing an auxiliary vector autoregression model, where a proportion of the worldwide monetary movement and the spread between 10-year depository steady development and the government subsidizes rate are too included. The experimental outcomes propose that having 1% of an expansion in combined every day COVID-19 cases in the U.S. results in about 0:01% of a combined decrease in the S&P 500 Index following one day and about 0:03% of a decrease following one month. His effective decay of the S&P 500 Index further recommends that the negative e¤ects of COVID-19 cases in the U.S. on the S&P 500 Index have been for the most part saw during Walk 2020.

Onali, (2020) researched the effect of Covid-19 cases and related passings on the US financial exchange (Dow Jones and S&P500 records), taking into consideration changes in exchanging volume and instability desires, just as day-of-the-week impacts. The outcomes, based a GARCH(1,1) model and information from April 8, 2019, to April 9, 2020, recommend that adjustments in the quantity of cases and passings in the US and six different nations significantly influenced by the Covid-19 emergency don't affect the US financial exchange returns, aside from the quantity of detailed cases for China. Nonetheless, there is proof of a positive effect, for certain nations, on the contingent heteroscedasticity of the Dow Jones and S&P500 returns. VAR models propose that the quantity of announcing passings in Italy and France negatively affect securities exchange returns, and a positive effect on the VIX returns. At long last, Markov-Switching models propose that until the end of February 2020 the size of the negative effect of the VIX on securities exchange returns expanded triple.

He et al, (2020) endeavors to investigate the immediate impacts and overflows of COVID-19 on securities exchanges. Utilizing ordinary t-tests and nonparametric Mann–Whitney tests, we observationally examine every day, return information from securities exchanges in the People's Republic of China, Italy, South Korea, France, Spain, Germany, Japan and the United States of America. Our exact outcomes show that (I) COVID-19 has a negative yet transient effect on financial exchanges of influenced nations and that (ii) the effect of COVID-19 on securities exchanges has bidirectional overflow impacts between Asian nations and European and American nations. In any case, there is no proof that COVID-19 contrarily influences these nations' financial exchanges more than it does the worldwide normal. The discoveries add to the examination on monetary effect of the pandemic by giving exact proof that COVID-19 has overflow impacts on securities exchanges of different nations. The outcomes likewise give a premise to surveying patterns in universal securities exchanges when the circumstance is lightened around the world.

Val and Ahmar, (2020) expected the short-term of confirmed cases of COVID-19 and IBEX in Spain by the use of SutteARIMA technique. Covid-19 Spanish showed information acquired from Worldometer and Spain inventory market statistics (IBEX 35) facts received from Yahoo Finance. Records starts offevolved from 12 February 2020 – 09 April 2020 (the date on Covid-19 was detected in Spain). The facts from 12 February 2020 – 02 April 2020 using to be coming with facts from 03 April – 09 April 2020. Based totally on the proper records, we will do a quick forecast for 3 destiny durations (10 April – 12 April 2020 for Covid-19 and 14 April – sixteen April 2020 for IBEX). In this observe, the SutteARIMA approach will be used. For the evaluation of the forecasting techniques, we applied forecasting accuracy measures, suggest absolute percentage blunders (MAPE). Primarily based on the consequences of ARIMA and SutteARIMA forecasting methods, we conclude that the SutteARIMA approach is maximum suitable than ARIMA to calculate the each day forecasts of confirmed cases of Covid-19 and IBEX in Spain. The MAPE price of zero. 1905 (smaller than 0.04 compared to MAPE cost of ARIMA) for confirming instances of Covid-19 in Spain and 0,0202 for IBEX stock. On the give up of the analysis, using the SutteARIMA technique, we calculate day by day forecasts of confirmed instances of Covid-19 in Spain from 10 April 2020.

Khanthavit, (2020) directed an Event-study investigation to test for securities exchange responses to COVID-19. In light of profits on the world, French, German, Italian, Spanish, U.K., U.S., Chinese, Philippine, and Thai stocks, the examination finds noteworthy, negative responses to the ailment. The responses were to COVID-19's broad media inclusion and pandemic presentation, not to the developing occasions and circumstances when they

 

really happen. The business sectors responded to old news, not new news.

Yan, (2020) analyzed how Chinese securities exchanges respond to the episode of COVID-19

in a window of fifty exchanging days, from January 20, 2020, to April 7, 2020. The outcomes show that the coronavirus prompts enormous moves in stock costs. Stock costs fall pointedly alongside the lockdown of Wuhan city, in any case, I locate that stock returns turn around in each ten exchanging days all through the window time frame. The eruption, the strategy reaction along with the interconnectedness of the advanced economy through worldwide gracefully anchors may add to the successive inversions. In any case, firm size is one key factor opposing the arrival inversions. I likewise find that non-SOEs, firms with higher proprietorship fixation and non-pilot firms of protections edge exchanging endure more following the coronavirus pandemic. Conversely, these discoveries don't exist for the SARS flare-up in China from 2002 to 2003.

Ashraf, Rizwan and Ahmad (2020) break down in their examination the effect of Islamic Equity Ventures (IEIs) during the COVID-19 pandemic. It has been accounted for by S&P Down Jones that during the principal quarter of 2020 the IEIs kept on outflanking their ordinary partners. This case has been made because of the severe treatment of the IEIs and the potential supporting advantages worked out. The discoveries give proof that supporting advantages are given by IEIs during the market ruin and the examination recommends that supporting advantages come at an extra expense.

Ruiz Estrada, Koutronas and Lee (2020) break down the budgetary and financial effect of the COVID-19 pandemic. A diagnostic model has been detailed in this investigation, which serves to comprehend the examples of spatiotemporal of the events of COVID-19 sort of malady and its suggestions and importance towards the money related markets. The paper presents a novel multidimensional mathematical methodology and the idea of hostility in the given situation of scourges.

From the above literature, it is confirmed that this study still incomplete and I can fill the gap in the literature, so that some of the hypotheses formulated from the above literature:

H01: The performance of the S&P 500 index is not influenced as a result of COVID-19 death cases.
H02: The performance of the S&P 500 is not influenced as a result of COVID-19 confirmed cases.
H03: The performance of the Shanghai composite index is not influenced as a result of COVID-19 death cases.
H04: The performance of the Shanghai composite index is not influenced as a result of COVID-19 confirmed cases.
H05: The performance of the NSE 500 index is not influenced as a result of COVID-19 death cases.
H06: The performance of the NSE 500 index is not influenced as a result of COVID-19 confirmed cases.
H07: The performance of the KSE all indexes are not influenced as a result of COVID-19 death cases.
H08: The performance of the KSE 500 indexes are not influenced as a result of COVID-19 confirmed cases.

## 3. RESEARCH METHODOLOGY

This section addresses the methodology used in the study in the context of data and sample, research model and classification of variables in the following headings:

### RESEARCH MODEL

The objective of this study is to determine the impact of COVID-19 on the performance of major stock markets. The research model of this study has been presented as follows:

$$\boldsymbol{PRICEit} = \boldsymbol{\alpha} + \boldsymbol{\beta 1 POSITIVEit} + \boldsymbol{\beta 2 FATALit} + \boldsymbol{\varepsilon it}$$

In the above-presented research model, $\boldsymbol{PRICEit}$ indicate the daily closing price of Stock Exchanges, $\boldsymbol{POSITIVEit}$ indicates the daily number of positive COVID-19 cases, $\boldsymbol{FATALit}$ indicates the daily number of COVID-19 fatalities, and $\boldsymbol{\varepsilon it}$ denotes the error term.

### CLASSIFICATION AND MEASUREMENT OF THE VARIABLES

**The variables of this study are classified in the following table:**

| Name | Type | Measurement |
|---|---|---|
| **PRICE$_{it}$** | Dependent | It is measured by the daily closing price of the index. |
| **CONFIRMED$_{it}$** | Independent | It is measured by the frequency of daily positive cases. |
| **DEATH$_{it}$** | Independent | It is measured by the frequency of daily death cases. |

**TABLE1: CLASSIFICATION OF VARIABLES**

### DATA AND SAMPLE

The data of the study have been obtained from different sources. The daily closing prices of the index have been obtained from investigating.com. The information on COVID-19 cases has been obtained from the Worldometer, and reports of WHO. The data ranges from January 1 to 31 July 2020 have been obtained on a daily basis from these sources.

 

## RESULTS AND DISCUSSION

The results obtained with the help of data analysis are explained in the following sections by using descriptive statistics, correlation analysis and regression analysis.

## DESCRIPTIVE STATISTICS

| | *S&P 500 CLOSING PRICES* | *CONFIRMED CASES* | *DEATH CASES* |
|---|---|---|---|
| Mean | 3025.359388 | 1141548.252 | 54064.52381 |
| Standard Error | 22.18180836 | 107724.8283 | 4641.928969 |
| Median | 3097.74 | 671331 | 33284 |
| Standard Deviation | 268.9401336 | 1306094.131 | 56280.39774 |
| Kurtosis | 0.011971594 | -0.178108158 | -1.564980894 |
| Skewness | -0.844894061 | 0.943767375 | 0.36043906 |
| Range | 1148.75 | 4495014 | 152070 |
| Minimum | 2237.4 | 0 | 0 |
| Maximum | 3386.15 | 4495014 | 152070 |
| Count | 147 | 147 | 147 |

Table 1: Descriptive statistics (S&P 500)

According to the descriptive statistics, it can be observed that the average price of S&P 500 index has 3025.36 points during the first seven months of 2020. The average number of confirmed cases in the first seven months of 2020 are 11415449, the average number of death cases during the same period is 54065. During the first seven months of 2020, the maximum index price was 3386, whereas the minimum index price was 2238. During the first seven months of 2020, the maximum number confirmed cases are 4495014, and the death cases are 152070. The lowest index price was 2238 during the first seven months of 2020 and analysis has been drawn on the basis 147 observations.

| | *SHANGHAI COMPOSITE* | *CONFIRMED CASES* | *DEATH CASES* |
|---|---|---|---|
| Mean | 2966.947914 | 70146.60432 | 3332.633094 |
| Standard Error | 14.91115162 | 2405.008757 | 139.4491009 |
| Median | 2923.49 | 83754 | 4636 |
| Standard Deviation | 175.7998849 | 28354.63507 | 1644.080652 |
| Sample Variance | 30905.59954 | 803985330 | 2703001.19 |
| Kurtosis | 0.421163911 | 1.773943698 | -0.340063059 |
| Skewness | 0.972001996 | -1.865916947 | -1.01760229 |
| Range | 790.42 | 87186 | 4659 |
| Minimum | 2660.17 | 27 | 0 |
| Maximum | 3450.59 | 87213 | 4659 |
| Count | 139 | 139 | 139 |

Table 2: Descriptive statistics (Shanghai composite)

According to the descriptive statistics, it can be observed that the average price of the Shanghai composite index has 2966.95 points during the first seven months of 2020. The average number of confirmed cases in the first seven months of 2020 is 70147, the average number of death cases during the same period is 3333. During the first seven months of 2020, the maximum index price was 3451, whereas the minimum index price was 2661. During the first seven months of 2020, the maximum number confirmed cases are 87213, and the death cases are 4659. The lowest index price was 2661 during the first seven months of 2020 and analysis has been drawn on the basis 139 observations.

| | *NSE 500 INDEX* | *CONFIRMED CASES* | *DEATH CASES* |
|---|---|---|---|
| Mean | 8570.436111 | 233106.2639 | 6168.444444 |
| Standard Error | 89.87821622 | 33107.61078 | 810.8040046 |
| Median | 8556.875 | 17932.5 | 566.5 |
| Standard Deviation | 1078.538595 | 397291.3294 | 9729.648055 |
| Kurtosis | -1.227446024 | 3.083742477 | 1.401798496 |
| Skewness | -0.060705073 | 1.966359662 | 1.601652962 |
| Range | 3875.7 | 1638870 | 35747 |
| Minimum | 6243 | 0 | 0 |
| Maximum | 10118.7 | 1638870 | 35747 |
| Count | 144 | 144 | 144 |

Table 3: Descriptive statistics (NSE 500 index)

 

According to the descriptive statistics, it can be observed that the average price of NSE 500 index has 8570.44 points during the first seven months of 2020. The average number of confirmed cases in the first seven months of 2020 is 233107, the average number of death cases during the same period is 6169. During the first seven months of 2020, the maximum index price was 10119, whereas the minimum index price was 6243. During the first seven months of 2020, the maximum number confirmed cases are 1638870, and the death cases are 35747. The lowest index price was 6243 during the first seven months of 2020 and analysis has been drawn on the basis 144 observations.

| | *KSE ALL INDEX* | *CONFIRMED CASES* | *DEATH CASES* |
|---|---|---|---|
| | | | |
| Mean | 25532.61106 | 68252.74468 | 1411.921986 |
| Standard Error | 220.3255813 | 8180.215794 | 170.4177447 |
| Median | 24997.64 | 7016 | 135 |
| Standard Deviation | 2616.221323 | 97134.68068 | 2023.598598 |
| Kurtosis | -0.888602565 | -0.360691749 | -0.203205028 |
| Skewness | 0.090236994 | 1.133473913 | 1.178694147 |
| Range | 10014.56 | 278305 | 5951 |
| Minimum | 20043.89 | 0 | 0 |
| Maximum | 30058.45 | 278305 | 5951 |
| Count | 141 | 141 | 141 |

Table 4: Descriptive statistics (KSE all index)

According to the descriptive statistics, it can be observed that the average price of KSE all index has 25532.62 points during the first seven months of 2020. The average number of confirmed cases in the first seven months of 2020 is 68253, the average number of death cases during the same period is 1412. During the first seven months of 2020, the maximum index price was 30059, whereas the minimum index price was 20044. During the first seven months of 2020, the maximum number confirmed cases are 278305, and the death cases are 5951. The lowest index price was 20044 during the first seven months of 2020 and analysis has been drawn on the basis 141 observations.

**CORRELATION ANALYSIS**

| *CORRELATION* | *S&P 500 INDEX* | *COVID CONFIRMED CASES* | *COVID DEATH CASES* |
|---|---|---|---|
| S&P 500 INDEX | 1 | | |
| COVID CONFIRMED CASES | 0.243677103 | 1 | |
| COVID DEATH CASES | 0.208107608 | 0.96313656 | 1 |

Table 1

The correlation analysis based on the following table 1 indicates that there is a strong and positive correlation between the closing price of the index and the number of confirmed, and death cases. The confirmed cases also correlate with death cases. The correlation between closing price, death and confirmed cases are significant at a level of 5% significance.

| *CORRELATION* | *Shanghai Composite (SSEC)* | *COVID CONFIRMED CASES* | *COVID DEATH CASES* |
|---|---|---|---|
| Shanghai Composite (SSEC) | 1 | | |
| COVID CONFIRMED CASES | -0.112637986 | 1 | |
| COVID DEATH CASES | 0.028212163 | 0.908799157 | 1 |

Table 2

The correlation analysis based on the following table 2 indicates that there is a negative correlation between the closing price of the index and the number of confirmed, and positive correlation between the closing price index and death cases. The confirmed cases also positively correlate with death cases. The correlation between closing price, death and confirmed cases are significant at a level of 5% significance.

| *CORRELATION* | *NSE 500 INDEX* | *COVID CONFIRMED CASES* | *COVID DEATH CASES* |
|---|---|---|---|
| NSE 500 INDEX | 1 | | |
| COVID CONFIRMED CASES | 0.069982273 | 1 | |
| COVID DEATH CASES | 0.050517241 | 0.991918326 | 1 |

Table 3

The correlation analysis based on the following table 3 indicates that there is a positive correlation between the closing price of the index and the number of confirmed, and death cases. The confirmed cases also positively correlate with death cases. The correlation between closing price, death and confirmed cases are significant at a

 

level of 5% significance.

| *CORRELATION* | *KSE ALL INDEX* | *COVID CONFIRMED CASES* | *COVID DEATH CASES* |
|---|---|---|---|
| KSE ALL INDEX | 1 | | |
| COVID CONFIRMED CASES | -0.01061271 | 1 | |
| COVID DEATH CASES | -0.003346696 | 0.999409282 | 1 |

Table 4

The correlation analysis based on the following table 3 indicates that there is a negative correlation between the closing price of the index and the number of confirmed, and death cases. The confirmed cases also positively correlate with death cases. The correlation between closing price, death and confirmed cases are significant at a level of 5%.

**REGRESSION ANALYSIS**

**S&P 500 INDEX**

| *Regression Statistics* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Multiple R | 0.262956315 | | | | | | | |
| R Square | 0.069146023 | | | | | | | |
| Adjusted R Square | 0.056217496 | | | | | | | |
| Standard Error | 261.2712225 | | | | | | | |
| Observations | 147 | | | | | | | |
| | | | | | | | | |
| ANOVA | | | | | | | | |
| | *df* | *SS* | *MS* | *F* | *Significance F* | | | |
| Regression | 2 | 730182.294 | 365091.147 | 5.348329401 | 0.00574741 | | | |
| Residual | 144 | 9829821.842 | 68262.65168 | | | | | |
| Total | 146 | 10560004.14 | | | | | | |
| | | | | | | | | |
| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 2979.82199 | 30.21204869 | 98.63025246 | 4.2689E-134 | 2920.105608 | 3039.538372 | 2920.105608 | 3039.538372 |
| COVID CONFIRMED CASES | 0.000123036 | 6.15414E-05 | 1.999233793 | 0.047464765 | 1.39445E-06 | 0.000244677 | 1.39445E-06 | 0.000244677 |
| COVID DEATH CASES | -0.001755565 | 0.001428186 | -1.229226794 | 0.220991606 | -0.004578482 | 0.001067352 | -0.004578482 | 0.001067352 |

The regression analysis of the study has been performed in the following table which indicates that there is a positive and significant relationship between price movement and the COVID 19 confirmed cases. Secondly, there is a negative and insignificant relationship between the price movement index and COVID 19 death cases. The coefficient determination, in this case, is 0.0691, which means 6.91% of the variation in the dependent variable is explained by independent variables which state that the model is not a good fit.

**Shanghai Composite index**

| *Regression Statistics* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Multiple R | 0.332612717 | | | | | | | |
| R Square | 0.11063122 | | | | | | | |
| Adjusted R Square | 0.097552267 | | | | | | | |
| Standard Error | 167.0050546 | | | | | | | |
| Observations | 139 | | | | | | | |
| | | | | | | | | |
| ANOVA | | | | | | | | |
| | *df* | *SS* | *MS* | *F* | *Significance F* | | | |
| Regression | 2 | 471839.1356 | 235919.5678 | 8.458721624 | 0.0003448 | | | |
| Residual | 136 | 3793133.602 | 27890.68825 | | | | | |
| Total | 138 | 4264972.737 | | | | | | |
| | | | | | | | | |
| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 3045.107996 | 38.65752854 | 78.77140912 | 2.3617E-115 | 2968.660384 | 3121.555609 | 2968.660384 | 3121.555609 |
| COVID CONFIRMED CASES | -0.00492477 | 0.001201673 | -4.098259662 | 7.11789E-05 | -0.007301152 | -0.002548388 | -0.007301152 | -0.002548388 |
| COVID DEATH CASES | 0.080205588 | 0.02072466 | 3.87005573 | 0.00016818 | 0.039221314 | 0.121189863 | 0.039221314 | 0.121189863 |

The regression analysis of the study has been performed in the following table which indicates that there is the negative and insignificant relationship between COVID 19 confirmed cases and closing price index. Secondly, there is a positive and significant relationship between the closing price index and COVID 19 death cases. . The coefficient determination, in this case, is 0.1106, which means 11.06% of the variation in the dependent variable is explained by independent variables which state that the model is not a good fit.

 

**NSE 500 INDEX**

| *Regression Statistics* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Multiple R | 0.164577986 | | | | | | | |
| R Square | 0.027085913 | | | | | | | |
| Adjusted R Square | 0.013285714 | | | | | | | |
| Standard Error | 1071.350061 | | | | | | | |
| Observations | 144 | | | | | | | |
| | | | | | | | | |
| ANOVA | | | | | | | | |
| | *df* | *SS* | *MS* | *F* | *Significance F* | | | |
| Regression | 2 | 4505582.065 | 2252791.032 | 1.96271893 | 0.144295122 | | | |
| Residual | 141 | 161838524.5 | 1147790.954 | | | | | |
| Total | 143 | 166344106.5 | | | | | | |
| | | | | | | | | |
| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 8591.977715 | 109.9161408 | 78.16848055 | 5.4378E-118 | 8374.681035 | 8809.274394 | 8374.681035 | 8809.274394 |
| COVID CONFIRMED CASES | 0.00335138 | 0.001777329 | 1.885627047 | 0.061402398 | -0.000162278 | 0.006865038 | -0.000162278 | 0.006865038 |
| COVID DEATH CASES | -0.130141282 | 0.072573794 | -1.793226935 | 0.07508015 | -0.273614701 | 0.013332136 | -0.273614701 | 0.013332136 |

The third regression analysis of the study has been performed in the following table which indicates that there is the positive and insignificant relationship between the closing price index and COVID 19 confirmed cases. Secondly, there is a negative and insignificant relationship between COVID 19 death cases and closing prices. The coefficient determination, in this case, is 0.0270, which means 2.70% of the variation in the dependent variable is explained by independent variables which state that the model is not a good fit.

**KSE ALL INDEX**

| *Regression Statistics* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Multiple R | 0.211508412 | | | | | | | |
| R Square | 0.044735808 | | | | | | | |
| Adjusted R Square | 0.0308914 | | | | | | | |
| Standard Error | 2575.494962 | | | | | | | |
| Observations | 141 | | | | | | | |
| | | | | | | | | |
| ANOVA | | | | | | | | |
| | *df* | *SS* | *MS* | *F* | *Significance F* | | | |
| Regression | 2 | 42867907.68 | 21433953.84 | 3.231326793 | 0.042512964 | | | |
| Residual | 138 | 915378053.6 | 6633174.302 | | | | | |
| Total | 140 | 958245961.3 | | | | | | |
| | | | | | | | | |
| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 25624.76762 | 266.9371258 | 95.99551783 | 3.0902E-128 | 25096.95189 | 26152.58334 | 25096.95189 | 26152.58334 |
| COVID CONFIRMED CASES | -0.165741913 | 0.065205058 | -2.541856713 | 0.012131166 | -0.294672105 | -0.036811722 | -0.294672105 | -0.036811722 |
| COVID DEATH CASES | 7.946744973 | 3.129905533 | 2.538972787 | 0.012227016 | 1.757971677 | 14.13551827 | 1.757971677 | 14.13551827 |

The third regression analysis of the study has been performed in the following table which indicates that there is a negative and significant relationship between relationship between closing price index and confirmed cases, however in the second phase the results indicated that there is a positive and significant relationship between closing price index and death cases. The coefficient determination, in this case, is 0.044, which means 4.4% of the variation in the dependent variable is explained by independent variables which state that the model is not a good fit.

Hence, based on the above regression analysis, we fail to reject the null hypotheses that the performance of S&P 500 index is influenced by COVID-19 fatalities. Although, the findings suggest that the performance of S&P 500 index is influenced due to COVID-19 related confirmed cases.

Secondly, based Shanghai composite index, we fail to reject the null hypotheses that the performance of the Shanghai composite index is influenced by COVID-19 confirmed. The findings suggest that the performance of S&P 500 index is influenced due to COVID-19 related death cases.

However, in case of the NSE 500 index, we accept the null hypothesis that the performance of the stock market is influenced by COVID 19 confirmed and death cases.

And at the last, KSE all indexes, we fail to reject the null hypothesis that the performance of the KSE all indexes is influenced by COVID-19 confirmed cases. The findings suggest that the performance of S&P 500 index is influenced due to COVID-19 related death cases.

## CONCLUSION

The objective of this study was to determine the impact of COVID-19 on the performance of emerging stock

 

market and to the best of my knowledge, it is one of the few studies exploring the relationship of COVID-19 and the performance of the stock market. The study Hypothesized that the performance of emerging stock market is influenced as a result of COVID-19 confirmed cases, and fatalities. The findings of the paper suggest first for S&P 500 index that only COVID 19 confirmed cases are a strong predictor of the performance of the stock market and death cases have an insignificant relationship with the performance of the stock market.

Secondly, for the Shanghai Composite index is that only death cases are a strong predictor of the performance of the stock market and confirmed cases have an insignificant relationship with the performance of the Shanghai composite index.

Third, for the NSE 500 index is that both the confirmed cases and death cases have an insignificant relationship with the performance of the NSE 500 index.

And the last one KSE all index that death cases are a strong predictor of the performance of the KSE all indexes and confirmed cases are insignificantly related to the performance of the stock market. Further, studies can be conducted by adding macroeconomic variables or by replicating this study in other countries that are badly by this COVID 19 pandemic.

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