

# Impact of the Coronavirus (COVID-19) on Major Northern Hemisphere Stock Markets

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**Abstract.** As is known, the stock market plays a critical role in the development of economy all over the world even during the epidemic of Coronavirus (COVID-19). The economic risks posed by the pandemic are even more severe by the high degree of interconnectedness within the modern economic system. This paper obtains a large number of theoretical and analytical results on the impact of the outbreak on stock markets in various continents and different countries. Therefore, this paper primarily summarizes and analyzes the general effect of the pandemic on stock markets of the main countries in the Northern Hemisphere. The results of this paper are based on a review of previous literatures. It is shown that the outbreak has a generally non-positive impact on countries economy and finance, albeit a limited one, and it typically has relatively pronounced and severe effects within the initial stage.

**Keywords:** COVID-19; Stock market; impact; northern hemisphere.

## 1. Introduction

In March 2020, COVID-19 has declared a global pandemic due to its rapid spread globally [1]. As of August 22, 2022, 59,326,992,262 confirmed COVID-19 cases had been reported globally to the WHO, with 6,446,547 deaths [1], escalating panic and uncertainty in the capital markets [2]. Countries worldwide have taken strict containment measures to stop the outbreak's spread, negatively affecting economic development and business operations, trade, tourism, transportation, and increasing unemployment [3].

COVID-19 not only significantly impacts economic and social development but also influences the operation of financial markets. The COVID-19 epidemic, according to the World Bank, would cause the world's economy to experience the worst downturn since World War II [4]. The infectious spread of the outbreak and its subsequent effects have been identified as one of the threats to the world financial market as a black swan event. It has significantly heightened stock market turbulence and reduced investment returns [2]. According to the available literature and data, the outbreak caused a significant rise amount in stock volatility. However, the extent of this increase varied from country to country, depending on the severity of the epidemic there [5]. Volatility was also higher in countries with many reported cases and deaths.

Many authors also pointed out that the outbreak's negative effects were evident within a relatively short period and that the intensity would decrease over time. Daily new confirmed and fatal cases had a substantial inverse relationship with stock market returns; Ashraf also noted that the negative impact of the newly reported cases on stocks was more pronounced than on the new deaths [6]. In addition, some studies using panel studies in analyzing the outbreak's impact on different stock markets suggest that there are bidirectional spillover effects from the epidemic between different countries and continents [7].

Specifically, this paper analyzes how the pandemic has affected stock markets in the Northern Hemisphere countries, and the remaining parts of the paper are structured as follows.: Stock markets in Asia, North America, Europe, and Africa are discussed in Section 2, and the paper is wrapped up in Section 3.

## 2. Literature Review

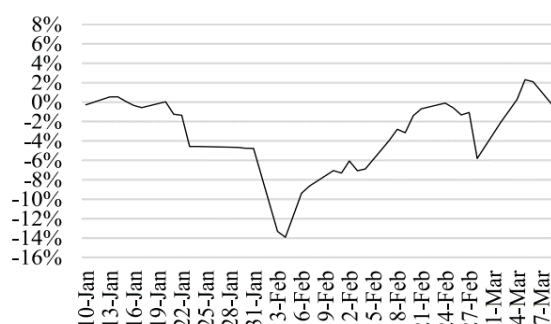
In order to provide a comprehensive overview of the effects that the outbreak influenced stock markets in the Northern Hemisphere countries, this study will draw from various sources, including previous research and analysis pertinent to the topic. This will be done in order to provide information that is accurate and up-to-date. After reviewing the previous literatures conducted on the influences of the pandemic, this paper will then group the analysis according to geography to provide a further overview from the perspectives of Asia, North America, Europe, and Africa.

This paper evaluates some literature employing panel analysis and time series approaches. Some of the articles in this review are comprehensive studies spanning multiple continents and countries, while others narrow their scope to just one or a select few.

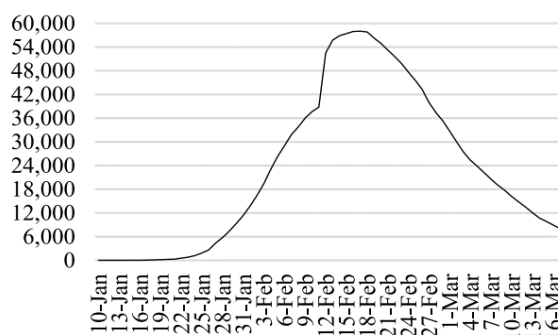
### 2.1 Asian

China was the first nation to experience the widespread shock of the COVID-19 pandemic. After that, the outbreak spread rapidly through Asia and eventually to almost all countries in the world [8]. Kumarapperuma et al. confirmed that the outbreak has severely affected the Asian stock markets by using the event study and fixed effect panel regression analysis, emphasizing that for a limited time following the outbreak, both stock returns and liquidity would be affected [9].

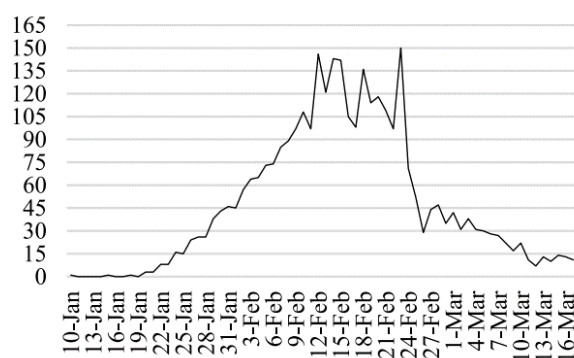
Using daily data, Al-Awadhi and colleagues analyzed the impact that COVID-19 had on two indexes, both of which measure the performance of stocks traded on Chinese exchanges. As a result of what they observed in Figures 1 through 3, they declared that the rising daily death toll and new cases significantly impacted the Chinese stock market [10]. Jin employs the ARDL bounds test, pointing out that the epidemic reduces the Chinese stock index and increases its volatility in the short run, and as the pandemic progresses in the long run, the stock market performance gradually improves to its pre-epidemic level [11].



**Figure. 1** China Stocks daily average returns[10]



**Figure. 2** Daily confirmed cases[10]



**Figure. 3** Daily confirmed death cases[10]

Japan took preventative measures shortly after the pandemic began in order to mitigate the economic fallout. However, the macroeconomic downturn and lockdown policy caused a short-term and damaging blow to the Japanese stock markets in many industries [7]. It has been shown through research on the effects of the pandemic on the Korean stock market that the stock prices tend to fall and the volatility trend up as the number of confirmed incidents rises, while a decrease in cases has no direct positive effect. However, after Korea has passed the first wave of the most severe infection, the negative effect begins to lessen in the second and third waves of infections [12]. In the long run, governments might implement measures to counteract the epidemic's detrimental effects on financial markets in the post-epidemic age, leading to less volatile markets and higher stock prices [11]. The outbreak's impact on the Indian stock market's volatility is assessed using the GLS regressions method, which showed that its average daily returns are lower than the pre-crisis negative returns. It was consistent with the instability trend of the global market. Compared to the data from before the outbreak, the standard deviation of return for all indices increased 1.8 to 3 times, and healthcare was the only industry that got positive returns during the crisis [13].

Another noteworthy point is that COVID-19's effect on stock markets has spillover effects between stocks in Asia, Europe, and other countries [7].

## 2.2 North America

Previous reports on related studies have proven that daily increased newly confirmed COVID-19 cases significantly lowered North American stock returns [14]. Bloomberg reported that during the epidemic's early stages (mid-March 2020), the Dow had reached a low point due to uncertainty [15]. Shehzad et al. compared the outbreak's impact on stock markets globally, finding that stock markets in Europe and the United States were more severely affected by COVID-19 [16]. The stock market volatility in the United States is currently at an all-time high compared to all other epidemics. There is a significant correlation between the rise in illiquidity and volatility in the United States stock market and the increased daily report confirmed and death cases. At the same time, the imposition of prohibitions and embargoes contributed to lower the level of liquidity and stability in the United States stock market [17].

Several studies [14-17] have reported the non-positive impact of daily increased cases and mortality on two major US stock indices. Using ordinary least squares (O.L.S.) regression, Albulescu et al. analyzed the impact of official disclosures of daily new cases and deaths on the volatility of the U.S. stock market [18]. They also emphasized the significant and positive impact of mortality in determining the volatility of the U.S. stock market [18]. The resulting unpredictability amplifies the volatility of the stock market in the United States, which affects the world financial cycle [18].

The Canadian and American financial systems are very intertwined historically [19]. According to a time-based volatility model analysis of the Toronto Stock Exchange (TSX) trading index, the Canadian stock market index was vulnerable to news (both positive and negative) while the pandemic was beginning [19]. Later, lessening market volatility was linked to government initiatives to steady Canada's financial markets [19].

## 2.3 Europe

As the outbreak swept the spread globe, its epicenter shifted to Europe [7]. Empirical research has demonstrated that the epidemic harmed European stock markets [20-24]. The outbreak severely affected stock returns in almost all European countries, with stock market liquidity declining [20]. After an investigation of daily data from hundreds of companies in 17 European countries, Ruben noted that the European stock market performance was negatively associated with daily confirmed cases and deaths [21]. Some authors used panel analysis to examine how the outbreak affected the stock markets of many different nations, including Italy, France, Germany, and Spain. These authors reached the same conclusion as Laszlo et al. that the outbreak had a detrimental effect on various countries' economies and adversely affected stock market liquidity and stability [7]. New deaths caused by the pandemic significantly impacted the volatility in the UK stock markets and spread rapidly in the short term. However, the new death cases have less impact on the volatility than the United States stock market [22]. In addition, Sherif noted that under the outbreak's impact, stock returns in the European IT Industry were significantly better than the market, while stock indices in many sectors, including transportation, beverages, travel, and leisure, were below market levels [23]. Besides Britain, France, Spain, and Italy, these developed countries in Europe; to determine if the outbreak-induced crisis influenced the Romanian equity market, Gherghina et al. also utilized the autoregressive distributed lag (ARDL) model and gave consistent conclusions [24].

When the COVID-19 outbreak had just begun, European stock markets were exacerbated in the short term by the wide spread of the virus; Europe's stock market indices followed GDP's decline as investors reacted to news of COVID-19's impact on GDP [20]. Moreover, the epidemic was contained in China as time progressed, but the performance of European stocks during the latter part of the has had a countervailing effect on Chinese stocks [7]. This further supports the article in pointing out the spillover effects of the epidemic on stock markets across countries and continents [7]. In the face of the widespread measures countries took to deal with the transmission of the pandemic; the government-provided lockdown policy mitigated the market volatility caused by the new mortality rates [22]. At the same time, Ruben noted that the impact of government measures was mixed (both positive and negative), with liquidity restrictions having a negative impact on returns. However, economic support and stimulus measures positively impacted stock markets [21].

## 2.4 Africa

To avoid greater damage from the spread of COVID-19, African governments have adopted policies that have imposed a total economic blockade on major cities throughout Africa, which had a devastating influence on economic conditions, including the return of the stock market [25]. Similar to Asia, Europe, and North America, some studies have shown that African stock market returns are negatively associated with the increased diagnostics given daily and death cases from the outbreak [25]. According to Takyi and Bentum-assessment Ennin's from 2021, stock market performance in Africa declined after the pandemic by around -2.7 percent to -11.1 percent [26].

Kumeka et al. employed three cointegrating regression models to study the stock markets in the three African economies, Nigeria, South Africa, and Egypt, which were hardest hit by COVID-19 and strict lockdown policies [27]. The increase in new diagnoses and the number of daily deaths negatively impacted the stock markets of the three countries [27]. Furthermore, they discovered that returns were more responsive to the overall increased reported cases per day and the stringency policy than the increase in mortality in Nigeria [27]. Raifu used time series and panel approaches to investigate how the increased daily confirm. Death cases affected the performance of stock markets in 14 African countries. The author indicated that a daily patient increase has a non-positive and noticeable resultant stock market reaction. As opposed to that, the rise in COVID-19-related fatalities had much less of an adverse effect and was essentially nonexistent [25]. These findings fit the content's description of Takyi et al., who used a time series model based on a Bayesian framework to evaluate the impact of the pandemic on the stock market performance of more than a dozen African

nations [25-26]. In addition, related studies used statistical methods to demonstrate further that the strong non-positive effects of outbreaks on these countries' stock markets are transient [26].

Despite the African stock market's negative correlation with daily new confirmed cases, the association was not statistically significant when compared with data from the study by Ashraf et al. reveals that this association was not statistically significant in Africa [6, 25]. One possible explanation is that most African countries are still developing compared to developed countries; financial activity in developed countries is active and tight, so the impact of COVID-19 is even more pronounced [25].

### 3. Conclusion

The pandemic is a worldwide crisis for public health and the financial market. Directly, the outbreak has caused a phased labor supply shortage in manufacturing and service industries; indirectly, transportation, logistics blockades, and restrictions have disrupted the normal flow of labor and raw materials, thereby further affecting the global economy and financial markets. Since the pandemic began, stock markets across the globe have experienced precipitous declines, including the index, such as FTSE and Nikkei.

This paper discusses the general impact of the pandemic on finance stock markets in the Northern Hemisphere, with evidence drawn from an overview of the existing literature. When the number of new cases and fatalities are on the rise, the stock markets of nearly all major countries in the northern hemisphere tend to become more volatile and produce lower returns—however, fear and doubt following an outbreak fade with time. The effects of epidemics on the stock market are not constant; rather, they decrease in intensity and duration over time.

Furthermore, the severity of pandemics' impact on financial or stock markets varies from region to region. The shock on stock markets during the COVID-19 epidemic has spillover effects across countries and continents by summarizing and comparing the performance of major countries in the Northern Hemisphere during the outbreak. It also manifests itself more strongly in developed nations than in less-developed ones. Although the pandemic did cause disruptions in the market, these effects were lessened by the proactive preventative measures taken by governments in response to the outbreak.

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