Financial Market Under the Influence of COVID-19

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Abstract

The novel coronavirus, as known as the COVID-19 pandemic began to spread rapidly around the world, the financial markets have been under much volatility, pressure, and uncertainty since the first quarter of 2020. A recession and bear market rapidly began due to widespread shutdowns of businesses and social distancing in the United States. It creates an unprecedented level of risk, causing investors to suffer significant losses in the short term. The purpose of this research paper aims to investigate the effect of COVID-19 on global and U.S. financial market activities. Concentrating on exploring oil and tourism industries that are seriously affected, present a study using a regression model, and ANOVA analysis suggest that correlation is significant between daily positive increase cases and S&P 500 stock daily and COVID-19 pandemic is a critical source of stock market challenge.

Introduction

COVID-19 pandemic impact on organizations, communities, and individuals is rapidly evolving. It’s not only a public health crisis and a global pandemic, but it has also significantly affected the global financial markets and economy. An official announcement made by the World Health Organization -WHO, the first COVID-19 pandemic confirm case was found in Wuhan province, China, at end of 2019. (Fan, Liu, Pan, Douglas & Bao, 2020). It happened during the most important holiday of the year in China, the Spring festival. Hundreds of millions of people rushed home to reunite with their families, which is the largest human population migration in the world. After that, it turned the outbreak into a national crisis, the virus quickly spread to all over China and other countries in a concise period. At the time of writing this paper in early Oct. 2020, there are pointing to over 210 thousand deaths, and over 7.5 million infected cases have been reported in the U.S. (CDC, 2020). This COVID-19 pandemic is still ongoing, with the final scale of the disaster is still unknown.

In order to prevent the spread of COVID-19 pandemic, each nation's governments have taken active measures to executed social distancing orders and locked its markets, businesses, schools. People were forced to live in their own houses. Subsequently, it has severely risen in unemployment, reduced income, and disruptions in the services, manufacturing industries, transportation, etc. The U.S. unemployment rate was caused to a high record at 14.7 percent in April 2020. (BLS, 2020). At the same time, the S&P 500 stock market index was the first to respond to news of the disease, it recorded several shock waves and fell by more than 33% from February 19 to March 23, 2020. (Cox, Greenwald & Ludvigson, 2020). Financial market volatility continues to intensify in the context of COVID-19 pandemic uncertainty.

Unfortunately, the financial market and the global economy were already showing signs of a slowdown when COVID-19 arrived, and it is undoubtedly worse. The COVID-19 is a great source of systemic risk; therefore, more further researches are needed on the financial market under the influence of COVID-19 spread. The most reasons this research paper specifically focus on the U.S. financial markets that because U.S. financial market is one of most major sources of spillover effects on other regions and markets; U.S. is the country with the largest number of infections in the world, it has more information on the risk associated with the spread of COVID-19, which can use their experience for other countries to mitigate the risks. (Sharif, Aloui & Yarovaya, 2020).

Besides, the COVID-19 pandemic impact on the presence of stock market prices can not be ignored. Many early research papers already extend the analysis and investigate the correlation between U.S. stock return and COVID-19 confirmed cases by estimating the regression model. However, most of the related study has limitations in the short period of analysis between March to May 2020, which is the most affect stock market period over the year. (Gormsen & Koijen, 2020).

Therefore, the purpose of this research paper is to provide informed comments on the potential impact and actual of the COVID-19 pandemic on financial markets and structure the study to contributions to the literature on the most severely affected area in oil price and tourism. This research paper also extends the study of the impact of official announcements regarding new COVID-19 daily positive increase cases on the S&P 500 stock daily close from March 1st to the end of Sep. 2020.

COVID-19 pandemic affect oil prices

Due to a combination of demand and supply issues, as well as the uncertainty of the future, the oil prices in the global market got plummeted, which led to the collapse of financial markets. The global oil demand is declining as the impact of COVID-19 spreads globally. The decline in oil demand is particularly significant because oil is mainly used in the transportation industry, the closure of businesses, the reduction of domestic and international travel, and the quarantines and lockdowns measure in many countries has shrunk the oil demand. (Sharif, Aloui & Yarovaya, 2020). The oil prices sunk below zero, and oil closing at -$37.63 with May futures for WTI on April 20th. (Saefong & Watts, 2020). COVID-19 infection cases have increased recently, questions over what a second wave can be for the future economy and resource demand, which resulted in investors have become more cautious in general.

There is a severe effect of COVID-19 for the oil-dependent countries. The low demand and decline in global oil prices for petroleum products in the international market have led to a significant shortage of oil revenues in oil-dependent countries, which worsened the balance of payments and has increased the current account deficits of many oil-dependent countries. Its subsequent devaluation of local currencies against the U.S. dollar, such as s such as Venezuela, Nigeria, and Angola. (Ozili & Arun, 2020).

COVID-19 pandemic hits tourism

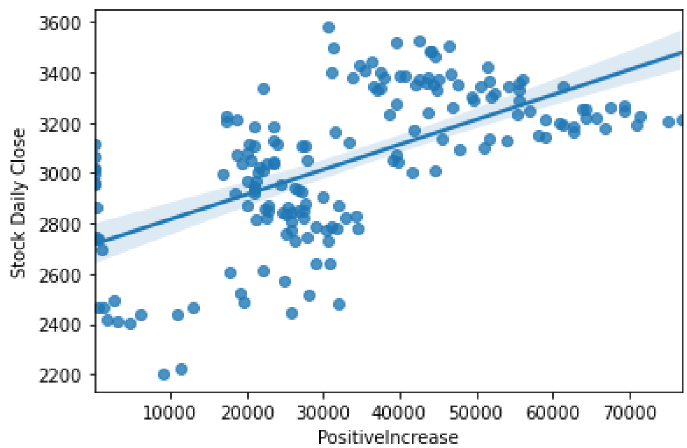
COVID-19 pandemic outbreaks have severely affected the tourism industry, with a concomitant effect on the traveling-related financial markets and their economic growth. When an unknown virus spreads rapidly, the governments put action into travel restrictions, which subsequently led to a decrease in demand for various travel forms, which forced some airline companies to suspend their operations temporarily. With such travel restrictions, the global loss caused by the tourism industry alone exceeds $200 billion, excluding other losses from tourism travel. According to the International Air Transport Association – IATA, the aviation industry's total loss is $113 billion. 8 US airlines sought $50 billion in bailout found for the US aviation industry alone. (Ozili & Arun, 2020).

A study of epidemic spread addressed its financial market impact that suggested the most significant negative impacts were seen on the consumer side. It will be severely affected by the export of services and local consumption related to tourism. The study also proves that the outbreak of infectious diseases hinders tourism development because the industry relies on human mobility. (Farzanegan, Gholipour, Feizi, Nunkoo & Andargoli, 2020). According to Tourism Economics reported that 50 percent of travel supported jobs will be lost by December, and 1.3 million jobs will be lost in the future if there is no immediate assistance. There is 11 percent of pre-pandemic employment in the hospitality and leisure industry in the U.S. and has suffered 36 percent of all job losses. The COVID-19 pandemic has resulted in over $400 billion in cumulative losses for the U.S. tourism economy since the early of March 2020. (Sack & Molon, 2020).

COVID-19 pandemic on stock market

Recently a financial report released by the Goble Financial Stability in April 2020 stated that global financial system was extremely impacted by the COVID-19 pandemic. (Global Financial Stability Report, 2020). The impact of the financial crisis caused by the COVID-19 pandemic crisis was much greater than that of 2008. It caused a 3 percent contraction of the global economy so that it was named the Great Lockdown. (World Economic Outlook, 2020). Due to the rapid growth of uncertainty in the investment environment, the opportunity cost of investors has increased. Many early studies already present the impact of the COVID-19 pandemic on the stock price response of U.S. firms. In particular, the trend of stock prices has continued to decline significantly. The S&P 500 in the U.S. has experienced this situation. The S&P 500 had a decline of 20% in the first-quarter, which is the worst period of the year since 2008. (Rosenbaum, 2020).

Stock markets are interdependent and interlinked. Based on existing literature, this research paper discovered the linkages across markets during the crisis and generate a new investigation about the impact of COVID-19 on S&P 500 from the period dated March 1st to the end of Sept. 2020. The study applied daily positive increase cases as independent variables from the COVID tracking project were collected and reported timely. (COVID Tracking Project, 2020) and the S&P 500 stock daily close as the dependent variable from the historical database of Yahoo finance. (Yahoo Finance, 2020). The study constructs a panel simple linear regression model with coefficients $\theta=(\theta 1,...,\theta n)$θ=(θ1,...,θn) to minimize the residual sum of squares between the daily positive increase cases as independent variable and S&P 500 stock daily close as a dependent variable by the linear approximation. The study design is analytical and descriptive by using the quantitative method with the machine learning of Python. The data visualization shows as below:



Also, the data was designed and processed through Python data analysis. The result found out that there are a total of 175 observations in both positive daily increase and S&P stock daily close, the Pearson correlation coefficient reached 0.612, and the regression model was significant from ANOVA analysis of variance that turns out the value of F is 469.6, and the P-value is less than the significance level 0.05, which means there is moderate evidence that the correlation is significant between daily positive increase cases and S&P 500 stock daily close.

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	79445767851	1	79445767851	469.6081612	1.59312E-66	3.868318852
Within Groups	58872757116	348	169174589.4			
Total	138318524967.6160	349				

Conclusion

The financial markets continue to fluctuate since the spread of the virus may continue to disrupt economic activities and negatively impact the service industries and manufacturing, especially in developed countries. In the COVID-19 pandemic crisis, governments worldwide have launched support programs to protect the most affected companies and people from the economic impact of the COVID-19 pandemic, which has caused an extremely negative and volatile overall financial market response. This research paper had a massive literature reviews on the most severely affected area in oil price and tourism industries. And due to data limitation, most of early research project were only focus on the shot period to investigate the effect of COVID-19 on stock market. The finding of this research paper presents a longer study period to capture the socioeconomic consequences of the stock market under the influence of COVID-19 from March to end of Sept. 2020. The results indicate that the S&P 500 stock daily close is significance affected by the COVID-19 daily increase cases.

Obviously, communicable diseases like COVID-19 can cause high financial and economic costs on global and regional. Due to globalization, transportation connectivity, and economic interconnection, once the disease started to spread in multiple places, it becomes extremely expensive and difficult to contain the virus and reduce the risk of imports. How to resume work while ensuring people’s health and safety has become a huge challenge for every country. This requires global investment in vaccine development, distribution, international collective action, and preventive measures. The outbreaks of new infections will most likely not disappear in a short time, active international action is needed. We must protect our economic prosperity and sustainability while saving countless lives.

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