

COVID-19 Pandemic, Financial Markets and Government Policies Responses: A Review Article

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Abstract

Knowing how financial markets are affected by pandemics like COVID-19 can be extremely helpful for economic activists and economic planners. Numerous studies have been conducted in this field, and in the present study we try to provide an overview. Reviewing the literature on COVID-19 and financial markets may be done from several perspectives. Here we focus on finding a common answer from among the various studies while emphasizing two points: first is the duration of the effect pandemics have on financial markets; Studies have shown that COVID-19 has a long-term effect on certain financial markets while its effect on others is only short-term.

The second involves investigating the effectiveness of government policies regarding COVID-19. The available literature can be classified into two groups. First, studies conducted in countries where governments responded to COVID-19 more rapidly and managed to prevent the disease from spreading. In these cases, the negative effects of COVID-19 were less enduring but government intervention increases long-term uncertainty and causes long-term problems in financial markets.

The second category comprises studies that have used the Oxford COVID-19 Government Response Tracker (OxCGRT) index or the Stringency Index (SI) and examined the impact of these indices on stock market returns and volatility. The predominant result in these studies is that government policy responses increase stock market volatility and decrease returns.

For the most part, government intervention seems to have been an effective way to stop the COVID-19 pandemic, but policymakers have faced a trade-off between citizens' health and stock market disruptions.

Keywords: COVID-19 • Financial markets • Government policy responses • Stringency index

Introduction

In late 2019, a new virus, later called COVID-19, began to spread in Wuhan, China, and quickly turned into a pandemic. In addition to threatening human health, the virus has had far-reaching negative effects on other aspects of human life, such as education, production, and the financial sector. Due to the widespread impact and the unknown nature of the disease, researchers in various economic and social fields have done numerous studies on COVID-19's mechanism of action [1].

One of the most important sectors of the economy that facilitates the production sector and plays a vital role in any economy, is the financial market. With the outbreak of the COVID-19 pandemic, financial markets also experienced myriad problems. Thus, it is important to study exactly how the COVID-19 pandemic affects financial markets.

This study reviews. But given the extent of the literature, this article mainly focuses on two points: first, the duration of the impact of the epidemic on financial markets, and second, the impact of government policy response measures on the relationship between financial markets and COVID-19. Therefore, a review of the literature on the duration of the effects of COVID-19 follows the introduction. Then, the impact of government policies is discussed. Finally, a summary and conclusion are presented [2].

Literature Review

The impact of COVID-19 on financial markets: Short-term or long-term?

One aspect of the COVID-19 pandemic is that it is not evenly distributed throughout the globe. As shown in Figure 1, for example,

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the number of patients worldwide in April 2021 was more than 150689587. South and North America have had the most victims. Among Asian countries, COVID-19 has had the most outbreaks in India. European countries have also been widely afflicted by COVID-19 [3].

Given the heterogeneous distribution of the corona virus among countries, one cannot expect a homogeneous impact on financial markets around the world. Thus, in some countries it has displayed long-term effects while in some; its effects have been more transient (Figure 1) [4].

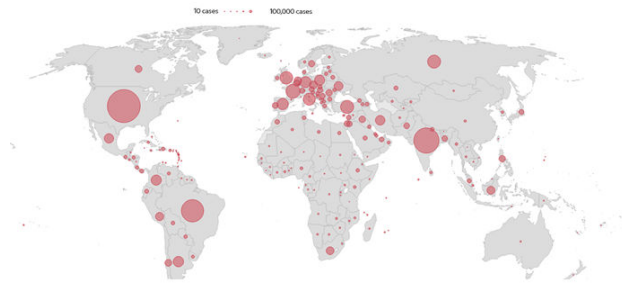


Figure 1. Coronavirus cases worldwide.

Wang and Enilov have studied the causality between COVID-19 and stock market returns in the G7 using two different methods, Dumitrescu and Hurlin and Konya [5]. They demonstrated that there is a causal relation between COVID-19 and stock market returns in Canada, France, Germany, Italy and the United States. But there is no evidence of a causal relationship between COVID-19 and Japan's stock market returns. Overall, the results of the study by Wang and Enilov indicate the short-term impact of COVID-19 on global financial markets. Figure 2 shows the number of COVID-19 patients in the G7 countries [6].

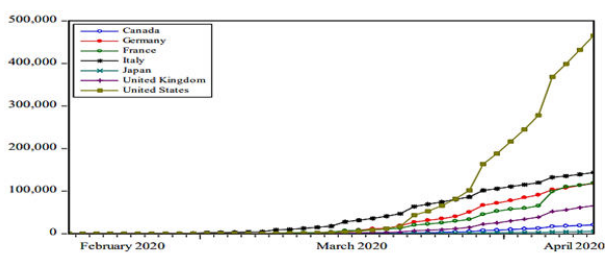


Figure 2. Time series of COVID-19 total cases in G7 countries.

Ozparlak used the daily data from China, France, Germany, Italy, The United States, The United Kingdom, Spain and Turkey from 22 January 2020 and 25 April 2020 and showed that there was a significant long-term relationship between the total number of COVID-19 patients in China, France, Germany, the United Kingdom, Spain, Turkey. But that such a correlation could not be found between the number of total COVID-19 cases in France, Italy and the USA [7]. Using the time-varying kernel density estimation, Garcin et al., found that the time-varying density of daily price returns on several stock indices: American indices (NASDAQ Composite, S and P 500, S and P 100), European indices (EURO STOXX 50, Euronext 100, DAX, CAC 40) and Asian indices (Nikkei 225, KOSPI, SSE 50), with a particular focus on S&P 500, EURO STOXX 50, and the South-Korean KOSPI indices from 04/17/2015 to 05/28/2020 [8]. They described the chronology of the crisis as well as regional

disparities. The results of their analysis showed a more limited impact of COVID-19 on the financial markets in China, a strong impact in the US, and a slow recovery in Europe. But, the recovery of the Chinese and South-Korean markets was very rapid [9].

The Impact of government policy response to COVID-19 on financial markets

Government policy responses to COVID-19 pandemic appear to have had a significant impact on limiting the virus' adverse effects on various aspects of the economy, including the financial markets. Ayadi et al., (2020) deployed a VAR model to analyze the response to the evolution of the COVID-19 pandemic in the financial markets of Australia, Brazil, China, Iran, Russia, Spain, Sweden, South Korea, USA, Germany, and Tunisia [10]. They found that the response of financial markets to COVID-19 depends on the speed with which each country controlled the virus and prevented it from spreading further. The financial market was less vulnerable to the impact of the pandemic in countries that reacted quickly and limited the virus's proliferation [11]. The effect of the pandemic in these cases was also less persistent. Zhang et al. investigated the impact of the COVID-19 outbreak on financial markets of countries placed on the top 10 list of confirmed COVID-19 cases. Their results show that the pandemic has a negative effect on the financial market. They further stated that government intervention, while helpful, is only effective in the short term in that it can control investors' panic. It does, however, increase uncertainty and may cause long-term problems. Narayan et al. study the impact of G7 governments' responses to COVID-19 on their stock market returns. They found that lockdowns, travel bans, and economic stimulus packages had all a positive effect on G7 stock markets. Lockdowns were found to be the most effective in cushioning the effects of COVID-19 [12].

Rebucci et al. analyze the Quantitative Easing (QE) initiative undertaken by 21 advanced and emerging economies. They found that QE has not lost effectiveness in advanced economies but in emerging markets, the impact of QE on bond yields was much stronger [13]. Wu et al., used the Event Study Method (ESM) to investigate the relation between COVID-19 and tourism stocks in China. They also studied the impact of government policies on that correlation. Their results indicate that the impact of COVID-19 on tourism stocks has been short-term. In this study, the effect of government policies on tourism stocks has been non-linear and has had a positive effect on abnormal high-yield quantiles [14].

Discussion

The oxford COVID-19 government response tracker

Recently, researchers of Oxford university have introduced a comprehensive index for measuring government response to the COVID-19, namely "the Oxford COVID-19 Government Response Tracker" (OxCGRT). This index provides a systematic way to track government responses to COVID-19 across countries and sub-national jurisdictions over time. 20 indicators of government response have been used in making OxCGRT. OxCGRT includes the Stringency Index (SI), the government response index, the

containment and health index, and the economic support index (Figure 3) [15].

The OxCGRT and stringency indices are common indicators recently used by researchers to investigate the impact of government intervention faced with COVID-19. Stringency Index (SI) is a baseline measure of variation in governments' responses to COVID-19. The index is calculated as the average of nine sub-indices, each taking a value between 0 and 100:

$$I = \frac{1}{9} \sum_{i=1}^9 I_i \quad (1)$$

Where sub-indicators consist of:

- School closures
- Workplace closures
- Cancellation of public events
- Restrictions on the size of public gathering closures of public transport
- Stay-at-home requirements
- Restrictions on internal movement
- Restrictions on international travel
- Public information campaigns

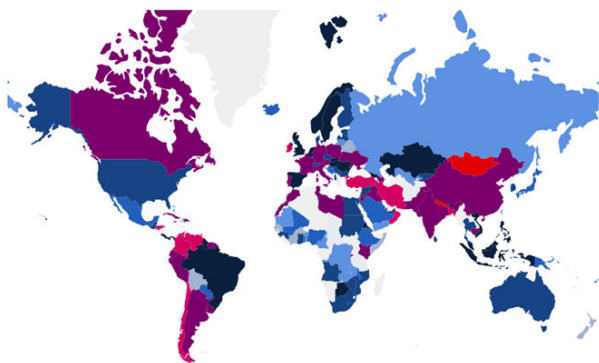


Figure 3. Government response stringency index.

Figure 3 shows the government response stringency index for April 30, 2021. Based on that, Mongolia has the highest Stringency level at 96.3. Following that are Nepal at 91.67, with Turkey, Colombia, Iran, Chile, Venezuela and Oman following suit.

Since this index has been only recently introduced, not many studies have been based on it. Zaremba et al., used SI to examine the impact of the stringency of government policy responses on stock market volatility in 67 countries. They used the IS index based on seven sub indicators: school closures, workplace closures, cancellation of public events, closure of public transport, public information campaigns, restrictions on internal movement, and international travel controls. Moreover, they used a regression method to observe the effects of the different intervention measures making up SI on stock market volatility. They discovered that SI has a positive impact on all the measures of volatility of stock market. Ibrahim et al., however, arrived at the opposite conclusion. They used OxCGRT to examine the impact of government policy responses on stock market volatility in the following 11 countries: Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, China, Japan, and South Korea. Their results show that in most of these countries, the government measures could reduce stock market volatility.

The results obtained by of Yang and Deng were much closer to that of Zaremba et al. They used four comprehensive indicators from the OxCGRT database (stringency index, government response index, containment and health index and economic support index) for 20 OECD countries from February 1, 2020 to October 1, 2020. They determined that number of confirmed cases of COVID-19 decrease stock market returns and that governments' intervention measures, such as social distancing, testing and contact tracing policies, magnify this negative effect.

Conclusion

Start and spread of the COVID-19 pandemic has had various effects on many aspects of human life. One of the most important of which is the economy. The economies of different countries have been affected, depending on the extent of the pandemic. Researchers have conducted numerous studies on the subject. Given the importance of financial markets, one of the focus points have been the impact of COVID-19 on financial markets. Although there is a consensus on the negative impact of the pandemic on financial markets, there are various views on the duration of that impact. The duration may vary from country to country. One of the factors influencing the persistence of COVID 19's effects on financial markets cited in the literature is government policy measures.

Some studies have concluded that the government's rapid response to the Coronavirus has played a large role in reducing the persistence of the pandemic's negative effects on financial markets. To ascertain that, some studies have used SI or OxCGRT indices. Studies show that government intervention has increased financial market volatility and reduced returns. It should be noted that Ibrahim et al., has reached the opposite conclusion in the case of 11 Asian countries.

Overall, examining the impact of government policy responses to COVID-19 on financial markets to seems to require more data, more accurate analyses, and the use of more robust techniques. So, there are still many opportunities for further research in this area.

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