The Effect of the COVID-19 Pandemic on Stock Market Returns in Emerging Economies: Empirical Evidence from Panel Data*

Franck Edouard GNAHE¹, Junaid ASHRAF², Fei-Ming HUANG³

Received: December 15, 2021 Revised: February 27, 2022 Accepted: March 17, 2022

Abstract

From several socioeconomic perspectives, the present health crisis can be connected to the 2008 financial and economic catastrophe. Governments worldwide are working hard to keep the markets in check, as evidence suggests that the health crisis may soon become an economic crisis. This paper aims to analyze the effect of COVID-19 on the selected stock market. Using a panel of daily COVID-19 confirmed cases and deaths and the stock market from 22 developing countries, we exploit an oil price as a shock to the stock market and examine the effect of COVID-19 on the slowdown of the stock market. We find a negative and significant impact of COVID-19 on the stock market in the first stage till April. However, there is no net influence on the stock market downturn when we extend the period. However, further study suggests that the outbreak’s negative influence on the selected stock market has diminished and has begun to decline as of mid-April. As a result of the COVID-19 effect on the chosen stock, our findings imply that the government in the chosen market should consider a regulatory mechanism to reduce the stock market slowdown induced by the pandemic COVID-19.

Keywords: COVID-19, Stock Market, Panel Data

JEL Classification Code: C33, E44, G1

1. Introduction

COVID-19’s unexpected outbreak, which began in 2020, has harmed the entire environment. The stock market, as the country’s most important capital market, can intuitively represent financial behavior and economic situations. In the case of pandemics, more businesses have been impacted in various ways depending on their activity. According to a study published by the World Health Organization (WHO) (2020), a pandemic in the global environment emerged in over 216 nations in 2020, with over 8.3 million confirmed illnesses and over 450 thousand deaths. The pandemic poses several challenges for businesses’ service providers and chances for emerging market stock markets. COVID-19 has the potential to harm financial institutions via the stock market. Some well-known example includes global supply chains, consumption behavior, and labor markets (Ashraf, 2020; Ahmar & del Val, 2020; Al-Awadhi et al., 2020; Al-Mansour & Al-Ajmi, 2020) explain the effect of the pandemic on the stock market, which is the slowest pace of the country economic conditions, whereas the developing market has limited resource to cope with the effect of the COVID-19.

Concerning COVID-19, whether it causes instability of country economic conditions is an issue that has caught the attention of industry practitioners. However, the literature in this regard is limited. Most studies concentrate on a subcategory instead of analyzing its overall effect (Avishai, 2020; Eichenbaum et al., 2021; Ramelli & Wagner, 2020;
Gormsen & Koijen 2020; Zhang et al., 2020). There has been no research into whether the COVID-19 pandemic affects the stock market in the country. Given the country’s economic situation as a result of the pandemic and the increased attention industry practitioners are giving it, there is a void in the literature about the impact of COVID-19 on stock market fragility, which prompts this study.

Major cultural and support events have been canceled, and the country’s response to the pandemic has been unprecedented. The government is taking emergency measures (shutdown and social distancing). To deal with the shock, the government is collaborating with the finance ministry and the central bank to put assistance and stimulus plans in place. For example, according to Goodwell (2020), an unusual global shock magnifies the effect of negative repercussions in the global stock market. It could be a cause of financial system contagion and vulnerability. His research focuses on the financial industry to show how COVID-19 has a negative impact on stock markets. The pandemic on social trading platforms persists at a high level after investing in the socio-economic implications of the pandemic from Nicola et al. (2020), which could exacerbate asset price swings and raise the stock market risk. In a study regarding Saudi Arabia, Shaik (2021) discovered the same thing; Khatib and Nour (2021) discovered the same thing in a Malaysian study. According to Salisu and Sikiru (2020), a greater financial requirement is associated with better country economic conditions.

Carlsson-Szlezak et al. (2020) discover that a COVID-19 pandemic is related to a stock market crisis in specific industries. The spread of COVID-19 analysis in a foreign country is likely to cause havoc on stock market co-movement, showing that the majority of investors are pessimistic. The more violent the stock market reaction, the more pessimistic the majority of investors are. This argument is consistent with Ashraf (2020) that COVID-19 caused unprecedented volatility and robust negative returns in the stock market. Furthermore, in response to the pandemic, the government and central bank enacted effective measures; Elgin et al. (2020) also believe that an efficient response could maintain stock market stability by increasing the existing extent of financial need convenience the stock market. According to this report, the positive aspect of the stock market reaction to the pandemic is more prominent in emerging countries with a flawed financial system.

We explore whether the COVID-19 pandemic increases or lessens the stock market’s fragility because it could have both positive and negative consequences. However, the restricted availability of data in many countries poses a problem. This study addresses these issues by analyzing COVID-19 daily data and stock market returns from March 4, 2020, to May 5, 2020.

The COVID-19 virus was discovered in early November 2019 in Wuhan, Hubei Province, and was quickly spread to almost 200 countries and territories (3 months). War, crisis, and pandemics are examples of foreign circumstances that generate systemic risk and influence the stock market. The rivalry between Saudi Arabia and Russia over oil production and tariffs is a significant factor that influences the stock market. Moscow has refused to participate in the OPEC meeting in Vienna on the 5th and 6th of March 2020, which announced a reduction in oil production. As a result, on March 8, 2020, the Saudi Arabian government announced a tax reduction of $6 to $8 per barrel for Asian and European clients, as well as an increase in oil supplies. From this vantage point, we utilize the oil price as a positive shock to the stock market and investigate its impact on the stock market’s return fragility.

We were exploring the influence of COVID-19 on the stock market slowing using a pooled Ordinary Least Squares regression technique and utilizing an oil price as a shock to the stock market. COVID-19 has a negative and considerable influence on the stock market in the first stage, which lasts through April. When we extend the duration, however, there is no net influence on the stock market downturn. However, further study suggests that the outbreak’s negative influence on the selected stock market has diminished and has begun to decline as of mid-April. Furthermore, we investigate the nation group and discover that the impact of an outbreak is reduced in the selected stock market. The regulator put in place the appropriate policies and recommended an even better stimulus package. Our findings suggest that the government in the chosen market should pursue regulatory measures to alleviate the stock market slowdown induced by the COVID-19 epidemic.

The rest of this research is hierarchized: In section 2, we present the data, baseline empirical model, and methodology employed to examine the stock market. Section 3 presents the empirical results and explores the robustness of our practice model. Section 4 reports our conclusion and explains the policy implication of our findings.

2. Research Methodology

Between March and May 2020, 22 countries were active in Morgan Stanley Capital International: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, South Korea, Malaysia, Mexico, Pakistan, Philippines, Poland, Russia, South Africa, Thailand, Turkey, and the Arab Emirates. This period provides a favorable context for research relating to the first day when one positive case of COVID-19 was recorded in each of the study countries, (ii) data is based on regular daily business, Monday through Friday, except on holidays,
The effect of COVID-19 on the stock market would be calculated using a pooled Ordinary Least Squares (OLS) approach with standard robustness error increased by Driscoll and Kraay (1998). By using a “nonparametric” (i.e., not involving the estimation of statistical parameters) approach to estimate standard errors that are resistant to autocorrelation and heteroscedasticity, this practical method is resistant to cross-sectional dependence between panel units. Even if the cross-sections are huge in comparison to the time proportion, Driscoll and Kraay’s (1998) robust standard error is useful.

3. Results and Discussion

The mean value of the stock market, oil, the exchange rate, and COVID-19 all validate the factor’s random walk property. The lowest and maximum values of COVID-19 and oil price, on the other hand, reveal that COVID-19 fluctuates a lot daily, implying that oil price fluctuates a lot (Table 1).

Table 2 shows the results of the unit-roots analysis for each variable—the majority of the variables at the first difference.

Tables 3 and 4 show the Driscoll-Kraay regression results, which show that an increase in the exchange rate and a shock to accurate oil prices have a significantly negative influence on the stock market for the whole sample period. In terms of economics, each unit increase in infection rate reduces stock market performance by 0.0054 percent across the entire sample period, by 0.0054% during the whole sample periods, by 0.0029% during March 4-April 4, by 0.0089% during March 4-April 20, by 0.0018% during March 4-May 5. Given the influence of the pandemic on the selected stock market, the computed coefficients were invariably negative and significantly smaller in absolute value.

Table 4 shows the results. We also divide the stock market into two groups to examine the effect of the COVID-19 regulation. In terms of response time, we reported the regression findings by country group. Also included is the government’s stimulus package. However, a deeper inspection of panel A demonstrates that COVID-19 has a far smaller impact on the stock market when necessary measures are taken quickly. There is evidence that nations with larger

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19</td>
<td>1.410</td>
<td>11790.4</td>
<td>24113.87</td>
<td>0</td>
<td>122392</td>
</tr>
<tr>
<td>OIL price</td>
<td>1.140</td>
<td>18.46667</td>
<td>13.66172</td>
<td>-37.63</td>
<td>46.78</td>
</tr>
<tr>
<td>Stock market</td>
<td>1.140</td>
<td>622.6448</td>
<td>395.4379</td>
<td>1035.17</td>
<td>40</td>
</tr>
<tr>
<td>ER</td>
<td>1.140</td>
<td>23.585</td>
<td>15.86533</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Note: Obs is a number of observations, Mean is average, min is minimum, max is maximum, E.R. is the exchange rate.
stimulus packages are less affected by the pandemic than smaller containers, as stated in panel B.

Concerning public health, the majority of developing countries have implemented some measures, such as restricting mobility, supply chains, and commercial activities (Eichenbaum et al., 2021; Elgin et al., 2020), then propagated to the financial market (Zhang et al., 2020; Ashraf, 2020). To revitalize the economy, most countries have implemented a comprehensive monetary policy. By mid-April of the pandemic, the results of these actions had begun to offset the significant negative impact of COVID-19 on the selected stock market. This finding is consistent with Zhang et al. (2020), who argue that preset policies focused on restricting pandemic spread could benefit in the short term by reducing pessimism among consumers and investors. Furthermore, the stock market is linked to the COVID-19 pandemic. This is in line with Gormsen and Koijen (2020), who stated that these measures might lead to a misalignment of investor short- and long-term expectations.

4. Conclusion

Since the first case of the COVID-19 pandemic in Wuhan, the virus has spread all over the world. However, it is unclear whether COVID-19 is to blame for the stock market’s slump. We use a spike in oil prices as a stock market shock to investigate the impact of COVID-19 on the stock market’s slowing. COVID-19 has a negative and severe influence on the selected stock market in the first stage, which lasts through April. When we prolong the duration, however, there

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF</th>
<th>PP</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln SM</td>
<td>-10.93160 a</td>
<td>-44.77652 a</td>
<td>Stationarity</td>
</tr>
<tr>
<td>Ln ER</td>
<td>-13.1333 a</td>
<td>-71.79301 a</td>
<td>Stationarity</td>
</tr>
<tr>
<td>Ln oil price</td>
<td>-7308222 a</td>
<td>-3012475 a</td>
<td>Stationarity</td>
</tr>
<tr>
<td>Ln COVID-19</td>
<td>-4.854974 a</td>
<td>-5.023843 a</td>
<td>Stationarity</td>
</tr>
</tbody>
</table>

Note: P.P. is Phillips-Peron, and ADF is Augmented Dickey-Fuller. For pp the H0: all panels contain unit roots, Ha: at least one-panel stationary. ADF the H0: all the panels have unit roots, Ha: at least one panel is stationary. *, denote significance at the 1% for P-values. The measurement for stationarity: if the variable passes at least two tests, it is considered stationary. E.R. is the exchange rate, S.M. is the stock market.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Full Sample</th>
<th>March 4–April 4</th>
<th>March 4–April 20</th>
<th>March 4–May 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>InER</td>
<td>-2653 a</td>
<td>-1.753 a</td>
<td>-0.3483 a</td>
<td>-0.3184 a</td>
</tr>
<tr>
<td></td>
<td>(0.0291)</td>
<td>(0.0289)</td>
<td>(0.0412)</td>
<td>(0.0249)</td>
</tr>
<tr>
<td>InOil price</td>
<td>0.0722 a</td>
<td>0.3237 a</td>
<td>0.38002 a</td>
<td>0.2872 a</td>
</tr>
<tr>
<td></td>
<td>(0.0109)</td>
<td>(0.0143)</td>
<td>(0.0158)</td>
<td>(0.0138)</td>
</tr>
<tr>
<td>InCOVID-19</td>
<td>-0.0054 a</td>
<td>-0.00299 a</td>
<td>-0.00895 a</td>
<td>-0.00182 a</td>
</tr>
<tr>
<td></td>
<td>(0.0014)</td>
<td>(0.0013)</td>
<td>(0.0137)</td>
<td>(0.0013)</td>
</tr>
<tr>
<td>Constant</td>
<td>7.506 a</td>
<td>6.324 a</td>
<td>6.757 a</td>
<td>6.962 a</td>
</tr>
<tr>
<td></td>
<td>(0.1019)</td>
<td>(0.1047)</td>
<td>(0.1366)</td>
<td>(0.0913)</td>
</tr>
</tbody>
</table>

Note: *indicate significance at 1%. Parentheses show standard Error values. VIF values for each model do not indicate multicollinearity problem, “ln” shows a natural logarithm. E.R. is the Exchange rate.
is no net influence on the stock market downturn. However, further study suggests that the outbreak’s negative influence on the selected stock market has diminished and has begun to decline as of mid-April. Furthermore, we discover that the episode’s impact is reduced in the stock market of choice. The regulator put in place the necessary policies and recommended an even better stimulus package.

The implications of our findings for policy are significant. Because the effect of COVID-19 on the chosen stock market is an outbreak, the government in that market should adopt a regulatory remedy to reduce the stock market slowdown induced by the COVID-19 pandemic. Because our findings imply that the COVID-19 slowdown supports the stock market, the government should focus on initiatives to mitigate COVID-19’s deceleration. Our findings provide critical information that the government can use to respond to the COVID-19 pandemic in some way. Given that COVID-19 affects the stock market, future research should look into a broader range of indices available in emerging markets. Furthermore, the study is restricted to developing countries. Despite this, the new experts will explore the coronavirus’s impact and seek solutions through research in various locations.

Note:

Oil price shocks from West Texas were collected and estimated using the same methodology to ensure that the results were robust. The GARCH approach was used to calculate the shock to natural price oil, and the exact price was calculated by deflating the Crude Oil price for each country’s monthly consumer price index (CPI, 2010 = 100). Due to the lack of daily data, we assume that the population did not change over the probe period.

Our Dataset is consistent between nations in terms of time; we discover no significant differences across country classifications in terms of how strict lockdown laws are implemented. As a result, we classified the chosen market based on how quickly they responded while putting measures in place, taking into consideration the time lag since the 100th infection case.

If the stimulus package’s size as a percentage of GDP is greater than 10%, the country is considered to have an extensive plan (package).

The data for this study can be found in the Yahoo Finance (2020) Database and Worldometer (2020) Statistics.

References


