RESEARCH ARTICLE

Stock returns, government response strategies, and daily new case bursts during COVID-19: A cross-country perspective

Bilal1 | Adeel Nasir2 | Umar Farooq3 | Muhammad Farhan Bashir4

Received: 19 December 2020 Revised: 7 August 2022 Accepted: 13 August 2022
DOI: 10.1002/ijfe.2694

Abstract
The purpose of the current research is to examine the influence of COVID-19 pandemic related governmental policies and the bursts (e.g., drastic increases in cases during certain periods) of COVID-19 cases on the abnormal returns of 725 hospitality and entertainment companies from the United States (US), China, the United Kingdom (UK), India, Thailand, Turkey, Mexico, and France. The study uses daily data from January 1, 2020, to November 20, 2021 and event study methodology. Our results offer the following insights. First, the response in the early days of COVID-19 was negative for both the hospitality and entertainment sectors. Second, regarding government response strategies: (1) announcements of stimulus packages negatively affected China’s entertainment and the UK’s hospitality and entertainment sectors, but positively impacted the US’s hospitality sector; (2) lockdown announcements adversely affected abnormal returns only in the US’s hospitality and entertainment sectors; and (3) travel restrictions affected the US hospitality and Chinese and Indian entertainment sectors in the early stages of the pandemic. Third, regarding COVID-19 case bursts, the results showed more negative abnormal returns during the first burst in the developed countries compared to undeveloped countries, while in the second burst, investors reacted more rationally, resulting in less negative abnormal returns. Conversely, more negative abnormal returns were found in the second bursts in India and Turkey. We conclude that COVID-19’s impact differed between developed and developing countries. Our findings suggest that investors should consider these differential effects when devising their portfolio strategies during COVID-19 or the similar situations.

KEYWORDS
abnormal returns, bursts, COVID-19, event study, pandemic, stock returns

1 | INTRODUCTION
An unexpected coronavirus, now known as COVID-19, which originated in the early 2020 and rapidly spread globally, with more than 278 million confirmed cases and 5.2 million deaths by the end of 2021 (Worldometer, 2021). The COVID-19 outbreak has disrupted the tourism industry’s operations, as travel restrictions across the
globe led to cancellations of domestic and international flights, as well as event postponements (Bashir et al., 2020; Karabulut et al., 2020; Li et al., 2021; Sigala, 2020). In 2020, the hospitality and entertainment sector experienced negative growth of at least 30%, accounting for US $50 billion in losses (USTA, 2020). This negative performance has significantly affected the stock returns in the hospitality and entertainment sectors, with more intense adverse effects due to emergence of various variants of COVID-19 virus. Moreover, the negative implications of the pandemic have surpassed previous extreme and endogenous events. Consequently, investors are always interested in measuring the adverse emergency events like the COVID-19 pandemic to adjust their portfolio strategies and overcome the economic impacts of such events on the tourism industry (Gounder & Cox, 2021; Hanafiah et al., 2021; Kaczmarek et al., 2021; Yiwei et al., 2021).

Governmental COVID-19 response strategies designed to minimize the infectivity of covid-19 pathogen, that is, minimum distance between individuals, travel bans, and domestic lockdowns, have significantly impacted tourism (Goh, 2021; Kaczmarek et al., 2021; Volgger et al., 2021; Wang et al., 2021). Prior studies have investigated how tourism sector has been affected since emergence of the pandemic (Bas & Sivaprasad, 2020; Dube et al., 2020; Foo et al., 2020; Liew, 2020; Sharma & Nicolau, 2020; Song et al., 2021; Wang et al., 2021). However, there has been no cross-country investigation of how COVID-19 cases, governmental response strategies, and bursts in COVID-19 cases influence hospitality and the entertainment firms’ stock returns. Thus, this study fills that gap and provides novel contribution to the contemporary literature in the following ways.

First, the current research provides novel empirical contribution by exploring the bearing of daily new COVID-19 cases on hospitality and the entertainment sectors’ abnormal returns during the early days (e.g., the first 100 days following the first COVID-19 case) in four developed (e.g., the United States (US), France, Mexico and the United Kingdom (UK)) and four developing (e.g., China, Turkey, Thailand and India) economies. Second, our study analyses the influence of governmental COVID-19 response strategies (stimulus packages, lockdown announcements, and travel restrictions) on stock performance during the early days. Third, our study’s novel contribution is our investigation of abnormal returns during the bursts of daily new cases of COVID-19. Our study employs event study methodology to fulfill these three objectives. The study’s findings will help investors devise investment strategies to maximize profits and minimize risk in adverse situations like the COVID-19 pandemic. Our study also contributes by assisting policymakers in taking appropriate actions and making decisions that will protect the markets for hospitality and entertainment sector stocks.

Current article is structured as follows: Section 2 offers overview of relevant literature. Section 3 deliberates the research methodology, while Section 4 offers empirical findings and detailed discussion. Section 5 covers and conclusion and policy recommendations.

## 2 LITERATURE REVIEW

In capital markets, catastrophes and pandemics influence investor behaviour to create abnormal returns (Nippani & Washer, 2004). Goh and Law (2002) argued that the Hong Kong avian flu outbreak in 1998 harmed the stock performance of the Hong Kong tourism and hospitality sectors. Siu and Wong (2004) studied the SARS outbreak in Hong Kong, where unexpected negative shocks had the most significant short run impact on services linked to the tourism and hospitality sector; still, the tourism sector’s stock values remained intact as the Hong Kong government ensured timely safety measures. Chen et al. (2007) employed an event-study approach to suggest that the emergence of SARS significantly impacted the stock prices of Taiwanese hotels, as evidenced by significantly negative cumulative abnormal returns.

Kuo et al. (2009) studied the avian flu’s influence on the Asia’s tourism and the hospitality sectors’ stock market performance. The researchers claimed that Asian tourism had been most severely hit by avian flu because of ineffective suppression strategies, which significantly influenced the investors’ confidence in emerging economies. Tung and Chao (2011) analysed the regional crisis events and the subsequent domino events impact the tourism industry by investigating the impact of natural disasters in 1999, the 9/11 terrorist attacks, and the SARS pandemic, finding that employment, income and economic contributions were severely affected by all three events.

Current research indicates that catastrophes, emergencies and pandemics significantly influence the tourism sector’s stock returns around the globe. For example, Donadelli et al. (2017) investigated the infectious diseases’ influence on stock returns and claimed that disease-related fears are negatively correlated with tourism stock returns in the long run. Funck and Gutierrez (2018) explored the Ebola outbreak’s impact on share turnover, share volume and trading activity. They found that industry-specific portfolios of hospitality, tourism and airline sectors reversed themselves in the post-Ebola period. Kim et al. (2020) confirmed the negative impact
of infectious disease outbreaks such as – swine flu, avian flu, Salmonella Infantis and Bovine spongiform encephalopathy – on the performance of restaurants. Several studies documented an inverse impact of COVID-19 on stock returns (Arslan et al., 2021; Farooq et al., 2021; Farooq et al., 2022).

Likewise, extant research researched the how COVID-19 has affected the tourism sector’s stock returns. For example, Goodell and Huynh (2020) documented the COVID-19 pandemic’s abnormal shock on stock returns. Some recent studies (Baek et al., 2020; Dube et al., 2020; Sharma & Nicolau, 2020) proposed that the US’s hotel, restaurant, airline, cruise line, and car rental sectors have experienced substantial negative stock returns since covid-19 outbreak. Song et al. (2021) found that restaurant firms with higher internationalization, cash flows and leverage are able to overcome stock abnormalities. Liew (2020) observed a sharp decline in the online travel companies’ stock values due to COVID-19.

Zheng et al. (2020) found that the COVID-19 outbreak has significantly obstructed China’s environment, mining, electric and the transportation industries’ stock performance. Prior researchers have analysed COVID-19’s impact on the tourism sector in specific settings. Some of these studies have also explored government responses to COVID-19 (Aharon et al., 2021; Phan & Narayan, 2020; Wang et al., 2021). Baker et al. (2020) studied the US government’s policy response to COVID-19, concluding that a strong governmental response was played a vital part in preventing stock market fluctuations during COVID-19 compared to the previous pandemics during 1919, 1958, and 1968. Topcu and Gulal (2020) claimed that government stimulus package announcements and response time significantly offset the adverse effects of the COVID-19 pandemic in emerging markets.

Khan et al. (2020) recommended that drastic measures similar to those the Chinese government implemented for the Shanghai Composite Index are critical for regaining investors’ confidence. Ali et al. (2020) documented that the Chinese government’s introduction of market stabilizing strategies ensured market trade stability in the Chinese stock markets. However, these studies investigated the overall impact of government responses. No specific study has investigated the tourism sector specifically; moreover, studies of the cross-country effects of COVID-19’s impact in the early days and the bursts of daily new infections from covid-19 in the hospitality and entertainment sectors are missing from the literature.

Current literature has extensively debated that the COVID-19 pandemic influence and government responses can vary between developed and developing economies’ stock markets; that is, stock markets in developing countries are more reactive due to their institutional environments. Therefore, developing countries face more adverse impacts from the COVID-19 pandemic. Likewise, the magnitude of COVID-19 waves differed among countries. Thoroughly, investigating and analysing the adverse effects during each burst is important and is not found in prior studies of hospitality and entertainment sector stock performance. This research aims to fill these gaps and provide cross-country evidence of the impact in the early stages and of bursts of COVID-19 on the hospitality and the entertainment sectors’ abnormal returns using an event study methodology.

3 | RESEARCH METHODOLOGY

As shown in Table 1, a dynamic sample of 725 hospitality and entertainment companies from eight countries was selected for this study: the US, China (CH), the UK, India (IN), Thailand (TH), Turkey (TU), Mexico (ME), and France (FR). The study employed the R-studio package “batchgetsymbol” to extract market and stock returns from Yahoo Finance. Our sample is diversified because we have included developed as well as emerging economies based on the tourism sector and the COVID-19 outbreak. Our study’s sample period covers two phases. The first phase includes the first 100 days (January 01, 2020, to May 31, 2020) following the reporting of the first COVID-19 case. The impact of governmental COVID-19 response strategy events on stock returns is also examined during these 100 early days, following the dates as shown in Table 2. The second phase identifies the bursts of daily new infections from the abnormal returns during the last 2 years from January 01, 2020, to November 20, 2021, as shown in Table 3.

Our study deploys event study methodology using events during the early days (100 days from the first case) of the pandemic, including the date on first COVID-19 case was reported, date of lockdown, date of travel

| Table 1 | Sample description |
|---------|-------------------|
| **Country** | **Hospitality** | **Entertainment** | **Total** |
| USA | 146 | 213 | 359 |
| UK | 23 | 39 | 62 |
| France | 7 | 23 | 30 |
| China | 25 | 59 | 84 |
| India | 47 | 56 | 103 |
| Mexico | 12 | 13 | 25 |
| Turkey | 8 | 8 | 16 |
| Thailand | 32 | 14 | 46 |
restrictions and date of stimulus packages. Table 2 provides the announcement dates of each event. We extracted daily prices for the selected sample for one year before this date for the estimation window. From January 1, 2020 onwards, we selected 100 days from January 1, 2020 to May 31, 2020 (classified as the early days) to

### Table 2: Event dates

| Country | First COVID-19 case | Lockdown | Travel restrictions | Stimulus package |
|---------|---------------------|----------|---------------------|------------------|
| USA     | 20-01-20            | 21-03-20 | 19-03-20            | 27-03-20         |
| UK      | 31-01-20            | NA       | 23-03-20            | 11-03-20         |
| Mexico  | 28-02-20            | 21-03-20 | 21-03-20            | 05-04-20         |
| France  | 24-01-20            | 17-03-20 | 17-03-20            | 17-03-20         |
| Turkey  | 11-03-20            | 27-03-20 | 21-03-20            | 17-03-20         |
| China   | 31-12-19            | 26-03-20 | 23-01-20            | 03-02-20         |
| India   | 30-01-20            | 22-03-20 | 24-03-20            | 12-05-20         |
| Thailand| 13-01-20            | 01-04-20 | 26-03-20            | 10-03-20         |

### Table 3: Highest cases in a day due to COVID-19 and average abnormal returns of market

|            | Developing | Developed |
|------------|------------|-----------|
|            | China      | Turkey    | India     | Thailand  | France    | Mexico    | UK        | USA       |
| 1st Burst  |            |           |           |           |           |           |           |           |
| Start      | 1/28/20    | 11/29/20  | 8/8/20    | 5/17/21   | 10/15/20  | 11/27/20  | 12/20/20  | 11/4/20   |
| Peak       | 2/14/20    | 12/2/20   | 9/16/20   | 8/17/21   | 11/3/20   | 1/21/21   | 1/9/21    | 1/11/21   |
| End        | 4/23/20    | 12/23/20  | 10/21/20  | 11/7/21   | 11/23/20  | 2/15/21   | 1/29/21   | 2/11/21   |
| Days       | 63         | 18        | 53        | 125       | 28        | 57        | 30        | 72        |
| 2nd Burst  |            |           |           |           |           |           |           |           |
| Start      | 7/28/20    | 3/24/21   | 3/29/21   |           | 1/22/21   | 7/15/21   | 7/7/21    | 8/6/21    |
| Peak       | 7/31/20    | 4/20/21   | 5/8/21    |           | 4/17/21   | 8/22/21   | 7/21/21   | 9/13/21   |
| End        | 8/5/20     | 5/9/21    | 6/21/21   |           | 5/5/21    | 10/2/21   | 11/7/21   | 10/6/21   |
| Days       | 7          | 33        | 61        | 125       | 74        | 57        | 88        | 72        |
| 3rd Burst  |            |           |           |           |           |           |           |           |
| Start      | 1/9/21     | 8/2/21    |           |           | 7/28/21   |           |           |           |
| Peak       | 1/18/21    | 8/15/21   |           |           | 8/16/21   |           |           |           |
| End        | 2/4/21     | 11/7/21   |           |           | 8/26/21   |           |           |           |
| Days       | 19         | 70        |           |           | 22        |           |           |           |
| 4th Burst  |            |           |           |           |           |           |           |           |
| Start      | 7/23/21    |           |           |           |           |           |           |           |
| Peak       | 8/11/20    |           |           |           |           |           |           |           |
| End        | 8/19/21    |           |           |           |           |           |           |           |
| Days       | 20         |           |           |           |           |           |           |           |
| 5th Burst  |            |           |           |           |           |           |           |           |
| Start      | 9/14/21    |           |           |           |           |           |           |           |
| Peak       | 4/15/20    |           |           |           |           |           |           |           |
| End        | 9/26/21    |           |           |           |           |           |           |           |
| Days       | 9          |           |           |           |           |           |           |           |
| 6th Burst  |            |           |           |           |           |           |           |           |
| Start      | 10/25/21   |           |           |           |           |           |           |           |
| Peak       | 3/10/20    |           |           |           |           |           |           |           |
| End        | 11/7/21    |           |           |           |           |           |           |           |
| Days       | 10         |           |           |           |           |           |           |           |

Note: The above table is providing the start, peak, and the end date of the burst in daily new COVID cases. Here, burst is defined if daily new cases are in the fourth quartile of the complete dataset of daily new cases of the respective country. Figure 3 also presents the graphical representation of these bursts for each country. In the table, “Days” represent the number of working days (excluding Saturday and Sunday) between the start and end date of the burst.
estimate daily abnormal returns. The abnormal returns were calculated for the early days using a 250-day estimation window before January 01, 2020. China’s first COVID-19 case was reported on December 31, 2019. The average and cumulative abnormal returns are analysed for the selected event dates.
The first event is the date of the first reported coronavirus case. We investigated the investor reaction for the first 100 days after the first COVID-19 case. Figures 1 and 2 show the daily new cases and deaths during this early period. During the early days, Turkey documented a comparatively low death rate (e.g., the highest deaths in
a single day were 127). China controlled the overall spread of the disease, with an average of 34 deaths per day due to the virus and 621 average new cases reported each day. Although China controlled the disease, there were two black COVID-19 days with 15,152 as the highest number of cases in a single day (February 13, 2020) and 1290 as the most deaths for a single day (April 17, 2020).

Our study detects the influence of the COVID-19 pandemic’s early days on abnormal returns in the hospitality and entertainment sectors. After March 2020, there was significant persistence in India’s new positive cases, with the highest number of 5611 cases on May 20, 2020, and an average of 970 new cases during the early days. Furthermore, the highest number of deaths (195) in a single day occurred on May 5, 2020, with an average of 30 deaths per day during the early days. Thailand’s effective COVID-19 management resulted in the lowest death rate during this pandemic, with a maximum of 4 deaths on April 3, 2020 and 252 and 24 as the maximum and average number of new cases per day, respectively.

Similarly, abnormal returns are measured for government response strategies during initial outbreak, including the date of travel restrictions, lockdown date, and date of stimulus packages. Governments responded with these strategies to overcome the COVID-19 pandemic’s negative influence on economic activities. Such announcements can have a positive impact if the government has the public’s trust, or they can be devastatingly negative because they highlight the severity of the economic hurdles. These events tend to create panic among investors, and this study aims to capture the abnormality created by such events. We calculated abnormal returns during a window from 3 days before \((t-3)\) to 7 days \((t+7)\) after the event date \((t_0)\).

A single-factor market model with GARCH \((1, 1)\) error is used for the estimation window to develop a forecasting model, as suggested by Bollerslev (1986). To develop the estimation model to calculate the abnormal returns for the early days, we used the “EventStudy” R-package proposed by Schimme et al. (2014). Specifically, we calculated abnormal returns \((AR_t)\) with the following equation:

\[
AR_t = R_t - E[R_t | \Omega_{t-1}].
\]  

(1)

The mean–variance method measures daily abnormal returns as shown in Equation (1) (Chang et al., 2018). Here, \(E[R_t | \Omega_{t-1}]\) and \(R_t\) are the expected returns (based on conditional variance) and actual returns, respectively. The expected return and conditional variance of \(E(R)_{it}\) and \(\sigma^2_i\) of the GARCH model are calculated as follows:

\[
E(R)_{it} = \alpha + \beta R_{mt} + \varepsilon_{it}.
\]  

(2)

Equation (2) shows the conditional variance estimation model GARCH \((1, 1)\). Here, \(\beta\) is the slope coefficient, conditional variance in the model, and the residuals derived from the mean filtration. However, to investigate the overall event impact on the hospitality and entertainment sector, average abnormal returns \((AAR_t)\) are calculated during a window from 3 days before \((t-3)\) to 7 days \((t+7)\) after the event date \((t_0)\) using the following equation.

\[
AAR_t = \frac{\sum_{i=1}^{N} AR_{it}}{N}.
\]  

(4)

The following t-test is employed to measure AAR significance:

\[
t_{AAR} = \sqrt{N \left(\frac{AAR_t}{S_{AAR}}\right)},
\]  

(5)

where \(S_{AAR}^2 = \frac{1}{N-1} \sum_{i=1}^{N} (AR_{it} - AAR_t)^2\).

Moreover, CAAR (Cumulative average abnormal returns) were also measured to explore the overall significance and performance of event window through following formula:

\[
CAAR = \frac{\sum_{i=1}^{N} CAR_i}{N}.
\]  

(6)

where \(CAR_i = \frac{\sum_{t=i+1}^{T} AR_{it}}{i+1}\).

We also measure AARs and CAARs during the bursts of daily new cases using two years of data from January 1, 2020 to November 20, 2021. We define a burst as when daily new cases are in the fourth quartile for the period
of analysis. For this purpose, the daily reported cases were extracted from the WHO database. The daily reported cases are normalized and presented in Figure 3; daily new cases in the fourth quartile are shown in red. For instance, in the case of the US, daily new cases crossed the fourth quartile twice. The first burst in the US started on December 20, 2020, and continued for more than 1 month, ending on January 29, 2021. We denoted this period as a burst, as the daily new cases were in the fourth quartile of the US’s complete dataset.
FIGURE 4  (a). Average abnormal returns for the developed countries. (b) Average abnormal returns with trend lines [Colour figure can be viewed at wileyonlinelibrary.com]
We also identified the highest number of daily new cases during each burst. For instance, in the first burst in the US, January 9, 2021 is date of the highest number of daily new cases. Table 3 summarizes the start, peak, and end dates of each burst for each country. To investigate each burst’s impact, AARs and CAARs were calculated for each country. However, all the results are compared across the selected countries to explore the hypothesized differential effects of the COVID-19 pandemic on emerging and developed countries.

4 | RESULTS AND DISCUSSION

4.1 | Early days: impact of COVID-19 pandemic

The current study analysis starts with the early days’ effects of the COVID-19 pandemic. Figure 4a and b shows the trends of daily AARs in the early days for developed and developing countries, respectively. Both figures represent the first COVID case with a horizontal line at time t₀. In the figures, positive average abnormal returns are denoted with green lines, while red lines show negative abnormal returns. Figure 4a and b also shows the linear trend line for the analysis period. The trend lines for all countries except China for its entertainment sector turned positive after 40–50 days into the outbreak, which indicates the investors’ long-term perspective on the stock market. The UK’s hospitality and entertainment sector documented a significant decline in prices from 10 to 30 days into the COVID outbreak but stabilized afterwards. Similar results were found in France and Mexico, where the market showed high negative AARs in early responses to COVID-19. The US exhibited mixed results but with more negative AARs. Overall, developing countries showed negative AARs for the first 30 days following the first COVID-19 case.

In Turkey, the first COVID-19 case appeared in April 2020. Both sectors were affected for a very short time, and then AARs turned positive after approximately 20 days. The Indian and Thai markets also experienced negative AARs, particularly for the period from the 20th to 45th day after the first case. The Chinese markets showed negative AARs for the first 15 days, while mixed results dominated negative AARs. Overall, we find that the hospitality and entertainment sectors of both developed and developing countries documented negative AARs within the first 40 days following the first COVID-19 case. Our findings confirm that the COVID-19 pandemic panic significantly influenced the investors’ reactions and adversely affected stock returns, consistent with prior studies’ results (Kaczmarek et al., 2021; Yiwei et al., 2021).

4.2 | Government responses in the early days and their impact

In the COVID-19 pandemic’s early days, governments responded with recovery strategies, including stimulus packages, lockdowns, and travel restrictions. This study also explores the impact of such response strategies. First, Table 4 presents the daily AARs during a window from 3 days before (t₋₃) to 7 days (t₊₇) after the date of the announcement of the stimulus package (t₀) in the initial COVID-19 pandemic phase. The US and UK stock markets documented negative AARs at the event date and afterwards. The AARs of the US hospitality sector were between −3% and −4% for 3 days after the announcement, as shown in Table 4. The news hit the UK hospitality sector severely, and it went from −1.8% AAR to 18.6% AAR on the third day of the announcement. Similarly, the entertainment sector dropped significantly to −11.2% on the third day of the announcement. There is no link between stimulus package news and returns in developing countries such as India, Thailand and Mexico, as the AARs are insignificant after the event. However, the China’s entertainment sector experienced significantly positive abnormal returns.

Overall, based on CAARs, stimulus package announcements negatively affected the UK’s hospitality sector. However, investors in the US’s hospitality sector reacted positively to its stimulus package. The stimulus package announcements in the UK and China during the initial COVID-19 pandemic phase negatively influenced their entertainment sectors. Our findings align with prior studies claiming that stimulus packages are not beneficial for tourism sector companies to cover up their losses (Aharon et al., 2021).

Second, another governmental response strategy was announcing lockdowns. Table 5 presents abnormal returns during lockdown announcements. Our findings indicate that the CAARs in the early days for all countries are insignificant except in the US in both the hospitality and entertainment sectors. On average, the results show no pattern of significant abnormal returns after lockdown announcements in most of the selected countries. Therefore, we find that only the US’s hospitality and entertainment sectors experienced adverse abnormal returns due to lockdown announcements in the initial COVID-19 pandemic phase. Our findings are in line with prior research arguing that investors under/overreact in financial markets in response to news such as lockdown announcements (Aharon et al., 2021; Narayan et al., 2021; Wang et al., 2021).

Table 6 presents abnormal returns after travel restrictions were imposed. Overall, our findings indicate that the abnormal returns in the Chinese and Indian
| Hospitality sector | Entertainment sector |
|-------------------|----------------------|
| US | UK | ME | FR | TU | CH | IN | TH | US | UK | ME | FR | TU | CH | IN | TH |
| AAR (-3) | 0.074* | -0.004 | -0.009 | -0.053* | -0.180* | -0.005 | 0.005 | 0.002 | 0.004* | -0.019 | -0.004 | -0.046 | -0.201* | -0.014* | -0.001 | 0.018 |
| AAR (-2) | 0.017* | -0.040* | 0.000 | -0.052 | 0.027 | 0.000 | 0.013 | 0.004 | 0.009* | -0.031* | -0.002 | -0.007 | 0.016 | -0.009* | 0.011* | 0.005 |
| AAR (-1) | 0.115 | -0.001 | -0.023 | -0.098 | -0.052* | -0.014* | 0.006 | -0.010* | -0.007 | -0.013 | -0.010 | -0.098* | -0.046* | 0.002 | 0.002 | -0.002 |
| AAR (0)  | -0.036* | -0.018 | 0.023 | -0.030 | -0.065 | -0.059* | -0.010 | -0.009* | -0.009 | -0.014 | 0.041 | 0.023 | -0.062 | -0.035* | 0.002 | 0.000 |
| AAR (1)  | -0.033* | -0.085* | 0.016 | -0.007 | -0.009 | 0.003 | 0.001 | -0.007 | 0.039* | -0.068* | 0.003 | 0.033 | 0.023 | 0.014* | -0.006 | -0.009 |
| AAR (2)  | -0.041* | -0.037 | 0.018 | -0.010 | -0.007 | -0.003 | -0.014* | -0.039* | -0.003 | -0.033* | 0.030 | -0.007 | -0.007 | 0.013* | -0.003 | -0.015 |
| AAR (3)  | -0.060* | -0.186* | -0.003 | 0.051* | 0.019 | 0.022* | 0.020* | -0.028* | -0.033* | -0.112* | -0.008 | -0.009 | 0.003 | 0.014* | 0.009 | -0.016* |
| AAR (4)  | -0.029* | -0.141* | 0.008 | -0.015 | -0.022 | 0.008 | 0.003 | -0.023* | 0.000 | -0.150* | 0.014 | -0.012 | -0.042 | 0.001* | 0.007 | -0.016 |
| AAR (5)  | -0.007* | -0.071* | 0.002 | -0.005 | 0.024* | -0.001 | 0.004 | -0.025 | -0.023 | 0.018 | -0.003 | 0.017 | 0.046* | -0.011* | 0.002 | -0.002 |
| AAR (6)  | 0.065* | -0.036 | -0.003 | 0.012 | 0.027* | 0.003 | -0.001 | -0.015 | 0.042 | 0.008 | 0.000 | 0.005 | 0.005 | 0.031 | 0.004 | -0.004 | -0.022 |
| AAR (7)  | 0.029* | -0.070* | 0.027 | 0.019* | 0.031* | 0.003 | 0.012 | -0.005 | -0.043* | 0.041 | 0.001 | 0.000 | 0.050* | -0.011* | 0.005 | 0.000 |
| CAAR     | 0.009* | -0.050* | 0.005 | -0.017 | -0.019 | -0.004 | 0.003 | -0.014 | -0.002 | -0.034* | 0.006 | -0.009 | -0.017 | -0.003* | 0.002 | -0.005 |

Note: The table is showing daily AAR (Average of Abnormal returns) from t-3 to t + 7 where t0 is the date of announcement of stimulus package. Here, CAAR (cumulative average abnormal returns) values are also provided. The date of stimulus package for each country has been provided in Table 2.

*Each value represents the significance at the 95% confidence level.
|                | Hospitality Sector | Entertainment Sector |
|----------------|--------------------|----------------------|
|                | US     | UK     | ME     | FR     | TU     | CH     | IN     | TH     | US     | UK     | ME     | FR     | TU     | CH     | IN     | TH     |
| AAR (−3)       | −0.133* | −0.071* | −0.030 | −0.053* | −0.009 | −0.007* | −0.014 | −0.018 | −0.060 | 0.018  | −0.070 | −0.046 | 0.023  | −0.003 | 0.000  | −0.015 |
| AAR (−2)       | −0.130* | −0.036  | 0.006  | −0.052  | −0.007 | 0.005*  | −0.013 | −0.004 | −0.045* | 0.008  | −0.002 | −0.007 | −0.007 | 0.003  | −0.001 | −0.012 |
| AAR (−1)       | −0.121* | 0.070*  | −0.035 | −0.098  | 0.019  | −0.003  | 0.013  | −0.001 | −0.120* | 0.041  | 0.050*  | −0.098* | 0.003  | 0.000  | 0.002  | −0.007 |
| AAR (0)        | 0.104*  | −0.038* | −0.023* | −0.030  | −0.022 | −0.003  | −0.028* | 0.015 | 0.117*  | −0.017 | 0.025  | 0.023  | −0.042 | −0.001 | −0.008* | 0.014 |
| AAR (1)        | 0.012   | 0.039   | 0.005  | −0.007  | 0.024  | −0.004  | −0.021* | 0.017* | −0.033* | 0.026  | 0.047  | 0.033  | 0.046*  | −0.008* | −0.003 | 0.001  |
| AAR (2)        | −0.003  | 0.058   | 0.009  | −0.010  | 0.027* | −0.016* | 0.013  | −0.003 | 0.034   | 0.044  | 0.013  | −0.007 | 0.031  | −0.011 | 0.001  | −0.019 |
| AAR (3)        | 0.074*  | 0.041   | −0.014 | 0.051*  | 0.031* | −0.013* | 0.011  | 0.004 | 0.004*  | 0.018  | −0.008 | −0.009 | 0.050*  | 0.002  | −0.015 | −0.007 |
| AAR (4)        | 0.017*  | 0.009   | 0.001  | −0.015  | 0.001  | −0.005  | −0.004 | 0.002 | 0.009*  | −0.007 | −0.035 | −0.012 | 0.055*  | −0.014* | −0.002 | −0.013 |
| AAR (5)        | 0.115   | −0.010  | −0.012 | −0.005  | 0.027  | 0.000  | −0.006 | 0.006 | −0.007  | −0.034 | 0.012  | 0.017  | 0.028  | −0.009* | −0.007 | −0.004 |
| AAR (6)        | −0.036* | 0.020   | −0.001 | 0.012   | 0.071* | −0.014* | 0.026  | −0.001 | −0.009  | 0.023  | −0.008 | 0.005  | 0.041*  | 0.002  | 0.009  | 0.008  |
| AAR (7)        | −0.035* | −0.016  | −0.009 | 0.019*  | 0.038  | −0.059* | 0.008  | 0.011 | 0.039*  | −0.023* | −0.004 | 0.000  | 0.032  | −0.035* | 0.006  | 0.023  |
| CAAR           | −0.012* | 0.006   | −0.009 | −0.017  | 0.018  | −0.011  | −0.001 | 0.003 | −0.006* | 0.009  | 0.002  | −0.009 | 0.024  | −0.007 | −0.002 | −0.003 |

Note: The table is showing daily AAR (Average of Abnormal returns) from $t−3$ to $t+7$ where $t_0$ is the date of announcement Lockdown. Here, CAAR (cumulative average abnormal returns) values are also provided. The date of the lockdown announcement for each country has been provided in Table 2.

*Each value represents the significance at the 95% confidence level.
|                  | Hospitality sector |                     | Entertainment sector |                     |
|------------------|---------------------|---------------------|----------------------|---------------------|
|                  | US    | ME    | FR    | TU    | CH    | IN    | TH    | US    | ME    | FR    | TU    | CH    | IN    | TH    |
| **AAR (-3)**     | -0.121* | -0.030 | -0.053* | 0.024 | -0.008 | -0.011* | 0.017* | -0.120* | -0.070 | -0.046 | 0.046* | -0.003 | 0.006 | 0.001 |
| **AAR (-2)**     | 0.104* | 0.006 | -0.052 | 0.027* | -0.016* | -0.014 | -0.003 | 0.117* | -0.002 | -0.007 | 0.031 | -0.013* | -0.013 | -0.019 |
| **AAR (-1)**     | 0.012 | -0.035 | -0.098 | 0.031* | 0.002 | -0.013* | 0.004 | -0.033* | 0.050* | -0.098* | 0.050* | 0.001 | -0.015* | -0.007 |
| **AAR (0)**      | -0.003 | -0.023* | -0.030 | 0.001 | -0.007 | 0.013 | 0.002 | 0.034 | 0.025 | 0.023 | 0.055* | -0.003 | 0.029 | -0.013 |
| **AAR (1)**      | 0.074* | 0.005 | -0.007 | 0.027 | -0.008 | -0.028* | 0.006 | 0.004* | 0.047 | 0.033 | 0.028 | -0.008* | -0.015* | -0.004 |
| **AAR (2)**      | 0.017* | 0.009 | -0.010 | 0.071* | -0.031* | -0.021* | -0.001 | 0.009* | 0.013 | -0.007 | 0.041* | -0.026* | -0.027* | 0.008 |
| **AAR (3)**      | 0.115 | -0.014 | 0.051* | 0.038 | -0.003 | 0.013 | 0.011 | -0.007 | -0.008 | -0.009 | 0.032 | -0.012* | -0.015* | 0.023 |
| **AAR (4)**      | -0.036* | 0.001 | -0.015 | -0.021 | -0.003 | 0.011 | 0.005 | -0.009 | -0.035 | -0.012 | -0.048 | -0.002 | 0.008 | 0.006 |
| **AAR (5)**      | -0.033* | -0.012 | -0.005 | -0.001 | -0.006* | -0.004 | 0.020 | 0.039* | 0.012 | 0.017 | 0.023 | -0.003* | 0.018* | 0.018 |
| **AAR (6)**      | -0.041* | -0.001 | 0.012 | 0.045* | 0.007* | -0.006 | 0.018 | -0.003 | -0.008 | 0.005 | 0.074* | 0.013* | -0.005 | 0.071 |
| **AAR (7)**      | -0.060* | -0.009 | 0.019* | 0.019 | -0.002 | 0.026 | 0.009 | -0.033* | -0.004 | 0.000 | 0.022 | -0.005 | 0.021* | -0.001 |
| **CAAR**         | 0.003* | -0.009 | -0.017 | 0.024 | -0.007 | -0.003 | 0.008 | 0.000* | 0.002 | -0.009 | 0.032 | -0.005* | -0.001* | 0.008 |

Note: The table is showing daily AAR (Average of Abnormal returns) from $t-3$ to $t+7$ where $t0$ is the date of announcement of travel restrictions. Here, CAAR (cumulative average abnormal returns) values are also provided. The date of announcement of travel restrictions for each country has been provided in Table 2.

*Each value represents the significance level at the 95% of confidence.
entertainment sectors were significantly negative for 3 days after their travel restriction announcements. However, in the US, negative abnormal returns were evidenced after the fourth day following the announcement. This could be due to the different institutional environments and capital markets of selected countries. In other words, the Chinese and Indian stock markets responded more promptly to the travel restrictions as compared to the US. Hence, our study finds that travel restrictions adversely affected the US hospitality, Chinese entertainment, and Indian entertainment sectors during the early days of the COVID-19 pandemic. The mixed findings again indicate investors’ strong or weak negative reactions in capital markets regarding travel ban announcements (Bouri et al., 2021; Narayan et al., 2021; Phan & Narayan, 2020).

### 4.3 COVID-19 bursts in the developed countries

This section examines abnormal returns during daily COVID-19 case bursts in developed countries. Table 3 provides the start, peak and end dates of each burst in each country. Table 7 further summarizes the CAAR results for each burst and country. Similarly, Figures

| Country | Category                              | CAAR  | t-value  |
|---------|---------------------------------------|-------|----------|
| France  | 1st Burst Entertainment – France       | 0.0021| 0.8631   |
| France  | 1st Burst Hospitality – France         | −0.0071| −1.6427 |
| France  | 2nd Burst Entertainment – France       | −0.0031| −2.8305 |
| France  | 2nd Burst Hospitality – France         | −0.0025| −1.8864 |
| France  | 3rd Burst Entertainment – France       | −0.0010| −0.3638 |
| France  | 3rd Burst Hospitality – France         | −0.0001| −0.0578 |
| UK      | 1st Burst Entertainment                | −0.0022| −2.2225 |
| UK      | 1st Burst Hospitality                  | −0.0026| −1.9839 |
| UK      | 2nd Burst Entertainment                | 0.0020| 0.5172   |
| UK      | 2nd Burst Hospitality                  | 0.0023| 3.8590   |
| USA     | 1st Burst Entertainment                | −0.0028| −8.4003 |
| USA     | 1st Burst Hospitality                  | −0.0082| −7.6809 |
| USA     | 2nd Burst Entertainment                | 0.0018| 2.7128   |
| USA     | 2nd Burst Hospitality                  | 0.0025| 1.6411   |
| Mexico  | 1st Burst Entertainment – Mexico       | −0.0009| −0.7457 |
| Mexico  | 1st Burst Hospitality – Mexico         | −0.0012| −1.6656 |
| Mexico  | 2nd Burst Entertainment – Mexico       | 0.0008| 1.0363   |
| Mexico  | 2nd Burst Hospitality – Mexico         | 0.0006| 0.8856   |
| India   | 1st Burst Entertainment – India        | 0.0004| 0.5841   |
| India   | 1st Burst Hospitality – India          | 0.0001| 0.1521   |
| India   | 2nd Burst Entertainment – India        | −0.0028| −3.5504 |
| India   | 2nd Burst Hospitality – India          | −0.0055| −7.6327 |
| Thailand| 1st Burst Entertainment – Thailand     | 0.0008| 1.0353   |
| Thailand| 1st Burst Hospitality – Thailand       | 0.0004| 0.9440   |
| Turkey  | 1st Burst Entertainment                | 0.0021| 0.6621   |
| Turkey  | 1st Burst Hospitality                  | −0.0006| −0.2126 |
| Turkey  | 2nd Burst Entertainment                | 0.0053| 1.4161   |
| Turkey  | 2nd Burst Hospitality                  | 0.0074| 2.2250   |
| Turkey  | 3rd Burst Entertainment                | −0.0019| −0.9319 |
| Turkey  | 3rd Burst Hospitality                  | 0.0024| 1.2080   |

Note: The table provides the cumulative average of abnormal returns (CAARs) during each burst in each country for both hospitality and entertainment sector. The highlighted rows are indicating the significance of CAARs at the 5% significance level.
FIGURE 5 COVID-19 Bursts and AARs of France [Colour figure can be viewed at wileyonlinelibrary.com]

FIGURE 6 COVID-19 Bursts and AARs of the United Kingdom [Colour figure can be viewed at wileyonlinelibrary.com]

5–11 present graphical representations of AARs during each burst for each country. In these figures, red lines represent negative AARs, while positive AARs are shown...
with green lines. The thick black line demonstrates the peak of daily new cases. The following discussion explains the CAARs (Table 7) and AARs graphs (Figures 5–11) using the burst data from Table 3.

Table 3 shows that in France, the first burst (where daily cases were in the fourth quartile) started on October 15, 2020, and ran to November 23, 2020 (28 working days), with the highest number of COVID cases on
November 3, 2020. Table 7 shows that the CAARs of both the hospitality and entertainment sectors in France during the first burst are insignificant. However, the second burst (which continued for 74 days) had a significantly negative effect on the hospitality sector in France. Conversely, the entertainment sector’s CAARs are insignificant. Similarly, both the hospitality and entertainment sectors exhibited insignificant CAARs during the third burst.

Figure 5 presents the AARs graphically during three bursts of daily cases in France. Figure 5 shows that, during the first burst, some AARs are positive (green lines) for the entertainment sector, particularly around the peak, while some AARs are negative (red lines) at the end of the burst. The interaction of positive AARs with negative AARs may be the reason for the insignificant CAAR in France’s first burst. Burst 3 provides similar results. However, in the second burst of daily cases, there are many negative AARs, especially at the start of the burst; this could be the reason for France’s significantly negative CAARs.

There were two bursts of daily new cases in the UK. The first burst started on December 12, 2020, and ran to January 29, 2021, comprising over 30 working days. Similarly, the second burst started from July 7, 2021, ending on October 2, 2021, and comprised over 88 working days. Our findings indicate that the first burst induced negative abnormal returns in the UK’s entertainment and hospitality sectors. The entertainment sector’s AAR during the first burst was −0.22%, while hospitality’s AAR was −0.26%.
However, the UK’s entertainment sector did not respond adversely in the second burst. In contrast, the hospitality sector showed significantly positive CAARs in the second burst. This pattern can be seen in Figure 6. In the figure, most of the AARs are negative in the first burst. Conversely, in the second burst, very few cases in the entertainment sector show high abnormal returns (either positive or negative). Most AARs are close to zero, indicating that investors behave more rationally. Similarly, most AARs are positive for the hospitality sector in the UK, which eventually documented significantly positive CAARs.

Table 3 shows two bursts of daily new cases in the US (based on the fourth quartile criteria). The first burst started on November 04, 2021, ending on February 11, 2021 (78 working days), with the highest COVID-19 cases on January 11, 2021. Table 7 shows that the CAARs of both sectors during the first burst are significantly negative. The first burst had a severe impact, as many AARs are negative, with few positive green lines in Figure 7. However, in the second burst (lasting 44 working days), there are more positive than negative AARs, which ultimately resulted in positive CAARs for both sectors. These statistics are consistent with the UK results, indicating that investors behaved rationally in the second burst.

Table 3 shows that Mexico also experienced two bursts of daily new cases. The first burst started on November 27, 2020 and lasted for 57 working days, ending on February 15, 2021. Table 7 shows that the CAARs for both the hospitality and entertainment sectors during the first burst are negative and insignificant. CAARs during the second burst were positive, but still insignificant. Figure 8 illustrates the daily AARs during both bursts and shows that both positive and negative AARs are seen during the first burst; however, there are comparatively more negative than positive AARs. Figure 8 also shows both positive and negative AARs during the second burst. However, around the peak of daily cases, most of the AARs are negative during both bursts for both sectors in Mexico.

Overall, we are able to suggest that the initial bursts of COVID-19 new cases affected abnormal returns in the developed countries, while in most cases; the impact of the subsequent bursts became insignificant and positive. This indicates that investors responded rationally in the later bursts. However, in most cases, negative abnormal returns are evidenced around the highest daily new cases in each burst.

4.4 COVID-19 Bursts in Developing Countries

Table 3 shows that India experienced two daily case bursts. The first continued for 53 days from August
8, 2020 to October 21, 2020, but with relatively less intensity. However, the second burst was more severe and included the India's highest daily new cases. This burst was terrible, resulting in many deaths and new cases. Table 7 shows that the CAARs for both sectors during the first burst were insignificant. A few negative AARs are seen at the start of the first burst, but more positive AARs are documented afterwards, as Figure 9 shows. Conversely, in the second burst, both sectors demonstrated significantly negative abnormal returns. Figure 9 shows that stock performance was highly negative after the second burst's peak.

Table 3 shows that Thailand faced one burst of new cases in a later period from May 17, 2021 to November 7, 2021. Perhaps, Thailand is among the countries whose first reported COVID-19 case occurred later. Table 7 shows that the overall CAARs for both sectors in Thailand are positive and insignificant. Figure 10 illustrates that both positive and negative AARs are reported during the burst. Before the peak of new cases, most abnormal returns are positive, while in the later period, more red lines indicate more negative AARs.

Table 3 shows that COVID-19 attacked Turkey with three bursts of daily cases. Table 3 also shows that the first burst lasted for 18 days (November 29, 2020 to December 23, 2020), the second burst continued for 33 days (March 24, 2021 to May 9, 2021), and the third burst persisted for 70 days (August 2, 2021 to November 7, 2021). The second burst was much more severe and included the highest daily number of COVID cases. Table 7 shows that in the second burst, only the hospitality sector recorded significantly positive CAARs, while all others were insignificant. Both positive and negative AARs occurred during the first burst, as shown in Figure 11. The figure also shows that before the second burst's peak, most AARs were positive for both sectors, while negative AARs are found after the peak. This indicates that the market initially reacted positively, but as the situation became severe, there were negative abnormal returns. However, no pattern is found during the third burst, and both positive and negative AARs were found in both sectors. As a result, overall CAARs for the third burst were also insignificant.

We did not conduct a burst analysis for China, as after the first burst (January 28, 2020 to April 23, 2020) in the initial period, the subsequent eruptions were very small. Figure 3 shows that all spikes were very small after the first burst and continued for short periods. The analysis of the first burst was provided in Section 4.1. Overall, the results showed that in most cases, there were both positive and negative AARs during burst periods. This might be due to an undeveloped market and an institutional environment that produces more abnormal returns.

To summarize, when a burst is severe, the developing countries experienced more negative AARs after the peak of that burst. India and Turkey were more severe and showed different results than those found in the developed countries that documented positive abnormal returns in the second burst. Thus, our findings imply that investors negatively respond during an uncertain or panic situation (Ashraf, 2020; Lyócsa & Molnár, 2020; Su et al., 2021).

5 | CONCLUSION

The current article investigated how COVID-19 pandemic events influenced stock returns in the hospitality and entertainment sectors. The study explores average abnormal returns (AARs) during the early days of COVID-19, three government response strategies (lockdowns, stimulus packages and travel restrictions), and COVID-19 new case bursts for firms from eight countries (the US, Mexico, the UK, France, China, India, Turkey and Thailand).

Our study provides the following insights. First, overall negative abnormal returns were reported following the first case of COVID-19 for both sectors in the developed and emerging economies. Second, the impact of government response strategies, including announcements of stimulus packages, travel restrictions as well as lockdowns to curb COVID-19 on stock returns significantly varies from country to country. First, the announcement of stimulus packages negatively affected the UK's hospitality sector, whereas investors in the US's hospitality sector reacted positively to the stimulus package. The entertainment sectors in the UK and China experienced negative effects from stimulus package announcements. Second, lockdown announcements adversely affected abnormal returns only in the US's hospitality and entertainment sectors. Third, travel restrictions affected the US hospitality, Chinese entertainment, and Indian entertainment sectors during the COVID-19 pandemic's early days.

Finally, this study also explored abnormal returns during the bursts in daily cases from January 1, 2020 to November 20, 2021. India, the US, the UK and Mexico experienced two bursts; France and Turkey each documented two bursts; and Thailand and China each faced one major burst of daily COVID-19 cases. Overall, the results showed that more negative AARs were found during the first burst in the developed countries, while investors reacted more rationally in the second burst, documenting less negative abnormal returns. Furthermore, more negative abnormal returns are seen around the peaks of bursts. Conversely, more negative abnormal returns are found in the second burst in India and Turkey. The second bursts were severe and resulted in a high number of new cases and deaths. In the rest of the cases, both positive and negative AARs were found, indicating the market imperfections in developing countries.

We conclude that investors reacted promptly (both
positively and negatively) in developing countries. However, after the peak of new cases, negative AARs are found in most cases. Overall, we conclude that how the COVID-19 pandemic influenced abnormal returns differs across countries, especially between developed and developing countries.

Our findings provide a guide for investors who wish to control the impact of the disaster created by the pandemic. Investors can devise their portfolio management according to a particular country's response. However, a more practical solution can be provided by following these future research recommendations. First, this study's novel observation is its analysis of abnormal stock returns during COVID-19 burst periods, which can be applied to other sectors and countries. Second, the study can be applied to Islamic and conventional stocks separately to compare Islamic stock responses to those of conventional stocks. Third, blockchain technology and cryptocurrency are new concepts, and we can test the abnormality of decentralized digital currency during COVID-19 bursts. Finally, various macroeconomic variables can be added to the analysis, providing further opportunities to narrow down the underlying topic by improving the model specifications and clustering optimizations. Future studies can deploy other GARCH family models and Fama and French's three-factor and five-factor models to measure expected returns for better abnormal return predictions.

ACKNOWLEDGEMENTS
We acknowledge the financial support from the Accounting Development Research Center of the Hubei University of Economics and its excellent Ph.D. program-wide grant number XJ18BS06.

CONFLICT OF INTEREST
Authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available on request from the corresponding author.

ORCID
Bilal © https://orcid.org/0000-0001-6599-6687
Adeel Nasir © https://orcid.org/0000-0002-4065-3159
Umar Farooq © https://orcid.org/0000-0002-8725-7399
Muhammad Farhan Bashir © https://orcid.org/0000-0001-5103-4639

REFERENCES
Aharon, D. Y., Jacobi, A., Cohen, E., Tzur, J., & Qadan, M. (2021). COVID-19, government measures and hospitality industry performance. *PLoS One*, 16(8), e0255819. https://doi.org/10.1371/journal.pone.0255819

Ali, M., Alam, N., & Rizvi, S. A. R. (2020). Coronavirus (COVID-19)—an epidemic or pandemic for financial markets. *Journal of Behavioral and Experimental Finance*, 27, 100341. https://doi.org/10.1016/j.jbef.2020.100341

Arslan, H. M., Bilal, C. S., Bashir, M. F., & Naseer, K. (2021). Contemporary research on spillover effects of COVID-19 in stock markets. A systematic and bibliometric review. In Proceedings of the 3rd International Electronic Conference on Environmental Research and Public Health—Public Health Issues in the Context of the COVID-19 Pandemic.

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, 54, 101249.

Baek, S., Mohanty, S. K., & Glambosky, M. (2020). COVID-19 and stock market volatility: An industry level analysis. *Finance Research Letters*, 101748. doi:https://doi.org/10.1016/j.frl.2020.101748.

Baker, S. R., Bloom, N., Davis, S. J., Kost, K., Sammon, M., & Viratyszin, T. (2020). The unprecedented stock market reaction to COVID-19. *Review Asset Pricing Studies*, 10, 742–758.

Bas, T., & Sivaprasad, S. (2020). *The Impact of the COVID-19 Pandemic Crisis on the Travel and Tourism Sector: UK Evidence*. Office for National Statistics.

Bashir, M. F., Ma, B., & Shahzad, L. (2020). A brief review of socioeconomic and environmental impact of Covid-19. *Air Quality, Atmosphere & Health*, 13(12), 1403–1409. https://doi.org/10.1007/s11869-020-00894-8

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, 31(3), 307–327.

Bouri, E., Naeem, M. A., Nor, S. M., Mbariki, I., & Saeed, T. (2021). Government responses to COVID-19 and industry stock returns. *Economic Research-Ekonomiska Istraživanja*, 35(1), 1967–1990.

Chang, K.-H., Young, N. M., Liu, C.-C., & Chung, H.-P. (2018). Behavioral stock portfolio optimization through short-selling. *International Journal of Modeling and Optimization*, 8(2), 125–130. https://doi.org/10.7763/ijmo.v8.636

Chen, M.-H., Jang, S. S., & Kim, W. G. (2007). The impact of the SARS outbreak on Taiwanese hotel stock performance: an event-study approach. *International Journal of Hospitality Management*, 26(1), 200–212.

Donadelli, M., Kizys, R., & Riedel, M. (2017). Dangerous infectious diseases: Bad news for Main Street, good news for Wall Street? *Journal of Financial Markets*, 35, 84–103. https://doi.org/10.1016/j.jfinmar.2016.12.003

Dube, K., Nhamo, G., & Chikodzi, D. (2020). COVID-19 cripples global restaurant and hospitality industry. *Current Issues Tourism*, 1–4, 1487–1490. https://doi.org/10.1080/13683500.2020.1773416

Farooq, U., Nasir, A., Bilal, & Bashir, M. F. (2022). The COVID-19 pandemic and stock market performance of transportation and travel services firms: A cross-country study. *Ekonomskia Istraživanja [Economic Research]*, 1–17. https://doi.org/10.1080/1331677x.2022.2053784

Farooq, U., Nasir, A., Bilal, & Quddoos, M. U. (2021). The impact of COVID-19 pandemic on abnormal returns of insurance firms: a cross-country evidence. *Applied Economics*, 53(31), 3658–3678. https://doi.org/10.1080/00036846.2021.1884839

Foo, L.-P., Chin, M.-Y., Tan, K.-L., & Phuah, K.-T. (2020). The impact of COVID-19 on tourism industry in Malaysia. *Current Issues Tourism*, 1–5, 2735–2739. https://doi.org/10.1080/13683500.2020.1777951
Funck, M., & Gutierrez, J. A. (2018). Has Ebola infected the market: A contagious reaction to a (media) health care crisis? *Journal of Business Strategies*, 35(2), 55–75. https://doi.org/10.2139/ssrn.2786001

Goh, C., & Law, R. (2002). Modeling and forecasting tourism demand for arrivals with stochastic nonstationary seasonality and intervention. *Tourism Management*, 23(5), 499–510.

Goh, H. C. (2021). Strategies for post-Covid-19 prospects of Sabah’s tourist market – Reactions to shocks caused by pandemic or reflection for sustainable tourism? *Research in Globalization*, 3, 100056. https://doi.org/10.1016/j.regst.2021.100056

Goodell, J. W., & Huynh, T. L. D. (2020). Did Congress trade ahead? Considering the reaction of US industries to COVID-19. *Finance Research Letters*. Placeholder Text. 36, 101578. https://doi.org/10.1016/j.frl.2020.101578.

Gounder, A., & Cox, C. (2021). Exploring the role of tourism dependency on COVID-19 induced economic shock in the Small Island Developing States. *Current Issues in Tourism*, 25, 1151–1168. https://doi.org/10.1080/13683500.2021.1989386

Hanafiah, M. H., Balasingam, A. S., Nair, V., Jamaluddin, M. R., & Mohd Zahari, M. S. (2021). Implications of COVID-19 on tourism businesses in Malaysia: Evidence from a preliminary industry survey. *Asia-Pacific Journal of Innovation in Hospitality and Tourism*, 10(1), 81–94.

Kaczmarek, T., Perez, K., Demir, E., & Zaremba, A. (2021). How to survive a pandemic: The corporate resiliency of travel and leisure companies to the COVID-19 outbreak. *Tourism Management*, 84, 104281. https://doi.org/10.1016/j.tourman.2020.104281

Karabulut, G., Bilgin, M. H., Demir, E., & Doker, A. C. (2020). How pandemics affect tourism: International evidence. *Annals of Tourism Research*, 84, 102991. https://doi.org/10.1016/j.annals.2020.102991

Khan, K., Zhao, H., Zhang, H., Yang, H., Shah, M. H., & Jhajharia, A. (2020). The Impact of COVID-19 pandemic on stock markets: An empirical analysis of world major stock indices. *Journal of Asian Finance, Economics and Business*, 7(7), 463–474.

Kim, J., Kim, J., Lee, S. K., & Tang (Rebecca), L. (2020). Effects of epidemic disease outbreaks on financial performance of restaurants: Event study method approach. *Journal of Hospitality and Tourism Management*, 43, 32–41. https://doi.org/10.1016/j.jhtm.2020.01.015

Kuo, H.-I., Chang, C.-L., Huang, B.-W., Chen, C.-C., & McAleer, M. (2009). Estimating the impact of avian flu on international tourism demand using panel data. *Tourism Management*, 15(3), 501–511.

Li, X., Gong, J., Gao, B., & Yuan, P. (2021). Impacts of COVID-19 on tourists’ destination preferences: Evidence from China. *Annals of Tourism Research*, 90, 103258. https://doi.org/10.1016/j.annals.2021.103258

Liew, V. K.-S. (2020). The effect of novel coronavirus pandemic on tourism share prices. *Journal of Tourism Futures*, 8, 109–124.

Lyócsa, Š., & Molnár, P. (2020). Stock market oscillations during the corona crash: The role of fear and uncertainty. *Finance Research Letters*, 36, 101707.

Narayan, P. K., Phan, D. H. B., & Liu, G. (2021). COVID-19 lockdowns, stimulus packages, travel bans, and stock returns. *Finance Research Letters*, 38, 101732. https://doi.org/10.1016/j.frl.2020.101732

Nippani, S., & Washer, K. M. (2004). SARS: a non-event for affected countries’ stock markets? *Applied Financial Economics*, 14(15), 1105–1110.

Phan, D. H. B., & Narayan, P. K. (2020). Country responses and the reaction of the stock market to COVID-19—A preliminary exposition. *Emerging Markets Finance and Trade*, 56(10), 2138–2150.

Schimmer, M., Levchenko, A., & Müller, S. (2014). *Event Study Tools (Research Apps)*. St. Gallen University.

Sharma, A., & Nicolau, J. L. (2020). An open market valuation of the effects of COVID-19 on the travel and tourism industry. *Annals of Tourism Research*, 83, 102990.

Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312–321. https://doi.org/10.1016/j.jbusres.2020.06.015

Siu, A., & Wong, Y. R. (2004). Economic impact of SARS: the case of Hong Kong. *Asian Economic Papers*, 3(1), 62–83.

Song, H. J., Yeon, J., & Lee, S. (2021). Impact of the COVID-19 pandemic: Evidence from the U.S. restaurant industry. *International Journal of Hospitality Management*, 92, 102702. https://doi.org/10.1016/j.ijhm.2020.102702

Su, Z., Liu, P., & Fang, T. (2021). Pandemic-induced fear and stock market returns: Evidence from China. *Global Finance Journal*. In press.

Topçu, M., & Gulal, O. S. (2020). The impact of COVID-19 on emerging stock markets. *Finance Research Letters*. 36, 101691. https://doi.org/10.1016/j.frl.2020.101691

Tung, G.-S., & Chao, P.-Y. (2011). The economic analysis of crisis events impact on tourism industry in Taiwan. *International Journal of Tourism Anthropology*, 1(3–4), 273–292.

USTA. (2020). COVID-19 Travel Industry Research. https://www.ustravel.org/toolkit/covid-19-travel-industry-research

Volgger, M., Taplin, R., & Aebli, A. (2021). Recovery of domestic tourism during the COVID-19 pandemic: An experimental comparison of interventions. *Journal of Hospitality and Tourism Management*, 48, 428–440. https://doi.org/10.1016/j.jhtm.2021.07.015

Wang, Y., Zhang, H., Gao, W., & Yang, C. (2021). COVID-19-related government interventions and travel and leisure stock. *Journal of Hospitality and Tourism Management*, 49, 189–194. https://doi.org/10.1016/j.jhtm.2021.09.010

Worldometer. (2021). COVID-19 Coronavirus Pandemic. https://www.worldometers.info/coronavirus/

Yiwei, W., Najaf, K., Frederico, G. F., & Atayah, O. F. (2021). Influence of COVID-19 pandemic on the tourism sector: Evidence from China and United States stocks. *Current Issues in Tourism*, 1–16. In Press. https://doi.org/10.1080/13683500.2021.1972944

Zhang, B., Geng, G., Ciais, P., Davis, S. J., Martin, R. V., Meng, J., ... Zhang, Q. (2020). Satellite-based estimates of decline and rebound in China’s CO2 emissions during COVID-19 pandemic. *Science Advances*, 6(49), 1–10. https://doi.org/10.1126/sciadv.abc4998

How to cite this article: Bilal, Nasir, A., Farooq, U., & Bashir, M. F. (2022). Stock returns, government response strategies, and daily new case bursts during COVID-19: A cross-country perspective. *International Journal of Finance & Economics*, 1–21. https://doi.org/10.1002/ijfe.2694