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DOES GOVERNMENT STRINGENCY POLICY REDUCE THE ADVERSE EFFECTS OF COVID-19 ON ISLAMIC STOCK?

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ABSTRACT

Over recent years, the stock market has developed into one of the sources of economic development. However, the COVID-19 pandemic has altered the game, resulting in a decline in stock performance. As countries implement initiatives aimed at reviving the economy, it raises the question of whether the government's intervention, as reflected in the composition of government stringency, influences long-term stock price. Given the question, this study aims to examine if government stringency, which may adversely impact economic activities, brings more confidence to the Islamic stock markets from July 2020 to June 2021 amid the COVID-19 pandemic. Panel autoregressive distributed lag (ARDL) estimation results show that government stringency does not help bring certainty and confidence to Islamic stock performance. As a result, we suggest that policymakers and the government should reconsider the imposition of stringent policies, especially on the restricted movement, as it is not only harmful to the economy at large but does not contribute to supporting stock performance.

Keywords: COVID-19, government stringency index, dynamic panel, Islamic stocks, Islamic finance

INTRODUCTION

The COVID-19 outbreak in January 2020 has negatively impacted national health systems worldwide (Pak et al., 2020). We are in the midst of one of the world's most devastating pandemics, which began in China. Workplace closures and limitations on residential movement were legislative remedies that helped curb disease transmission, but they also had a substantial economic impact.

Stock markets have been considered useful in predicting real economic activity (Bosworth, 1975). Empirical evidence about the influence of the stock market on economic growth justifies that increased stock market performance fosters investment leading to significant economic growth (Aali-Bujari et al., 2017; Abdulkarim et al., 2020; Coşkun et al., 2017). Most people use the performance of a country's stock market as the greatest indicator of economic success. Investors prefer nations with low unemployment, low social inequality and economic inequalities, low crime rates and generally stable political and security situations. Under these conditions, the stock market will perform better and consistently as the country's economic condition improves.

However, the pandemic's impact has left investors and markets with a high level of physical and financial uncertainty. Table 1 shows that the gross domestic product (GDP) in every region has plummeted due to the COVID-19 pandemic in 2020. For example, countries' growth rate dropped drastically from 2.34% to −3.59% in 2020, with a difference of 5.93%. Moreover, regions such as Middle East and North Africa (MENA), Europe, South Asia, and South Africa show considerable negative growth rates of −3.66%, −6.20%, −6.58%, and −6.96%, respectively.

Table 1
GDP growth rate

	2019 (%)	2020 (%)	Difference[a] (%)
World	2.34	−3.59	5.93
Middle East and North Africa	0.49	−3.66	4.15
Europe	1.56	−6.20	7.76
South Asia	4.03	−6.58	10.61
South Africa	0.15	−6.96	7.11
High Income	1.59	−4.70	6.29
Middle Income	3.66	−1.93	5.59
Low Income	4.11	0.92	3.19

Note: [a] Difference refers to the growth rate from 2019 to 2020.
Source: World Bank (2021)

Even though the COVID-19 outbreak has become a serious threat to society, governments in developed and developing markets have responded with various measures of stringency to save lives and relieve mounting demands on their health systems (Bakry et al., 2022). As a result of the extraordinary government intervention efforts, global indexes have recovered, even though economies remain sluggish and life in many regions has come to a standstill owing to slow vaccine deployment. The impact of COVID-19 restrictions and shifting customer preferences, as well as the amount of government intervention in the markets, has dramatically altered the fortunes of certain businesses. The market has hit unprecedented highs as we entered 2020, even though pandemic circumstances appear to be far from ending.

Government policy response may have positive and negative economic implications, as illustrated in Figure 1. For example, lockdowns restrict social interactions and, as a result, hinder any economic activity that depends on the Organisation for Economic Cooperation and Development [OECD] (OECD, 2020a). Although government regulations reduce economic activity, they have a beneficial effect by delaying the onset of a pandemic, lowering the overall attack rate and the number of cumulative deaths (OECD, 2020b). In fact, nations that engaged earlier and more forcefully, such as China, Hong Kong, and Canada, saw a better economic rebound in the long run.

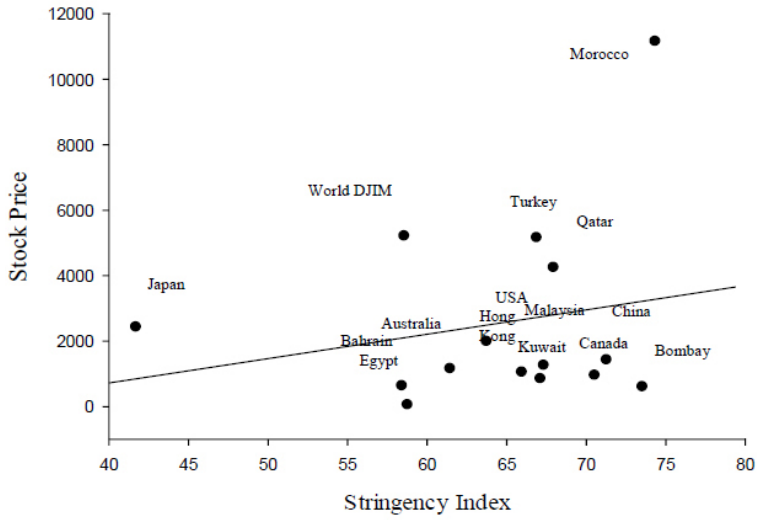

Figure 1. Government stringency policy impact on Islamic stock price

Note: The average daily closing price of 70 Islamic Stock Index around the world with 14 countries' indexes from July 2020 to June 2021. World DJIM refers to Dow Jones Islamic Market World Index

Sources: Bloomberg Economics (2021)

Even though many government stringencies began to loosen in the middle of 2020, the stock market's capacity to rebound depends significantly on the efficacy of government regulations in mitigating the impacts of COVID-19 and the extent to which public trust in the industry returns. Although the severity of the outbreak and government intervention are key variables for economic activity, global market conditions have a detrimental impact on every nation. However, this market reaction varies significantly across countries and (World Bank, 2020).

Not all regions are equally prepared to deal with the COVID-19 pandemic as different areas are affected differently by the outbreak. Many academics have argued over the role of government intervention in the stock market. The question that constantly arises is whether the government's involvement, as reflected in the composition of government stringency, has a desirable impact on long-term stock prices. Therefore, the influence of government stringency on stock returns has been the subject of several studies that explore the effects on developed or emerging countries (Aharon & Siev, 2021; Ashraf, 2020a; Kaçak & Yildiz, 2020; Pástor & Veronesi, 2010; Shah et al., 2020). Kizys et al. (2021) and Zaremba et al. (2020) demonstrate that the global stock market's volatility has increased significantly as a result of non-pharmaceutical governmental responses during pre-COVID-19 period.

Overall, a significant study has been conducted on the COVID-19 pandemic and the following government response, influencing worldwide stock market returns. However, such research on Islamic stock is scarce, notably in the global Islamic index after the second wave of COVID-19. To the best of our knowledge, this work is the first study that examines whether government stringency policy is moderating the adverse effects of COVID-19 on global Islamic stock returns. The objective of this research is to find evidence of short-term and long-term relationships between government stringency and stock prices.

LITERATURE REVIEW

Shariah Capital Asset Pricing Model Theory

Islamic finance operates within a shariah framework that covers investing in Halal (lawful) companies, prohibiting predefined fixed charges on investments and sharing a project's outcome. Investors in Islamic finance are urged to trade in shariah-compliant products to generate a return or profit in the usually accepted manner (Alam et al., 2017). As Islamic financial institutions (IFIs) begin to engage in the stock market, guidance in the areas of risk and return trade-offs, as well as

securities pricing under the shariah framework, is necessary. Current fundamental stock pricing models are highly relevant under the shariah framework, except for risk-free return, which does not exist in the Islamic financial system. Sharpe (1964) and Lintner (2006) propose capital asset pricing model (CAPM) theories, which are fundamentally based on the rationality assumption. The assumption primarily emphasises objective rationality, believing that investors will select investments that provide the greatest advantages. By removing risk-free return and adding an inflation charge, traditional CAPM becomes shariah-compliant CAPM (SCAPM). As a result, this theory is frequently utilised to examine investors' investing behaviour, especially in shariah-compliant stocks. In general, the Islamic financial institution incorporates not only banking institutions but also stock markets and other types of financial intermediation.

Over the last three decades, the tremendous expansion of the Islamic financial system justifies the necessity for a fully SCAPM (Hasanah & Maspupah, 2018). Over the years, several shariah-compliant Islamic financial products have been established to meet the diverse investment demands of Muslim investors. Asset pricing models designed for conventional financial instruments must be updated to suit Islamic financial products because Islamic financial products have a different regulatory framework and transaction structure from conventional financial products. Furthermore, the attractiveness of Islamic financial products is reliant on investors' capability to evaluate their risk and return effectively. To acknowledge the requirements for a capital asset pricing model that are not only based on shariah-compliant investment alternatives but are also competent in collecting the true nature of the risk and return dynamics of Islamic financial products, SCAPM versions devoid of shariah-allowed elements are being implemented (Hanif, 2011).

Several studies have evaluated the performance of Islamic financial instruments by using CAPM and other traditional performance monitoring methodologies. For example, Tomkins and Abdul Karim (1987) demonstrate that SCAPM without a risk-free asset element can be utilised as an alternative shariah-compliant model for estimating returns. Similarly, Derbali et al. (2017) establish a better SCAPM mathematical model that incorporates *zakat*[1] and excludes short sales. According to their examination of 10 stock samples, Islamic CAPM is adequate and applicable for studying the relationship between risk and return in the Islamic stock market. Moreover, Hassan et al. (2005) find comparable findings. They specifically employ CAPM theory to investigate the impact of the stock market on the basis of shariah teachings on the performance of Islamic stocks. According to their findings, the selection of Islamic stocks is not inversely associated with stock performance. This might be because Islamic finance has sought more stable investments in developed economies.

Several studies, however, found the opposite. For instance, Liston and Soydemir (2010), who examine the returns between sin and faith portfolios, find that sin portfolios outperform faith portfolios. The findings suggest that investors wanting exposure to the market in their portfolios may favour faith-based investments, but investors desiring market protection, particularly throughout periods of intense market volatility, may prefer to invest in traditional stock market instruments. This finding is supported by Hakim et al. (2016), who reveal no distinction in the expected return computed by using the CAPM and SCAPM models. Hence, the SCAPM model may be considered an option for making investment decisions in line with shariah principles.

All these studies overlook the fundamental distinctions between conventional and Islamic financial products, which stem from shariah's limitations. The negligible results of using CAPM theory motivate many scholars to improve the CAPM technique in the context of shariah capital markets. Recognising the unique characteristics of Islamic instruments and the well-known investment alternative to which they belong, this study proposes variants of SCAPM that use inputs that are shariah-compliant and free of prohibited riba.

Prospect Theory

Tversky and Kahneman (1988) developed prospect theory in 1979. It offers a realistic view of how people make decisions when faced with risks, uncertainty, and insecurity. Most people are susceptible to certainty and, hence, place their trust in outcomes that appear to be safe. Investors seek to avoid taking risks and losing money, but those who profit and make money are typically exposed to future dangers. This idea is subsequently utilised as one of the methods to define the state of mind that influences anyone's decision-making during a loss or gain, particularly while investing. According to Tversky and Kahneman (1988), losses have a bigger psychological impact on people than gains. Thus, people would choose the option that offers perceived rewards when offered two options. As a result, this idea has a great deal of influence in risky decision-making.

According to this theory, high prospect values indicate that an investor is interested in the stock market, causing the stock market value to increase. By contrast, if the prospect value is low, investors prefer to avoid the stock. This implies that the stock is unappealing to these investors (Barberis et al., 2016). Straightforward stocks with significant prospect value are attractive to investors who gravitate towards them in their portfolios. Researchers have supported this idea in the stock market. For example, Ohk et al. (2020) demonstrate that a high prospect value generates a lower subsequent return in the US stock market, and vice versa. However, Son

and Nguyen (2019) argue that the Korean stock price has a positive relationship between prospects and future return, indicating that high prospects correspond to a high return.

Furthermore, Henderson and Henderson (2012) find that investors are risk-averse after a profit but more cautious after a loss, following which they tend to hang on to stocks with lower prices. When the stock market's performance worsens, investors will not sell their shares in hopes that the price will rise again. As a result, this theory suggests that the stock market's past performance is significant in influencing investor decisions to buy or sell equities because investors are encouraged by the ideological belief that these stocks have a higher potential return, even if they have lower-than-average expected returns (Birru & Wang, 2016).

Understanding the consequences of the COVID-19 pandemic and other external adverse events on people's risk behaviour is essential. Risk preferences influence people's preventative and cautious activities to avoid future infection and shock recurrence. Therefore, an increase in the number of daily COVID-19 cases and deaths, as well as a shift in government policy, may impact investor perceptions of stock price performance over the COVID-19 period. By using prospect theory, Hameleers (2021) shows that increases in stock price owing to government intervention may be influenced by investor risk aversion, whereas losses should be influenced by investor preference for risk-seeking alternatives. Although government action is risk-averse when attempting to reduce the risk of COVID-19, all interventions were fraught with uncertainty.

Hence, the study of prospect theory remains scarce, particularly in the Islamic stock market. Individuals often assess a risky decision on the basis of possible outcomes and probabilities. Thus, applying this theory during the COVID-19 pandemic may assist in determining investor sentiment during a crisis.

Previous Effects of Pandemics and Epidemics on Stock Prices

Major events have a profound impact on stock prices. Previous research has identified several important events that have influenced market prices, including the 1997 financial crisis (Chapra, 2011) and the oil crisis (Chang et al., 2020). For example, Chang et al. (2020) show that the oil price crisis has hurt the Dow Jones Islamic Market Index when one of these markets is bullish and the other is bearish. As a result, investing in the Dow Jones Islamic Market Index while oil prices rise would be unwise for investors, because it reacts unfavourably to fluctuations in oil prices.

Aside from global economic crises, infectious disease outbreaks of severe acute respiratory syndromes (SARS), Ebola and avian influenza have a detrimental impact on global stock markets. Nippani and Washer (2004), Chen et al. (2007), Ali et al. (2010) and Bhuyan et al. (2010) identify the impact of SARS outbreaks on economic performance. For example, Chen et al. (2007) find that the Taiwanese hotel stock price has a substantial negative return during and after SARS outbreaks, showing that the disease influences hotel stock performance. The data also reveal that hotel stocks are susceptible to SARS, indicating that investor behaviour is heavily influenced by a country's economic effectiveness in combating and preventing outbreaks. Malaysian stock markets also overreacted to the dramatic worldwide events triggered by the SARS outbreak (Ali et al., 2010). By comparing the September 11 terrorist attack to the SARS outbreaks, the authors discover that the SARS infections had a bigger influence on the Malaysian stock market. Surprisingly, no evidence shows that the terrorist incident impacted Malaysia's stock market performance. Similarly, according to Bhuyan et al. (2010), SARS outbreaks affected Greater China and Southeast Asia, significantly negatively affecting the stock market.

Following the SARS outbreak, Ebola is also one of the diseases that affected the stock market's performance in 2013. The wide coverage of this epidemic in local media has significantly impacted local trading sentiments about the stock market's performance (Ichev & Marinč, 2018). The data reveal that Ebola outbreaks have had varying degrees of negative impact on stock prices, depending on the investor's proximity to the origin of epidemic. The findings are consistent with that of Del Giudice and Paltrinieri (2017), who reveal that media coverage on Ebola significantly impacted investor confidence in the stock price of affected nations. As a result, investors overreact to outbreaks by withdrawing all their savings from funds, even if the disease only affects a small portion of the continent, as in the case of Ebola.

The stock market responds to economic indicators and is frequently used as a proxy for economic performance. For example, in the New York and New Jersey regions, higher flu intensity is associated with a lower level of disagreement among financial analysts on target price forecasts (Dong & Heo, 2019). As a result, this outbreak of influenza has had a significant impact on this region, reducing trading activity and volatility due to the market's inability to sustain during the epidemic. Similarly, the novel avian influenza (H7N9) is a new acute infectious disease with a higher mortality rate in humans. Therefore, massive economic losses caused by H7N9 may be predicted to be spontaneously reflected in stock market impacts (Jiang et al., 2017). The authors found that this epidemic hurt stock prices, suggesting that

a larger number of daily infected patients resulted in a lower stock price on the Shanghai Composite Index.

However, several studies show significant differences in the effects of the SARS outbreak in different stock markets. According to Nippani and Washer (2004), there is no indication that the SARS outbreak has had a detrimental influence on stock indexes in Canada, Hong Kong, the Special Administrative Region of China, Indonesia, the Philippines, Singapore and Thailand. Unlike prior research by Bhuyan et al. (2010), Nippani and Washer (2004) demonstrate that China did not underperform during or after the SARS outbreak, showing that the disease had no substantial influence on the Chinese stock market. Furthermore, Siu and Wong (2004) reveal that the financial market's reaction to the SARS pandemic was minimal. Stock prices were volatile only in the short run due to reduced investor demand. As the economy grew and investor confidence in the country's capacity to manage the disease increased, stock prices rose significantly.

The Current Effects of COVID-19 on Stock Prices

The COVID-19 pandemic was even worse than the previous outbreaks because it created concerns and uncertainty due to its rapid contamination and high fatality rates around the world. Most empirical analyses found that stock market indexes reacted negatively to the spread of COVID-19 (Al-Awadhi et al., 2020; Ashraf, 2020b; Ashraf et al., 2022; Dharani et al., 2022; Rahman et al., 2021; Shear and Ashraf, 2022; Zaremba et al., 2020). For example, the rise in the number of COVID-19 cases hurt the stock market, showing that the stock market is more sensitive to increases in confirmed cases than to increases in mortality rates (Ashraf, 2020b). Significantly, Feng and Li (2021) find that the impact of COVID-19 is higher than that of the SARS outbreak, particularly in China; however, China's stringent isolation procedures restricted the virus's transmission and substantially reduced its ongoing influence on the stock market. Extending the findings of Feng and Li (2021), Al-Awadhi et al. (2020) demonstrate that both daily total confirmed cases and total fatalities cases of COVID-19 had substantial adverse effects on stock returns for the Hang Seng Index and the Shanghai Stock Exchange Composite Index. Similarly, Salman and Ali (2021) discover that COVID-19 has a negative but short-term influence on several GCC indexes. However, foreign timeline analysis reveals that the outbreak has a bidirectional spillover effect on the GCC and Chinese stock markets.

This pandemic is likely to impact developed countries that rely significantly on Chinese exports. This finding is supported by Aharon and Siev (2021), who show that the COVID-19 pandemic has a detrimental impact on foreign exposure through

import and export in the US, particularly in the short run. As the economy declines, so does investor confidence in future stock prices. Similarly, investors in smaller, less lucrative stock markets in Australia showed an adverse stock market reaction to the pandemic announcement (Rahman et al., 2021). By contrast, investors in large-capitalisation stocks in the UK react quickly to market shock announcements (Spyrou et al., 2007). Furthermore, studies from several emerging economies, such as Vietnam (Anh & Gan, 2020), Malaysia (Lee et al., 2020) and Indonesia (Amaroh, 2020) show that the daily increase in COVID-19 infections and deaths triggers investor uncertainty, which has a negative influence on stock prices. As a result, the COVID-19 pandemic has hurt stock prices worldwide.

However, interestingly, this finding is contrary to a study conducted by Bissoondoyal-Bheenick et al. (2020), who examine a substantial disparity between the number of confirmed COVID-19 cases and the fatality cases in the stock market in selected G20 countries. The authors argue that because of their experience with the SARS outbreaks, investors will be able to respond more rapidly to the COVID-19. Similarly, Albulescu (2020) demonstrates that the number of new fatalities caused by COVID-19 has a substantial positive influence on stock volatility in the US, with an increase in death corresponding to a rise in stock price. Furthermore, it indicates that Islamic stocks have a lesser decline and a faster rebound than their non-Islamic equivalents (Chowdhury et al., 2021).

The Effects of Government Stringency Policies on Stock Prices

Government intervention has been prompted by an increase in COVID-19 cases and deaths throughout the world. Interventions were the first steps in dealing with the COVID-19 crisis, and understanding their function and implications is critical. Surprisingly, although the government's response is important to encourage investor confidence in stock market performance, Bakry et al. (2022) find the opposite. They argue that any economic turbulence may add to the uncertainty, because governments often modify their policies in response to stock price drops. Therefore, stock returns declined due to the cancellation of public events, limitations on public gatherings and restrictions on international travel. Unexpected government actions such as workplace closures have disrupted decision-making processes in many financial institutions. Investors are less eager to spend their money on risky assets such as stocks when risk premiums grow, causing stock prices to decrease.

Market volatility is also influenced by unexpected government policy changes, which drive investors into a panic state over the stock market's performance. As a result, the rise of COVID-19 cases and government limitations have negatively

influenced the downfall of Islamic stock markets (Shanaev et al., 2020). According to researchers, government regulation in the form of national lockdowns, monetary or fiscal stimulus, or both, has proven ineffective in 51 stock markets, leading to economic losses and negative market returns. Instead, government-enforced lockdown affects investor sentiment and causes irrational panic, leading to a significant decrease in stock prices. Similarly, Dai et al. (2021) discover that policy uncertainty has an adverse correlation with the stock market, implying that the severity of policy responses increases the likelihood of crash risk. This negative relationship is becoming increasingly pronounced as the number of COVID-19 cases rise, causing the US stock market to be affected during the early stages of outbreaks.

Nevertheless, contrary to prior research, several studies indicate that government measures positively impact the stock market during the COVID-19 pandemic. Ozili and Arun (2020) demonstrate that increased government restrictions on internal mobility and tighter fiscal policy had a beneficial influence on economic activity, even though the daily cases of COVID-19 continue to rise. This finding is consistent with that of Anh and Gan (2020), who identify that the lockdown period had a favourable influence on stock performance, particularly in India (Alam et al., 2020) and Vietnam (Anh & Gan, 2020), where stock prices continue to rise. The results of the above analyses are consistent with the findings of Waheed et al. (2020), who show that the Pakistani government's prompt involvement protected investors from a complete stock market meltdown. As a result, increased government stringency leads to a rise in stock prices.

Moreover, government stimulus packages and the official reaction time were important in mitigating the detrimental impact of the COVID-19 pandemic. Topcu and Gulal (2020) argue that the pandemic has a lower impact in developing countries when governments have taken the necessary precautions promptly and have announced greater stimulus packages. Significantly, the negative effects of the COVID-19 pandemic on emerging stock markets have started to fade, with government support playing a key role in mitigating the pandemic's consequences (Topcu et al., 2020). In addition, Zaremba et al. (2020) demonstrate that employing the stringency index to prevent pandemics causes an increase in volatility of stock prices. Baker et al. (2020) make a similar connection between market volatility and investor reactions to government containment efforts. The stock market in the US reacted to COVID-19 so much more intensely because of the government's rapid response during the pandemic period.

Furthermore, investor behaviour is influenced mainly by the government's efforts to revive the economy while lowering the number of new COVID-19 cases. Aharon and Siev (2021) and Deng et al. (2021) indicate that governmental interventions such as a lockdown or stay-at-home order have been implemented to halt the transmission of COVID-19, and mitigating health risks have a significant and positive influence on stock market performance. Similarly, Bakry et al. (2022) show that government interventions are beneficial to the leisure and travel stock market, particularly when the industry is encountering difficulties due to COVID-19. This study indicates that government stringency increased stock returns and restrained stock market volatility for travel and leisure firms. Extending on the previous study, Chen et al. (2021) demonstrate that the government's stringency policy has a considerable positive influence on the stock returns of oil exploration and production companies. Hence, the stringent policy helped investors in the stock markets gain confidence in pandemic management and economic recovery and even mitigated the negative impact on stock prices. However, studies examined no causal relationship between government intervention in the stock market. For example, the US government has taken multiple measures to soothe the market on Black Monday in 2020. Although the economic and fiscal stimulus packages increased stock returns, market expectations did not rise as expected (Gormsen & Koijen, 2020).

Most previous studies were done on the basis of a country's particular characteristics. However, given that every stringency policy has been applied to every nation, the efficiency of this stringency is debatable for all nations. The flaw in this argument is that the stock market reaction to the pandemic is moderated by national-level uncertainty avoidance, which determines how sensitive a country's citizens are to uncertainty. As a result, this study will fill in the gaps in our understanding of how government policy impacts the COVID-19 pandemic and global stock market returns, particularly for Islamic stock indexes.

METHODOLOGY

To assess the effects of government stringency on stock prices worldwide, we conduct regression analysis. In setting up the stock price equation, we build an empirical model to look at the effects of the COVID-19 outbreak on Islamic stock price indexes according to global stock indexes. We focus on the following model:

$$SP = f\,(SV,\ COV)$$

where *SV* stands for stock volume. We use COVID-19 contamination cases and deaths as proxies for *COV*. The number of COVID-19 cases and deaths is used to study the effects of the COVID-19 pandemic on stock prices. In addition, as many studies argue, government stringency (*GOV*) plays an important role in affecting stock prices. Hence, expanding the above *SV* and *COV* into their respective equation, we obtain the following equation:

$$SP = f(SV, COV, GOV) \quad (1)$$

Feng et al. (2014) indicate that a convenient method of converting a highly skewed variable into a normalised dataset is to use logarithmic transformation, that is, the log transformation reduces or removes the skewness in our data. The model is therefore recreated as follows:

$$InSP_{i,t} = a_0 + a_1 InSV_{i,t} + a_2 InCOV_{i,t} + aInGOV_{i,t} + \varepsilon_{it} \quad (2)$$

In Equation 1, i = 1, . . ., n is the country index, t = 1, . . ., T is the time index and ε is a random disturbance term. Of course, the latter is not estimable with n = n × N data points. Under this model, In denotes the usage of natural logarithms for each variable. *SV* refers to global stock volume, and *COV* is the daily number of cases and deaths worldwide. In addition, *GOV* refers to government stringency policies worldwide.

Estimation Technique

This section reviews the general framework for analysing panel data. The panel autoregressive distributed lag (ARDL) technique was selected to investigate the long-term and short-term cointegration correlations between the determinants and to extract the error correction version (ECM) of the panel characteristics to identify the short-term dynamic. However, the panel ARDL method was preferred over cointegration because of the additional benefits it provides. Although the traditional cointegration approach assesses the long-term correlation within the system of equations in the context, the panel ARDL approach uses an individual briefed form of the equation (Pesaran et al., 2001; Pesaran, 2008). The panel ARDL approach could be used with the studied factors regardless of the integration order. Hence, the panel ARDL with various variables can include various lags, which are inapplicably using the standard cointegration test. Moreover, by using panel ARDL, both long-term and short-term coefficients can be provided at once. Thus, a generic specification for our panel data regression models is specified as follows:

$$\Delta InSP_t = \delta_0 + \sum_{i=1}^{p} \delta_{1i} \Delta InSP_{t-i} + \sum_{i=0}^{q} \delta_{2i} \Delta InSV_{t-i} + \sum_{i=0}^{r} \delta_{3i} \Delta InCOV_{t-i} + \sum_{i=0}^{s} \delta_{4i} \Delta InGOV_{t-i} + \delta_5 InSP_{t-1} + \delta_6 InSV_{t-1} + \delta_7 InCOV_{t-1} + \delta_8 InGOV_{t-1} + \mu_t \quad (3)$$

where δ is are parameters to be estimated, μ is the white noise residuals and Δ represents the first difference operator. To investigate the long-term cointegration among the variables, Wald-test-based bound testing procedure is conducted. The Wald test (or F-statistic) is a test of the hypothesis of no cointegration among the variables against the existence or presence of cointegration among the variables, denoted as H_0: $\delta_5 = \delta_6 = \delta_7 = \delta_8 = 0$ (i.e. no cointegration), against H_a: $\delta_5 \neq \delta_6 \neq \delta_7 \neq \delta_8 \neq 0$ (i.e. cointegration). When the calculated F-statistic is higher than the upper bound critical value, H_0 is rejected, indicating that the variables are cointegrated. Significantly, if the F-statistic is below the lower bound critical value, then the H_0 cannot be rejected, assuming no cointegration exists between the variables. When the computed F-statistics fall between the lower and upper bounds, the results are inconclusive. When the long-run relationship exists among the variable, an error correction representation exists. Thus, the ARDL version of the error correction model can be expressed as:

$$\Delta InSP_t = \delta_0 \sum_{i=1}^{p} \delta_{1i} \Delta InSP_{t-i} + \sum_{i=0}^{q} \delta_{2i} \Delta InSV_{t-i} + \sum_{i=0}^{r} \delta_{3i} \Delta InCOV_{t-i} + \sum_{i=0}^{s} \delta_{4i} \Delta InGOV_{t-i} + \vartheta ECT_{t-1} + \mu_t \quad (4)$$

where ϑ is the speed of adjustment parameter and *ECT* is the error correction term. The indicator points to the coefficient of the *ECT* and can validate the quickness of changes of the determinants for assemblage to equilibrium. Moreover, the coefficient gives input regarding the long-term correlation between the determinants. COVID-19 is represented by the number of COVID cases (*CASE*) and deaths (*DEAT*).

Data Collection

Our sample includes 14 countries' Islamic Indexes and one global index consisting of 56 countries for the period from 6 July 2020 to 18 June 2021. The period is chosen because most countries witnessed a total lockdown during the second quarter of 2020 or the first quarter after the outbreak of COVID-19. Hence, the expectation of the outcome of economic activities is obviously negative. The third quarter of 2020 onwards actually poses a challenge to the government in optimising its policy between combating COVID-19 and economic recovery. Table 2 presents a detailed description of the variables employed and data sources.

Table 2
List of variables, definitions, and sources

Variable	Definition	Sources
SP	The daily closing price of the stock	Bloomberg
SV	The daily closing volume of stock transaction	
COV:		
CASE	The daily new cases of COVID-19	World Meter
DEAT	The daily new deaths of COVID-19	
GOV	The Government Stringency Index	Our World in Data

RESULTS AND DISCUSSIONS

Table 3 presents the results of the descriptive analysis of the variables. During the period of study, *CASE* and *DEAT* remained high with little sign of slowing down. By contrast, some countries were recording their first case and death later, as reflected by a 0 minimum value in cases and deaths. In response to uncertainty in COVID-19 cases and deaths, government stringency policies continued almost at the same level, as shown by a low standard deviation of 0.20 and a small gap between the maximum value of *InGOV* (4.47) and its minimum value (3.16).

Table 3
Descriptive statistics

Variables	Mean	Max	Min	SD
InSP	7.27	9.44	3.79	1.20
InSV	18.48	24.17	11.50	2.82
InCOV:				
InCASE	6.73	13.62	0.00	2.61
InDEAT	2.91	8.91	0.00	2.20
InGOV	4.15	4.47	3.16	0.20

Table 4 demonstrates the results of correlation analysis. Generally, we find a very low correlation between *InSP* and the rest of the variables in the model, implying almost no issue of multicollinearity and potential endogeneity in our model. According to the findings, all variables indicate a positive correlation with the *InSP* with a relatively higher association with *InSV* and *InCASE* with a coefficient of 0.11. A higher correlation between these two variables may indicate that this variable has a potential impact on stock returns. Similarly, *InGOV* has a positive 0.08 correlation with stock prices, indicating the potential cushioning effect of

government policies on COVID-19 tension and uncertainty among investors. Furthermore, a 0.03 correlation between *InSP* and *InDEAT* may indicate that the number of COVID-19 death is no longer a significant threat to investors to participate in stock markets actively. The high correlation between COVID-19 cases and deaths is also not surprising, given that these two variables move hand-in-hand.

Table 4
Correlation analysis

	InSP	InSV	InCASE	InDEAT	InGOV
InSP	1.00				
InSV	0.11	1.00			
InCASE	0.11	–0.12	1.00		
InDEAT	0.03	–0.01	0.80	1.00	
InGOV	0.08	–0.18	0.13	0.09	1.00

Even though the bound testing approach is applicable for a set of variables that are mixed of I (0) and I (I), we test the order of integration of the variables by using Levin–Lin–Chu (LLC), and Im–Pesaran–Shin (IPS) unit root test to confirm the integration order of each series. The findings are shown in Table 5, where the unit root test result indicates that the *InSV* is significant at the level. The results of LLC and IPS tests reveal that *InSP*, *InCASE*, *InDEAT*, and *InGOV* are non-stationary at the level. After taking the initial difference, all variables are integrated in the order *I(I)*, as indicated in Table 5. This proves that our model has variables with different integration orders. Under different integration orders of *I(0)* and *I(1)*, the best approach to estimate the empirical model is ARDL model.

Table 5
Panel unit root test

	Levin-Lin-Chu				Im-Pesaran-Shin			
	Level		1st Diff		Level		1st Diff	
	I	T&I	I	T&I	I	T&I	I	T&I
InSP	0.14	0.80	–15.41*	–18.36*	1.76	–1.74	–24.99*	–24.67*
InSV	–8.34*	–10.59*	–17.66*	–19.33*	–15.01*	–15.47*	–47.76*	–49.64*
InCASE	–0.39	3.27	–6.79*	–6.91*	0.10	3.82	–35.88*	–37.34*
InDEAT	–0.19	0.99	3.75*	7.69*	–0.83	0.28	–41.93*	–44.01*
InGOV	–1.14	0.18	–15.31*	–17.80*	–1.10	–0.86	–25.33*	–25.31*

Note: *, **, and *** denote significance at 10%, 5%, and 1% critical values, respectively. I denote that the model is performed with an Intercept, while T&I denote that model is performed with the trend and intercept.

Before estimating the ARDL model, we must first identify evidence of the long-run relationship by using the cointegration test. Table 6 shows the results of the Pedroni Residual Cointegration test and the Kao Residual Cointegration test. The Pedroni cointegration approach is utilised in the break periods using variables for *SP*, *SV*, *CASE*, *DEAT*, and *GOV*. Table 6 also indicates that Panel PP-statistics are significant for both alternative hypotheses under different proxies of COVID-19. As a result, no cointegration null hypothesis can be rejected for all models. However, in the condition of an intercept, the ADF-statistic test for Panel in *CASE* and *DEAT* reveals no cointegration relationship, with values of 0.705 and 0.932, respectively, which are more than the 10% significance level. This result indicates that the difference between countries' response to the pandemic and their ability to recover by reducing volatility in stock price is not influenced by the number of COVID-19 cases and deaths. For example, Cheung et al. (2021) show that nations like China, Hong Kong, and Canada, which had experienced SARS outbreaks, may respond earlier than other countries during the COVID-19, indicating that the potential for stock price to increase has no substantial association with the COVID-19 pandemic and government stringency.

Table 6
Panel cointegration test

	Panel I: COV = CASE		Panel II: COV = DEAT	
	Statistic	Probability	Statistic	Probability
Pedroni residual cointegration test				
Panel Rho-Statistic	–1.261	0.104	–3.217	0.001***
Panel PP-Statistic	–1.316	0.094*	–2.929	0.002***
Panel ADF-Statistic	0.537	0.705	1.489	0.932
Kao residual cointegration test				
ADF-Statistic	1.705	0.044**	2.011	0.022**

Note: *, **, and *** denote significance at 10%, 5%, and 1% critical values, respectively.

Moreover, the Kao panel cointegration test results are consistent with the Pedroni panel cointegration test results for *CASE* and *DEAT* with 0.044 and 0.022 probability, respectively, which are significant at the 5% level. Therefore, the Kao test demonstrates the long-run relationship between all factors and stock price. According to these estimates, the effects of government stringency and COVID-19 cases and deaths significantly impact stock prices. Thus, the results support prospect theory for these countries. The cointegration results indicate a high potential for a long-term relationship. Further examination of the existence of a long-run relationship can be obtained from the ECM.

Table 7 summarises the findings of the short-run ARDL testing. Stock volume, COVID-19 and government stringency towards stock prices are critical in the long run but unlikely to be true in the short run. The long-run relationship is further confirmed with the significant lagged ECT in both models at 1%. Nonetheless, each variable has a nonsignificant impact on stock prices, except for InCOV when COVID-19 is proxied by deaths. Even if it is significant, the size of the impact can be considered negligible. According to prospect theory, investors do not react to new information instantly.[2] Only if the new information continues to occur in the same manner for a specific time will investors be able to respond. However, *DEAT* shows the opposite, as it has a negative short-run relationship with stock prices. Investors respond negatively to a rise in deaths because it indicates nations' inability to overcome the COVID-19 pandemic. Indeed, government stringency has a nonsignificant short-term association with stock prices. Government regulations do not change daily. As a result, it has little effect on stock price volatility in the short term.

Table 7
Short-run relationship [DV: ΔlnSP]

	Panel I: COV = CASE		Panel II: COV = DEAT	
	Coefficient	*p*-value	Coefficient	*p*-value
ECT_{t-1}	–0.0055	0.0016***	–0.0062	0.0024***
ΔInSV	–0.0005	0.6185	–0.0004	0.6379
ΔInCOV	–0.0003	0.6313	–0.0025	0.0991*
ΔInGOV	0.0077	0.3794	0.0086	0.2987
Constant	0.0209	0.0015***	0.0311	0.0026***

Note: * and *** denote significance at 10%, and 1% critical values, respectively.

Table 8 shows all the long-run elasticities of variables. Several factors are statistically significant in predicting the volatility of the SP participation for worldwide in the long run. The result shows that stock volume is positively related to stock prices for both variables, that is, a 1% rise in stock volume leads to an increase in stock prices by 0.22% and 0.21%, respectively. These findings provide sufficient evidence that stock volume plays a pivotal role in economic performance and in raising stock prices worldwide. This result is consistent with the findings of Bian et al. (2020) and Bissoondoyal-Bheenick and Brooks (2010) that higher volume increases the stock price performance for the panel of global countries. As the stock market improves and gains momentum, it gives a signal to investors that the trend will continually be high, which significantly raises the confidence of investors to purchase the share of the stock. Stock price goes up and down because

of buying and selling mechanism, which is demand and supply. Higher investor demand for shares (increase in volume) results in higher stock price. Hence, an increase in the stock volume will increase stock price.

Table 8
Long-run relationship [DV: lnSP]

	Panel I: COV = CASE		Panel II: COV = DEAT	
	Coefficient	Probability	Coefficient	Probability
InSV	0.2201	0.0001***	0.2123	0.0000***
InCOV	0.1140	0.0065***	0.1105	0.0035***
InGOV	–0.2387	0.2946	–0.3873	0.0953*

Note: * and *** denote significance at 10%, and 1% critical values, respectively.

Moreover, the estimation results show that COVID-19 daily cases have a statistically significant positive relationship with stock prices, as shown in Table 8. An increase in COVID-19 cases by 1% results in a 0.11% increase in stock price. This result contradicts the findings of past studies conducted during the crisis period of COVID-19, such as those of Al-Awadhi et al. (2020), Ashraf (2020b), and Hu et al. (2021). Rising COVID-19 cases may impact investor panic mode in the performance of those nations' stock prices. However, when significant advancements are made and vaccination programmes are expedited for every affected country, investors develop confidence in the country's capacity to battle the disease. For example, the US has seen large increases in its stock prices despite having a high proportion of COVID-19 cases. The government's attempt to revive the country's economy has become one of the indicators for investors to build trust in the country's stock index. As a result, an increase in COVID-19 cases may increase stock prices, demonstrating the country's economic development and attracting investors.

The number of stock prices fell dramatically during the early stages of COVID-19, showing that investors had lost faith in the stock market. Many of them may have liquidated their shares to prevent significant losses. However, with various improvements for all nations and the persistence of COVID-19, every nation has been able to adjust to this situation and continue to improve its economy while lowering COVID-19 outbreaks. In the current research, COVID-19 daily deaths demonstrate a significant positive long-run relationship between stock prices. A 1% increase in the COVID-19 deaths results in an increase in stock price by 0.11%. Numerous countries have demonstrated improvement in stock prices regardless of the rise in the number of COVID-19 deaths. For example, India is one of the nations that worst hit by COVID-19. A rise in the stock price corresponds to an increase in

the number of daily deaths, indicating that investors are interested in the country's economic opportunities, which promises a higher return on their investment. Furthermore, during the COVID-19 pandemic, governments worldwide have taken precautionary measures to reduce the number of cases and deaths. However, people who disregarded health protocols have resulted in a significant increase in the number of cases and deaths. As a result, nations like the US and Malaysia heavily rely on vaccination to reduce COVID-19 infections and deaths.

Surprisingly, under COVID-19 deaths, government stringency has a negative long-run relationship with stock prices. This result shows that a 1% increase in government stringency reduces stock prices by −0.39%. At the beginning of the outbreak, every country implemented strict measures such as border closures and reduced interstate movement to prevent disease transmission. This approach has been successful in decreasing COVID-19 and recovering the economy. However, if the pandemic persists, then the positive impact of controlling COVID-19 will be outweighed by the limited economic activities. Hence, this conclusion is consistent with the findings of Aharon and Siev (2021). In the case of a pandemic, our findings support prospect theory, with lower prospect implying that investors avoid the stock market to prevent losses.

Assessment of Various Geographical Regions

Table 9 shows the moderate effects of government stringency as adverse effects of COVID-19 on Islamic stock prices for different parts of the world, namely, Asian countries (Panel I), non-Asian countries (Panel II), developed countries (Panel III), developing countries (Panel IV), MENA (Panel V), Non-MENA (Panel VI), Muslim-majority countries (Panel VII) and Muslim-minority countries (Panel VIII). Our results clarify the role of government stringency in reducing COVID-19 impacts on stock prices for the overall operation of the global stock indexes.
Table 9

Under the breakdown of regional analysis, *GOV* only significantly affects stock price in MENA for both models. In both cases, the effect of government stringency policy positively supports the stock market; the growing confidence could explain that the COVID-19 pandemic will soon be resolved, and the economy will normalise. The high responses of more than 1, specifically 1.2365 when COVID-19 is represented by cases and 1.0179 when COVID-19 is proxied by death, may signal the high expectation that government policy should be as effective as possible in reducing economic uncertainty due to the COVID-19 pandemic. Alongside MENA, government stringency policies positively affect stock prices in other sub-groups, namely, non-Asian regions, emerging countries, and Muslim-majority countries,

when COVID-19 is considered. One possible explanation could be that investors in these sub-groups may believe that COVID-19 cases could be the true indicator of the severity of economic uncertainty due to COVID-19. The governments in these regions have enforced a high level of stringency to reduce the number of cases of COVID-19. When government efforts successfully reduced the infections in the country, this decrease resulted in considerable improvement and development in the economy's recovery, boosting investor confidence and raising stock prices (Zaremba et al., 2020). In contrast to MENA, non-MENA countries show that the role of government stringency policies reverses or negatively affects stock prices when the COVID-19 death. Some sectors may be susceptible to lockdown and restricted movement, which result from more stringent policies. A rise in government stringency may, in turn, affect corporate profitability and household spending. These difficulties have resulted in employee reductions, closures, and in some circumstances, demand shocks (Aharon & Siev, 2021). This scenario includes especially the case of Asian countries.

Table 9
Regional analyses of long-run relationship [DV: lnSP]

	Panel I: COV = CASE			Panel II: COV = DEAT		
	InSV	InCASES	InGOV	InSV	InDEATHS	InGOV
	Panel I: Asian Countries					
Coefficient	0.2866	0.1477	–0.3483	0.2708	0.1174	–0.6643
	(0.0018)***	(0.0350)***	(0.2944)	(0.0004)***	(0.0247)**	(0.0580)*
PP-Statistic	–2.7144 (0.0033)***			–1.4366 (0.0754)*		
	Panel II: Non-Asian Countries					
Coefficient	0.0314	0.0134	1.1209	0.3281	0.0452	0.0654
	(0.0286)**	(0.3101)	(0.0000)***	(0.0155)**	(0.1050)	(0.7035)
PP-Statistic	–1.4336 (0.0758)*			–2.9733 (0.0015)***		
	Panel III: Developed Countries					
Coefficient	–0.2395	–0.0187	0.1101	–0.1951	0.0229	0.0003
	(0.0119)**	(0.4281)	(0.4368)	(0.0117)**	(0.1918)	(0.9975)
PP-Statistic	–1.8177 (0.0213)**			–3.6265 (0.0001)***		
	Panel IV: Emerging Countries					
Coefficient	0.0369	0.0215	1.1366	0.0579	0.0854	0.0055
	(0.0268)**	(0.2048)	(0.0000)***	(0.0219)**	(0.0003)***	(0.9640)
PP-Statistic	–2.6549 (0.0040)***			–1.4544 (0.0729)*		
	Panel V: Middle East and North Africa (MENA)					
Coefficient	0.0334	0.0228	1.2365	0.0373	–0.0011	1.0179
	(0.0408)**	(0.1917)	(0.0000)***	(0.0194)**	(0.9259)	(0.0000)***
PP-Statistic	–2.1674 (0.0151)**			–0.8727 (0.1914)		

(*Continued on next page*)

Table 9 (*Continued*)

	Panel I: COV = CASE			Panel II: COV = DEAT		
	InSV	InCASES	InGOV	InSV	InDEATHS	InGOV
	Panel VI: Non-MENA					
Coefficient	0.5017	0.1055	–1.2706	0.3366	0.1508	–1.2944
	(0.0461)**	(0.2438)	(0.1524)	(0.0026)***	(0.0460)**	(0.0372)**
PP-Statistic	–1.6536 (0.0491)**			–0.4646 (0.0013)***		
	Panel VII: Muslim Majority Countries					
Coefficient	0.0345	0.0202	1.1756	0.0603	0.0827	0.0257
	(0.0300)**	(0.2115)	(0.0000)***	(0.0264)**	(0.0003)***	(0.8289)
PP-Statistic	–2.4122 (0.0079)***			–1.4943 (0.0675)*		
	Panel VIII: Muslim Minority Countries					
Coefficient	0.4700	0.1664	–1.0963	0.3593	0.1406	–1.0266
	(0.0497)**	(0.1935)	(0.2083)	(0.0108)**	(0.0973)*	(0.1410)
PP-Statistic	–1.710 (0.0436)**			–3.5029 (0.0002)***		

Note: PP-Statistic represents the Pedroni Cointegration test to determine the evidence of the long-term relationship between the variables. *p*-value is reported in ( ). *, **, and *** denote the significance level of 1%, 5%, and 10%, respectively.

Comparative Analyses Between High and Low COVID-19 Cases

Table 10 indicates additional results from examining the effects of government stringency on Islamic stock prices between those with high and low cases. Our findings show that in countries with high COVID-19 cases, government stringency policies do not significantly affect stock price. This finding could be understood as investors not having confidence that government policy could resolve the COVID-19 pandemic, and the economy will continue to be uncertain for a long time in the future.[3] For countries with lower COVID-19 cases, a 1% increase in government stringency will significantly increase stock prices by 0.45%, indicating, that investors treat high government stringency policies as a good move to turn the whole economy into a conducive economic environment. They responded by being actively involved in the stock market.

Comparative Analyses Between High and Low Government Stringency

Given the differences in government stringency responses in each country, stock markets may respond differently. Hence, Table 11 reports the effect of government stringency policies on the stock price when the level of stringency is high and low. Surprisingly, in both groups, the effect of GOV on stock price is nonsignificant. Investors could probably be more interested in the implication of government

stringency policies on COVID-19, which represents the prospect of future economic conditions, rather than the policies themselves. Generally, policies are inevitably designed to solve the top priority issue, which is to minimise COVID-19 pressure, while indeed will affect other economic activities seriously.

Table 10
Comparative analyses - high vs low COVID-19 cases [DV: lnSP, COV = CASE]

	Panel I: High COVID-19 Cases			Panel II: Low COVID-19 Cases		
	InSV	InCOV	InGOV	InSV	InCOV	InGOV
Coefficient	0.2288	0.1112	–0.2404	–0.0342	–0.0276	0.4534
	(0.001)***	(0.0094)***	(0.3103)	(0.5397)	(0.1015)	(0.0071)***
PP-Statistic	–3.7791 (0.0001)***			–2.2132 (0.0134)**		

Note: High COVID-19 cases comprise Islamic stock indexes from various countries such as Qatar, Morocco, Kuwait, Japan, Malaysia, Global DJIM, Canada, US, Bombay, Bahrain, Egypt, and Turkey from July 2020 until June 2021. Meanwhile, lower COVID-19 cases in Hong Kong, China, and Australia. PP-statistic represents the Pedroni Cointegration test. *p*-value is reported in ( ). ** and *** denote 5% and 1% significance levels, respectively.

Table 11
Comparative analyses – high vs low stringency [DV: lnSP, COV = CASE]

	InSV	InCOV	InGOV	InSV	InCOV	InGOV
	Panel Ia: High-Stringency, COV = CASE			Panel IIa: Low-Stringency, COV = CASE		
Coefficient	0.2356	0.1364	–0.2007	0.0079	–0.1410	–0.4889
	(0.0003)***	(0.0083)***	(0.4389)	(0.7891)	(0.0549)*	(0.3005)
ADF-Statistic	1.4006 (0.0807)*			–1.7814 (0.0374)**		
	Panel Ib: High-Stringency, COV = DEAT			Panel IIb: Low-Stringency, COV = DEAT		
Coefficient	0.1975	0.1250	–0.2492	0.0019	–0.1756	–0.6269
	(0.0000)***	(0.0013)***	(0.253)	(0.9419)	(0.1730)	(0.3882)
ADF-Statistic	1.9291 (0.0269)**			–1.873 (0.0306)**		

Note: High-government stringency comprises Islamic stock indexes from Qatar, Kuwait, China, Bombay, Morocco, Malaysia, Canada, US, Australia, Bahrain, Turkey, and Hong Kong, while lower-government stringency comprises Islamic stock from Global DJIM, Japan, and Egypt from the period of July 2020 to June 2021. ADF-statistic represents the Kao Residual Cointegration test. *p*-value is reported in ( ). *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

Finally, we run the analysis that apply the much earlier period, which is from January 2020. The results remain consistent, which could be due to the dominant. Nonetheless, we share sample results on Table 12 to conserve space. The rest are available upon request.

Table 12
Long-run relationship for Jan 2020 – Jun 2021[DV: lnSP]

	Panel I: COV = CASE		Panel II: COV = DEAT	
	Coefficient	Probability	Coefficient	Probability
InSV	0.0210	0.0022***	0.0154	0.0028***
InCOV	0.0301	0.0034***	0.0325	0.0011***
InGOV	–0.0114	0.1146	–0.2150	0.0456*

Note: * and *** denote significance at 10%, and 1% critical values, respectively.

CONCLUSION

Two years after the COVID-19 outbreak, economies have begun to improve and stock prices have risen steadily. However, COVID-19 has left severe impacts in every country's economy and financial markets. As a result, governments worldwide have stepped in to prevent widespread disease while simultaneously regaining economic stability. However, not all regions are equally equipped to deal with the pandemic because it affects different places differently. The government is still imposing stringent policies to curb the severity of COVID-19 as the cases have fluctuated over the past two years. Hence, this study is interested in investigating the impact of government stringency policies[4] on global Islamic stock returns for 14 countries' Islamic index and 1 global index consisting of 56 countries from July 2020 to June 2021.

The results of various analysis suggest mixed results. The general conclusion is that government stringency policies are ineffective in forming sentiments that can promote the stock market. The imposition of lockdowns, either internationally, inter-state or inter-district, affects production and consumption, although unlikely capable of supporting the stock market, would be another significant loss to any economy. Hence, the best approach would be choosing the most optimal level of government stringency policies or relying purely on two primary standard operating procedures of COVID-19 health protocols, namely, social distancing, and mask-wearing.

Future research should focus on several unsettled issues such as blanket vs. selected movement control order (MCO), differences in effect in different periods and the type of stocks that are prone to MCO.

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NOTES

1. A mandatory Islamic tax on Muslim income.
2. Moreover, people are gradually trying to "live with COVID-19" and therefore, only observe basic health protocols rather than completely isolating themselves (see Charumilind et al., 2021).
3. Investors may simply wait for the government via its stringent policies to minimise the COVID-19 cases and deaths. Once positive signs emerge, investors will begin to participate actively in stock market activities again.
4. The government should minimise the imposition of lockdowns.

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