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Research Article

DOES COVID-19 AFFECT SHARIAH COMPLIANT STOCK? EVIDENCE FROM SELECTED OIC COUNTRIES

Zakir Hossen Shaikh[1,*], Mohammad Irfan[2], Naji Mansour Nomran[1], Joji Abey[1]

[1] Department of Finance and Accounting, College of Business Administration, Kingdom University, Riffa, Bahrain
[2] School of Business and management, Christ University, Bengaluru, India
Corresponding author email: z.shaikh@ku.edu.bh

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Abstract
This study aims to examine the movements of Islamic stock markets in ten selected OIC (Organization of Islamic Cooperation) countries in relation to Covid-19 cases, providing a comprehensive analysis of market behavior during the pandemic. The countries-Saudi Arabia, Pakistan, Bangladesh, Turkey, Indonesia, Oman, Qatar, UAE, Kuwait, and Bahrain-were chosen based on their large Muslim populations. Data was collected over a one-year period from January 1, 2020, to January 31, 2021, analyzing the relationship between Covid-19 cases and Islamic stock market indices. The study employed co-integration tests to identify long-term relationships and the Vector Error Correction Model (VECM) to explore short-run dynamics. The co-integration test results show a significant long-run relationship between Covid-19 cases and Islamic stock markets in most of the selected OIC countries. Specifically, the Shariah indices in Pakistan, Bangladesh, Turkey, Qatar, UAE, Kuwait, and Bahrain have a positive and significant relationship with Covid-19 cases. Conversely, Saudi Arabia, Indonesia, and Oman exhibit a negative long-term relationship with Covid-19 cases, suggesting a different market response. These results suggest that countries with diversified economies, particularly those relying on natural resources such as oil and agriculture, were more resilient during the pandemic. This study provides novel insights into the unique responses of Islamic stock markets in OIC countries during the pandemic, highlighting regional differences in market behavior and recovery. It suggests that despite the global economic downturn, OIC countries present attractive investment opportunities, particularly due to their swift recovery and resource-based economies, offering a robust portfolio for investors during crises.

Keywords: Co-integration, Covid-19 cases, Islamic stock market, OIC countries, VECM

INTRODUCTION

The Organization of the Islamic Cooperation (OIC) countries is the secondlargest inter-governmental organization after the Unites Nations (UN) covering 57 states of membership across the four continents. It is, in essence the cluster of the Muslim world which aims to ensure and safeguard their economic, social, and political interests (SESRIC, 2021). In most of these countries, the Islamic financial system has developed significantly with the Islamic stock market being one of the major components in their financial systems (Irfan, 2021). Many investors, both individuals and institutions, primarily from Islamic countries, aim to invest only in equities that comply with Islamic regulations (Sharia). Investment in companies that adhere to Islamic principles is congruent with socially responsible and ethical investing, in which investors choose equities based on their religious convictions.

The world has been suffering from the novel coronavirus which affected 219 countries, and the OIC member countries are not spared from the pandemic. The Covid-19 virus, which was originated from Wuhan, China has affected the whole world and being classified by the UN as a global pandemic. In March 2021, it was confirmed that the Covid-19 cases have increased to 116,697,704 with death cases have reached 2,592,527 throughout the world (Worldometers, 2021).As the number of cases continue to grow and amid the concern onthe consistently high rate of spreading, the World Health Organization (WHO) has confirmed that vaccination doses needed to be given to people so that the normal livelihood can be resumed and the usual economic activities can be continued as soon as possible (WHO, 2021).

According to data from Reuter's Research Agency, Saudi Arabia presently has the largest Islamic financial market in the world, with assets that comply with Shariah totaling US$339 billion and Malaysia comes in second With US$145 billion. (Fahy, 2020). Pakistan has also increased its Islamic finance assets by $48.99million in 2019, and reaching$2,165million by the end of March 2020 (Islamic Banking Bulletin, 2020). Islamic finance flourishing throughout the world, with Bangladesh recorded 2.35 percent growth in the Islamic banking industry reaching BDT 2,913,039.01 million at the end of June 2020 (Research Department, Bangladesh Bank, 2020). In Turkey, Moody's Investors Service (2020) highlighted that the government is putting efforts to double itsIslamic finance assets in the next ten years by adopting an accommodative and conducive policy environment to ensure growth of the industry (Daily Sabah, 2020; Abidin, Mohammed, & Siahkoohian, 2024; Syahputra, Shittu, & Ain, 2024). Meanwhile, in Indonesia, the *State of the Global Islamic Economy Report 2020-2021*statesthat the countryis growing well in the field of Islamic finance with the government has allowed theconversion of conventional banks into Islamic banks. With all the efforts and commitments, Indonesia is expected to be ranked 4th in the list ofthe fastestgrowing Islamic finance countries after Malaysia, Saudi Arabia and the UAE (Yuniarti, 2021).

The Omani Islamic finance industry is also expected to expand furtherenabled by supportive government rules and regulations. With the expansion in Islamic finance, Oman economy has experienced economicimprovement. As at end-September 2020, the economy was growing at 6.75 percent, while the Islamic finance assets grew to US $12.96 billion. In moving forward, the agenda for 2021 is to foster collaborations with industrial experts, leaders from developing countries, and potential investors with the aim of expediting the development of Islamic finance in the country (IFN Oman Forum 2021, 2021).

Similarly, the development of Islamic finance hasalso been encouraging in Qatar. According to the research house Focus Economics (2020), the GDP of Qatar is expected to increase by 2.9 percent at end-2021 and it wouldfurther increase by 3.6 percent in 2022. Despite the negative effects of the Covid-19 on the world economy, Qatar is expected to make a quick economic recovery with growth in the third quarter of 2020. GPD is forecasted to increase to US$215 billion in 2025 from US$157 billion in 2020 (Focus Economics, 2020; Irfan et al., 2023). As for the UAE, the country has a strong position among the countries developing Islamic economy and finance, leading in the third position in the world during the period 2020-2021. The countryhas also recorded a fast recovery from the Covid-19 as it has given focus on extensive growth in the fintech infrastructure to become the leader in Islamic finance globally (Global Islamic Economy Report, 2020 Kusuma, 2020; Suwarni, 2024).

On a contrary, the Kuwaiti Islamic assets have been struggling with the issues of low profitability and assets quality until the fourth quarter of 2020 (Fitch Ratings, 2020). In Bahrain, Islamic finance is gradually reshaping the economy from the Covid-19, with the concentration on the Islamic

finance institutions to focus on the regional market, commerce, trade and individuals. In addition, permission has been granted to financial institutions to offer Shariah-compliant crypto-currency, with adjusted asset quality risk to ensure investor portfolio risk are considered accordingly (International Finance, 2020).

The main objective of this study is to analyze Does Covid-19 affect Shariah compliant stock and the relationship between the Coronavirus cases and Islamic stock markets of selected OIC countries of world and it's the impact of Corona pandemic and Shariah indices.

LITERATURE REVIEW

There is a rich body of literature on the impact of economic and financial crises on the Islamic stock markets, however the focus is not being limited to just the OIC countries. Jena et al., (2023), focused on financial engineering in emerging financial markets and concluded that the patterns and characteristics of financial engineering research in the financial market can assist detect upcoming trends and difficulties.

The research by Jena et al., (2023) investigated and discovered that modern portfolio theory recognizes the importance of financial engineering (FE) revolutionary products, such as FinTech and Insurtech, as recent advances in risk management techniques, which have succeeded through stock market, financial instrument, and service developments. Hassan, Bin-Nashwan, & Muneeza, (2022) examined four major economic issues that OIC countries are currently facing: difficulties in adjusting to the new normal and restarting economic activity; difficulties in developing effective plans for economic recovery; rise in poverty, unemployment, and inequality in societies; and disruption of global economic chains. Five recommendations are offered to address these highlighted economic issues, through which the OIC should take the lead in ensuring that OIC countries may use one another to quickly recover their separate economies.

Irfan, Sarea, & Hossian, (2022) the GCC Shariah indexes that are impacted by the terrible news of the coronavirus have been examined? evaluate the effects of (Cov-NC) and (Cov-DC) on the changes in Shariah indicators. Bad news has a greater influence on conditional variance than good news, according to the negative leverage effect. The coronavirus (Covid-New cases, Covid fatality cases) news that has been circulating in the market has had an influence on GCC Shariah Indices. Based on AIC, SIC, and HQC criteria, diagnostic analysis is performed. In comparison to Qatar, Saudi Arabia, and the UAE, which have higher Shariah indices, Bahrain, Kuwait, and Oman have lower values. The T-GARCH model is finally more appropriate for Islamic indices in Bahrain, Oman, and Kuwait.

Umar & Abubakar (2021), Even while eradicating poverty has always been a top priority for OIC member nations, the epidemic has unfortunately driven these nations even further into poverty. Islamic social finance tools, in especially zakat, waqf, and Islamic microfinance, are thought to be legitimate tools that could lessen the effects of the pandemic. To combat this, the current study intends to increase zakat revenues in OIC member nations by developing zakat accounting standards. Only two zakat accounting standards for calculating company zakat are currently in use, according to the report. The aforementioned conclusions therefore suggest that in order to increase zakat revenues, each OIC member state should develop the zakat accounting standard that its businesses can use.

Nurrachmi (2018) examined the relationship between the Islamic stock markets in six selected OIC countries during the crisis of 2007 and in the post-crisis period. Using the Autoregressive Distribution Lagged (ARDL) method to measure the linkage between the stock markets in these countries, the study found that all the six countries have cointegration after the crisis 2007, but found otherwise during the crisis period. It is also found that the long run relationship exists to generate more and more profit to the all selected six countries (Nurrachmi, 2018).

Yahya et al., (2009) analyzed the export market share of the OIC countries on based onthree basis categories, namely(i) import market of world;(ii) export market of OIC; and (iii) import market of non-OIC countries. The export market of share of the OIC increases during the 1996-2005, but 1998 was an exceptional year due to the Asian financial crisis which badly affecting many of the OIC countries. Malaysia and Saudi Arabia have more export market share in comparison to other OIC countries (Yahya, Muhammad, & Habidin, 2009).

The study by Arshad (2017) has found that the efficienct market hypothesis is working in the context of the OIC coutries. These emerging markets have more rapid economic growth, liberalised their capital markets, to attract the foreign investors. With this finding, economic synergies can be worked out in terms of risk sharing capabilty and information transparency. Between these countries

(Arshad, 2017). Further investigations by Jawadi et al., (2015) examined the efficient market hypothesis on three categories of the Islamic stock markets, namely world, emerging, and developed. Covering the period from 2002 to 2012, the results of the study suggested that the emerging Islamic marketsareless volataile in comparison to the developed Islamic markets. The global conventional stock markets are found to exhibit long run relationship with the developed Islamic markets. The outcomes of the risk analysis suggested that moderate risk investors are doing well in the Islamic funds of the developed countries (Jawadi, Jawadi, & Cheffou, 2015; Yohanie et al., 2023; Fitriana & Waswa, 2024; Zakiyah, Boonma, & Collado, 2024).

Utilizing the method of the gravity model, the study by Hassan and Hussain (2009) which focused on the trade creation among the D8 countries found that these countries are the best performing in the trade creation. The D8 countries are trading more than 22 times in comparison to the other members of the OIC. Therefore, the study suggested that more trade policies should be formulated to support the development of the OIC countries (Hassan & Hussain, 2009).

Obaidullah (2001) study allowed the Shariah rules and regulation, which are followed by Islamic Capital market concern with ethics and efficiency. Policy makers have interpreted that Islamization will reduce the efficiency of the market. The results found that there is no trade-off on the Islamic ethic and market efficiency but follow the same process straight forward. In general, Islamic finance leads the enhancement of efficiency. All the Islamic productsare compliant to the Shariah laws such as prohibiting involvements in Riba, Gharar, Ijma, and Ihtikar. The observance to the Shariah parameters leads to a fair and wholesome financial system that leads to enhancement of efficiency of the nations (Obaidullah, 2001).

The study of Chellaswamy intends to investigate the difference between the Islamic stock market and conventional stock market these returns are similarly reflected to each other. Joint returns are also reflected symmetrically during the crisis. Moderate dependency has been observed when the market was bullish and bearish. Investigation of stock market has been done by the regression method based on the event study. The study covered the 1998-2018 data to measure the volatility and settlement t+1 and t+2 days, unfair trade practices and rest of the features, which are traded in the Nifty. This study reaveals that all the features are positively significant to the returns of stock market. In addition, all the nine stock market reforms are insignificant to the returns of the stock market (Chellaswamy & Faniband, 2021).

Rajeb examined the subprime crisis of the global Islamic and Convential stock indices of seletced 10 countries, observed the instability periods. Weak effiecency hypothesis found in the Islamic to convetional indices. Results suggested that Islamic stock market is not fully affected from financial crisis. Granger test suggets that Islamic stock market esacpe from the harful effects from the subprime crisis (Rejeb & Arfaoui, 2017).

Majid et al., study focused on the linkage between the eight selected OIC countires, four from the Middle East and North Africa and rest of the four from the Asian region compare with the largest stock market i.e., US, Japan and UK. The outcome suggested that asian countries do not have cointegration equation with MENA, rest of coutries have interlinkage with eachother. UK, Japan, and US have strong long run relationship between the OIC countries (Majid, Mohd, & Razal, 2007). According to the report, the connection between finance and growth is at a turning point. The same study's findings indicate that in OECD countries, excess finance is unwanted (a coronavirus), and that crossing a certain threshold causes economic growth to slow down. (Manuswamy & Swamy, 2020).

Our study of the existing literature reveals that the impact of the COVID-19 epidemic on financial markets: conventional vs. Islamic indices, as well as the impact on GCC and OIC countries, has been analyzed in a variety of ways. Only a few studies have contrasted the association between Covid-19 instances and Islamic stock indexes in OIC nations. Our study, however, aims to fill these gaps in the literature by addressing the above issues.

RESEARCH METHOD

The descriptive research design has been used for the objectives. The study employed purposive sampling techniques to collect data from select OIC countries' indices. Current study shows that short-term relationship between selected ten OIC countries i.e., Saudi Arabia, Pakistan, Bangladesh, Turkey, Indonesia, Oman, Qatar, UAE, Kuwait and Bahrain. Secondary data has been used for the study, Daily closing price data were collected from the website of (https://www.investing.com/indices/major-indices) and daily data of Covid-19 cases from website of the University of Oxford researchers and Global

Change Data Lab (Our World in Data, 2021) of all selected OIC countries from1st Jan. 2020 to 31st Jan. 2021. Ten OIC member countries are selected as sample in this study based on the highest proportion of the Muslim population of the country.

Descriptive statistics is initially used to evaluate different parameter for selected shariah compliant indices of OIC Countries. As the data taken for the study is on daily basis based on shariah compliant indices, stationary of the data is a paramount to conduct the intended analysis. Therefore, for stationary check, Augmented Dickey Fuller Test (ADF test) is used. To assess the impact of Covid-19 on movement of Shariah compliants indices of selected OIC countries, regression analysis is conducted for individual countries respectively. Further, to assess the long-run equilibrium relationship exist between Covid-19 cases and Shariah indices of selected OIC countries, co-integration test is applied. In addition, The Error Correction model is applied to measure the speed of adjustment between the variables of the model for any disturbances by following Vector Error Correction Model (VECM).

Table 1. Sample of OIC Countries

No.	OIC Countries	Shariah Indices	Total Population	Muslim Population	Muslim percentage (%) of total population	Percentage (%) of world Muslim population
1	Saudi Arabia	S&P S.A.Shariah	34220000	33535000	98.2	1.8
2	Pakistan	KMI 30	210000000	202650000	96.5	11.1
3	Bangladesh	DSEX Shariah Index	170000000	153700000	90.4	9.2
4	Turkey	Katilim 50 Index	83155000	74423725	89.5	4.6
5	Indonesia	Jakarta Islamic Index	263000000	229000000	87.2	12.7
6	Oman	S&P Oman Shariah	4633752	2427000	86	0.2
7	Qatar	S&P Qatar Shariah	2450285	1566786	77.5	0.1
8	UAE	S&P UAE Shariah	9541615	7251627	76	0.2
9	Kuwait	S&P Kuwait Shariah	2916467	2175684	74.6	0.2
10	Bahrain	S&P Bahrain Shariah	1442659	1063239	73.7	< 0.1

(Pew Research Center, 2021)

ADF test is popular for checking the stationarity in the data (Enders, 1995). ADF test is significant, where p-value is less than 5% and t-statistics is more than the critical value (Irfan, Kassim, & Dhimmar, 2021).

$$"\Delta y_t = \alpha + \gamma y_{t-1} + \sum_{i=1}^{P} \Delta y_{t-i} + \varepsilon_t" \quad \text{-------1}$$

Where, y_t data series is tested and γ_{t-i} is the first difference in the data series. Here, Ho: is represent the null hypothesis of the data,$\gamma = 0$, and H1: is presented by alternative hypothesis i.e.,$\gamma < 0$, to check the unit root test, meaning that data series is non-stationary when the ADF test vale is less that critical value (Irfan, 2016).

The linear regression equation has been used in this study: there are linear relationship between Covid-19 cases and the stock markets of the selected ten OIC countries In the series researcher will used regression analysis where, equation followed the ‘y’ is dependent variable (Covid-19 cases), ‘x’ is independent variable (selected ten countries of OIC) and error.

$$Y_1 = \alpha + \beta1 * \text{S.A. Shariah Indices} + \varepsilon \text{ --------1}$$
$$Y_2 = \alpha + \beta1 * \text{KMI 30} + \varepsilon \text{ --------2}$$
$$Y_3 = \alpha + \beta1 * \text{ DSEX Shariah Index} + \varepsilon \text{ --------3}$$
$$Y_4 = \alpha + \beta1 * \text{ Katilim 50 Index} + \varepsilon \text{ --------4}$$
$$Y_5 = \alpha + \beta1 * \text{ Jakarta Islamic Index} + \varepsilon \text{ --------5}$$
$$Y_6 = \alpha + \beta1 * \text{ S\&P Oman Shariah} + \varepsilon \text{ --------6}$$
$$Y_7 = \alpha + \beta1 * \text{ S\&P Qatar Shariah} + \varepsilon \text{ --------7}$$
$$Y_8 = \alpha + \beta1 * \text{ S\&P UAE Shariah} + \varepsilon \text{ --------8}$$
$$Y_9 = \alpha + \beta1 * \text{ S\&P Kuwait Shariah} + \varepsilon \text{ --------9}$$
$$Y_{10} = \alpha + \beta1 * \text{ S\&P Bahrain Shariah} + \varepsilon \text{ --------10}$$

The accomplishment of the objective following null hypothesis (H_0) has been used. $H_{01\text{-}10}$: Islamic stock market has not positive effect on the coivd19 cases among the ten selected countries of OIC i.e., Saudi Arabia, Pakistan, Bangladesh, Turkey, Indonesia, Oman, Qatar, UAE, Kuwait, and Bahrain. In this way ten null hypotheses have been developed accordingly. Further, researcher focused on the data must be stationary and run the Johnson co-integration, after that find the error correction model, i.e., VECM model for knowing.

RESULTS AND DISCUSSION

The descriptive analysis of the performances of the Islamic stock markets in the OIC countries during the Covid-19 pandemic period is shown in Table 2 below.

Table 2. Descriptive Statistics of Shariah Indices in OIC

Parameters	SA	KMI30	DSE	Katilimi	JII	Oman	Qatar	UAE	Kuwait	Bahrain
Mean	165.4	62.2	104.9	173.2	57.4	51.1	174.4	126.3	64.6	18.1
Standard Error	0.88	0.45	0.70	2.49	0.38	0.14	0.74	0.79	0.44	0.17
Median	165.2	64.1	103.5	167.7	55.7	51.3	173.5	126.2	63.0	16.9
Std. Dev.	14.43	7.34	11.49	40.89	6.31	2.36	12.11	12.90	7.21	2.76
Variance	208.2	53.9	132.1	1672.0	39.8	5.6	146.7	166.3	51.9	7.6
Kurtosis	-0.80	-0.28	-0.71	-0.41	-0.36	0.06	-1.00	-0.42	-0.89	-0.27
Skewness	-0.30	-0.60	0.47	0.61	0.11	-0.21	-0.32	0.18	0.25	1.15
Count	269	269	269	269	269	269	269	269	269	269

Table 2, As shown in the table, the results of OIC Islamic stock markets'standard deviation are more than 3 in SA, KMI30, DSE, Katilimi, JII, Qatar, UAE, Kuwait are highly risky stock market except the Oman and Bahrain. Skewness of DSE, Katilimi, JII, UAE, Kuwait, and Bahrain are shown to be positive, indicating that all the Islamic stock markets have high value more in comparison to the low values in time series, and SA, KMI30, Oman, and Qatar are less volatile. Summary of descriptive statistics derives those eight out of ten Islamic stock markets are more volatile; two stock markets are less volatile.

Table 3. ADF Statistics of Shariah Indices in OIC Countries

Shariah Indices of OIC Countries	t-Stats	Prob.*	1% level	5% level	10% level
Null Hypothesis: D(SA) has a unit root	-15.87	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(KMI_30) has a unit root	-15.04	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(DSE_S) has a unit root	-13.96	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(KATILIMI) has a unit root	-14.30	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(JII) has a unit root	-7.81	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(OMAN) has a unit root	-15.53	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(QATAR) has a unit root	-8.14	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(UAE) has a unit root	-8.08	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(KUWAIT) has a unit root	-13.29	0.00	-3.45	-2.87	-2.57
Null Hypothesis: D(BAHRAIN) has a unit root	-5.22	0.00	-3.46	-2.87	-2.57

Table 3 shows the results of Augmented Dickey-Fuller (ADF) test for selected OIC Islamic stock markets. Null hypothesis of the ADF test is rejected and alternative hypothesis has been accepted along with less than 5% of p-value, coefficient should be negative, meaning that data of OIC countries are stationary.

Table 4. Regression on Islamic Stock Market of OIC and Covid-19

Covid19 Cases	Shariah Indices	COEF	Std. E.	t-Stats	Prob.
Cov19-Cases of SA	C	-10332.50	814.92	-12.68	0.00
	Saudi Arabia	71.15	4.91	14.50	0.00
Cov19-Cases of Pakistan	C	-4467.16	591.03	-7.56	0.00
	KMI 30	101.20	9.44	10.71	0.00
Cov19-Cases of Bangladesh	C	-13232.36	678.04	-19.52	0.00
	DSE S	147.07	6.43	22.89	0.00
Cov19-Cases of Turkey	C	-2954.25	182.59	-16.18	0.00
	Katlimi	30.57	1.03	29.80	0.00
Cov19-Cases of Indonesia	C	-6450.52	1093.99	-5.90	0.00
	JII	141.99	18.95	7.49	0.00
Cov19-Cases of Oman	C	1224.91	589.98	2.08	0.04
	Oman	-13.93	11.52	-1.21	0.23
Cov19-Cases of Qatar	C	-97.58	449.47	-0.22	0.83
	Qatar	5.10	2.57	1.98	0.05
Cov19-Cases of UAE	C	703.14	214.04	3.29	0.00
	UAE	-2.34	1.69	-1.39	0.17
Cov19-Cases of Kuwait	C	619.35	251.30	2.46	0.01
	Kuwait	-1.11	3.86	-0.29	0.77
Cov19-Cases of Bahrain	C	1217.38	107.83	11.29	0.00
	Bahrain	-48.46	5.88	-8.24	0.00

Tables 4, The linear equation between the Indonesia (JII) is an independent variable and Covid-19 treated as dependent variable have significant positive relationship in between. Oman Shariah index and coronavirus cases have estimated negative and insignificant linear equation. Covid-19 cases of Qatar and Shariah index of Qatar has a statistically positive and significant relationship. UAE/Kuwait Shariah index and coronavirus cases have negatively insignificant linear relationship. However, in the case of Bahrain Shariah index and Coronavirus cases have negatively significant relationship. Finally, it wasconcluded that there are positive significant relationships between Covid-19 cases with Shariah indices of Saudi Arabia, Pakistan, Bangladesh, Turkey, Indonesia, Qatar. In addition to Oman, Kuwait and UAE have negatively insignificant relationship, only Bahrain has negatively significant relationship between the Bahrain Shariah index and Bahrain Covid-19 cases.

Table 5. Co-integration of Islamic Stock Market of OIC Countries and Covid-19 Cases

Variables	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value 0.05	Prob.**
Cov19-Cases of	None *	0.122	47.321	15.495	0.000
Indonesia	At most 1 *	0.049	13.214	3.841	0.000
Cov19-Cases of	None *	0.250	88.323	15.495	0.000
SA	At most 1 *	0.045	12.232	3.841	0.001
Cov19-Cases of	None *	0.327	105.297	15.495	0.000
Pakistan	At most 1	0.000	0.029	3.841	0.064
Cov19-Cases of	None *	0.351	120.529	15.495	0.000
Bangladesh	At most 1 *	0.021	5.704	3.841	0.017
Cov19-Cases of	None *	0.215	68.541	15.495	0.000
Turkey	At most 1 *	0.016	4.175	3.841	0.041
Cov19-Cases of	None *	1.000	18222.010	15.495	1.000
Oman	At most 1 *	1.000	9034.480	3.841	0.000
Cov19-Cases of	None *	0.401	139.317	15.495	0.000
Qatar	At most 1	0.011	2.980	3.841	0.084
Cov19-Cases of	None *	0.482	180.431	15.495	0.000
UAE	At most 1 *	0.021	5.667	3.841	0.017
Cov19-Cases of	None *	0.328	110.160	15.495	0.000
Kuwait	At most 1 *	0.016	4.242	3.841	0.039
Cov19-Cases of	None *	0.365	121.817	15.495	0.000
Bahrain	At most 1	0.004	1.161	3.841	0.281

Table 5 shows the results of the Trace statistics and Max eigen value tests which indicate that at least 1 co-integration equation at the level of 5% exist between the coronavirus cases and Shariah indices of selected OIC countries. Hence, it can be concluded that there is long-run equilibrium relationship exist between Covid-19 cases and Shariah indices of selected OIC countries.

Normalized Co-integration Equation

Coefficients' sign should be reversed in the normalized co-integration equation of Johnson model. Which is represent the long-run relationship, Covid19-cases are the target variable.

Saudi Arabia = Covid19-Cases + 49435.98 SA Shariah ……..11
Pakistan = Covid19-Cases - 7155.876 KMI-30 ……..12
Bangladesh = Covid19-Cases - 23540.21 DSE Shariah …...……..13
Turkey = Covid19-Cases -7824.181 Katlimi Index …… 14
Indonesia = Covid19-Cases + 49435.98 Jakarta Islamic Index ……15
Oman = Covid19-Cases + 0.56 Oman Shariah Index ……16
Qatar = Covid19-Cases - 3110.302 Qatar Shariah Index …….17
UAE = Covid19-Cases - 6258.619 UAE Shariah Index ……..18
Kuwait = Covid19-Cases -11132.39 Kuwait Shariah Index ……19
Bahrain = Covid19-Cases - 414640.6 Bahrain Shariah Index …… 20

In the co-integration equations Saudi Arabia, Indonesia, and Oman, have negative coefficient and significant long-run relationship between Covid19- Cases and Shariah indices of OIC Countries. Pakistan, Bangladesh, Turkey, Qatar, UAE, Kuwait and Bahrain have positive and significant relationship between Coronavirus cases and Shariah Indices of selected OIC countries.

Error Correction Model

The Error Correction model gives the speed of adjustment in between the variables of the model will restore its equilibrium following any disturbances. The coefficient of error correction term with Coronavirus cases and Shariah indices of OIC countries as dependent variable are negative and significant the conversion of from short dynamics towards long-run equilibrium relationship.

Table 6. Vector Error Correction Model of Islamic Stock Market and Covid19 Cases

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Cov19-Cases of SA	0.982	0.014	72.650	0.000
Cov19-Cases of Pakistan	0.766	0.040	19.331	0.000
Cov19-Cases of Bangladesh	1.016	0.007	153.678	0.000
Cov19-Cases of Turkey	0.982	0.022	44.437	0.000
Cov19-Cases of Indonesia	0.065	0.062	1.056	0.000
Cov19-Cases of Oman	0.638	0.048	13.423	0.000
Cov19-Cases of Qatar	0.970	0.015	64.927	0.000
Cov19-Cases of UAE	0.976	0.016	59.284	0.000
Cov19-Cases of Kuwait	0.891	0.027	32.802	0.000
Cov19-Cases of Bahrain	0.906	0.026	34.629	0.000

As shown in Table 6, the adjustments of coefficients were positive coefficients and statistically significant at the level of 5%. Which reflected that long-run equilibrium in the case of disequilibrium situations. In the all, the Variables of Covid19-cases and Shariah indices of OIC countries have long-run relationship within the disequilibrium situations. The positive coefficients of coronavirus cases and Islamic stock market movement indicates away from the equilibrium.

CONCLUSION

This study examines the existence between Coronavirus cases and Islamic stock market of selected OIC countries namely viz., Saudi Arabia, Pakistan, Bangladesh, Turkey, Indonesia, Oman, Qatar, UAE, Kuwait, and Bahrain. This study finds the impact of Corona pandemic and Shariah indices. The results showed that there is a co-integration relationship between Shariah indices and Covid19-cases of OIC countries, while there arepositive coefficient and significant statistical relationship between the Coronavirus cases and Islamic stock markets of selected OIC countries of world.

This study highlightsthat the Islamic stock markets are affected in a different degree and manner by the Covid-9, with intensity of the impact is lesser on the OIC countries. A plausible reason for this is that most of the OIC countries' income generation are based on natural resources like oil, gas and agriculture. While there is no doubt that the coronavirus cases have negative impact on most of the countries of the world, however, few countries were able to come-out rather quickly from the web of the coronavirus. The economic variables of OIC countries are indicated that coronavirus has less impacted in comparison to the USA, UK countries, and OIC countries have objective to the development of the of all countries become economically sound. Policy maker has also witnessed that OIC countries have fastest recovery from the coronavirus, implying that the OIC countries have good place for the investment with the good avenue of portfolio.

The OIC General Secretariat and other pertinent OIC institutions are working to support OIC Member States in their battle against COVID-19, as Ambassador Mussinov informed the attendees. He applauded the universities for assisting their local communities in the fight against the epidemic by creating diagnostic and preventive measures, and he urged the universities to continue their efforts in research and innovation. Our research offers useful information to Islamic portfolio managers and stock market investors for making investment decisions and putting hedging strategies into place in times of crisis like the COVID-19 epidemic. Investors are urged to be aware that the conservative features of Islamic stocks offer better investing or hedging opportunities along with some decisive implications for policymakers and governments dealing with financial markets during times of crisis.

Covid19 undoubtedly affects economies and all industries. It investigates the supply chain's diversification and identifies new chances for the consumer of the product and services throughout the crisis. Since the covid19 will continue to exist with humans for at least five to 10 years, survival is ultimately the problem. We shall discover a means to cope with this illness, which is caused by a noble coronavirus. The OIC countries formulating their financial development strategies can draw certain conclusions from this article that will be beneficial to industry, academia, practitioners, investors, and regulators.

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AUTHOR CONTRIBUTIONS

For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, Dr. Irfan. and Dr. Zakir; Methodology, Dr. Irfan and Dr Zakir; Software, Dr. Naji; Validation, Dr. Zakir.; Formal Analysis, Dr. Irfan, Dr. Zakir, Dr. Naji; Investigation, DrJoji, Dr. Zakir; Resources, Dr. Zakir, Dr. Irfan, Dr. Naji, and Dr. Joji ; Data Curation, Dr. Irfan and Dr. Zakir.; Writing – Original Draft Preparation, Dr. Joji; Writing – Dr. Zakir, Dr. Irfan, Dr. Naji, and Dr. Joji; Supervision, Dr. Zakir, Dr. Irfan, Dr. Naji, and Dr. Joji; Project Administration, Dr Zakir; Funding Acquisition, Dr. Zakir, Dr. Naji, and Dr. Joji”.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

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