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Research Article

How Do the Crises of Falling Oil Prices and COVID-19 Affect Economic Sectors in the Rentier Economies? Evidence from the GCC Countries

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ABSTRACT

This study analyses the impacts of unprecedented falling oil prices and the COVID-19 outbreak in early 2020 on the stock markets of GCC countries – countries considered as natural resources-based rentier economies. To this end, the research uses daily data for 295 companies under the categories of services, industrial, and financial sectors in GCC countries from January 1, 2020, to February 23, 2021. The analysis was conducted over two phases. The first phase extended from January 1, 2020, to July 30, 2020, while the second phase extended from August 01, 2020, to February 23, 2021. The research utilised 18 random effect models in each phase to capture the impact of the oil price crisis and COVID-19 outbreak on each economic sector in each of the GCC countries. This study's findings reveal that the decline in oil prices and the spread of the COVID-19 epidemic were strong in the first phase, while this impact diminished in most economic sectors in the Gulf countries in the second phase. However, the GCC countries have not been impacted equally by the crisis of falling oil prices and the COVID-19 outbreak. The results show that the hardest-hit countries are Saudi Arabia, United Arab Emirates, and Qatar, respectively, while the least impacted countries are Oman, Bahrain, and Kuwait. Furthermore, the sector-wise analysis results reveal that the industrial sector in Saudi Arabia is the sector most affected by the oil price crisis, and the financial sector in Saudi Arabia is the sector most impacted by the COVID-19 outbreak in the GCC countries.

Keywords: COVID-19, Oil Prices, Stock Markets, GCC Countries



1. Introduction

COVID-19 has created fear and uncertainty in both economic and social life by spreading all across the world in a very short time. When the first infection case occurred in Wuhan, China, on December 31, 2019, its impact was initially thought to be local, but the disease spread far and wide - first in China, then to the entire world. Subsequently, the COVID-19 outbreak was announced as a pandemic by the World Health Organisation (WHO) on March 11, 2020. Consequently, some restrictions against economic activities are required to curb the spreading effect of COVID-19, and these negatively impact the global supply and demand, tourism, and aviation sectors. These measures cause a sharp decrease in consumption and economic output for all firms and industries (Mazur, Dang, & Vega, 2020). Therefore, this decrease also adversely affects the economic and financial sectors (Zhang, Hu, & Ji, 2020). Due to these circumstances, policymakers and academicians have discussed the economic and social effects of the pandemic on the real economy, financial sector, and oil prices since COVID-19 was announced as a pandemic, as presented in this paper's literature section. A sudden drop in oil prices occurred due to a fall in global demand on March 9, 2020, just before WHO's pandemic declaration. Following this, there was a decrease in oil prices of more than 20% in one day. Furthermore, the pandemic's negative effect has spilled over into the financial markets (Albulescu, 2020). Thus, it is possible to state that COVID-19 has negatively affected the real economy and financial sector, as well as public health (Huang, & Zheng, 2020).

In April 2020, United States (US) oil prices became negative for the first time in history due to dwindling demand (BBC, 2021). This can be attributed to the economic slowdown that emerged with COVID-19 (Gharib, Mefteh-Wali, & Jabeur, 2020). The global financial market was adversely affected due to the contraction in the commodity market, especially in terms of oil prices during the COVID-19 pandemic. This sudden decline reflects the most significant sharp drop since the Gulf war (Muhherjee, & Bardhan, 2020). In this case, the negative impact of COVID-19 on oil prices and the stock market poses a double challenge to policymakers because the markets are interdependent (Hung, 2020). From this perspective, it should be noted that the impact of oil prices on the stock market as a result of the impact of COVID-19 on the real economy has manifested itself, particularly in natural resources-based rentier states. Thus, in addition to the negative impact of COVID-19, the falling oil price resulting from COVID-19 has also impacted the stock market. Therefore, the stock markets, especially in oil-dependent countries, have been adversely affected by COVID-19 and oil prices (Prabheesh, Garg, & Padhan, 2020b). Among these oil-dependent countries, Gulf Cooperation Council (GCC) countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) have become players in the global financial system due to earning a high income from their natural resources. However, the stock market in these countries has been knocked by oil price and COVID-19 during the pandemic. Therefore, the economies of GCC countries have faced two severe shocks similar to the US economy: the COVID-19 pandemic and oil price decline (Sharif, Aloui, & Yarovaya, 2020). These shocks present a long-term economic slump, which is directly related to stock volatility.

Along with this negative impact from the COVID-19 pandemic, oil prices play a crucial role in the stock market performance of oil-exporting countries. It can be argued that a decline in oil prices decreases stock prices in oil-exporting countries as there is a consensus that a rise in oil price leads to increased stock prices in oil-exporting countries (Prabheesh, Padhan, & Garg, 2020a) or vice versa. Furthermore, there is also a consensus that COVID-19 adversely affects stock market performance. From this perspective, it is essential to analyse the impact of COVID-19 and oil prices on stock market performance in oil-exporting countries, such as the GCC countries.

Corresponding with this argument, the paper's main question empirically analyses how COVID-19 and oil prices affect stock market performance in the GCC countries. This paper aims to answer this question by reviewing the literature, which focuses on the impacts of pandemics and oil prices on stock market performances. This paper consists of six sections. Following the introduction, the second section, *Reviewing the Role of Oil Prices and COVID-19 in Stock Market Performances*, examines the impact of COVID-19 and oil prices on stock market performances. The third section, *How Do COVID-19 and Oil Prices Affect the Stock Market Performance?*, delivers the GCC countries' current situation regarding COVID-19, oil prices, and stock market performances. The fourth section, *Methodology*, uses the random-effect model as Hausman test in panel analysis using daily data for COVID-19 cases, oil prices, and stock prices from the six GCC countries by considering each sector and country. The fifth section, *Data and Empirical Test*, includes the data collection and econometric analysis results. The last section presents the overall general results and evaluation.

2. Reviewing the Role of Oil Prices and COVID-19 in Stock Market Performances

Stock market performances have been relatively fragile in crises arising from diseases such as Severe Acute Respiratory Syndrome (SARS), Ebola Virus Disease (EVD), and COVID-19 (Al-Awadhi, Al-Saifi, Al-Awadhi, & Alhamadi, 2020; Ashraf, 2020; Baker et al., 2020; Liu, Manzoor, Wang, Zhang, & Manzoor, 2020; Ozili, & Arun, 2020; Zhang et al., 2020; Chen, Lee, Lin, & Chen, 2018; Ichev, & Marinč, 2018; Beutels et al., 2009; Chen, Chen, Tang, & Huang, 2009; Chen, Jang, & Kim, 2007), in oil crises (Sakurai, & Kurosaki, 2020; Prabheesh et al., 2020a, 2020b; Sharif et al., 2020; Mukherjee, & Bardhan, 2020; Mensi, Sensoy, Vo, & Kang, 2020; Hung, 2020; Salisu, Ebul, & Usman, 2020; Gharib et al., 2020; Mhalla, 2020; Adekoya, & Oliyide, 2020; Iyke, 2020; Devpura, & Narayan, 2020; Narayan, 2020; Fu, & Shen, 2020; Liu, Wang, & Lee, 2020a; Albulescu, 2020) as well as crises arising from environmental issues (Alsaifi, Elnahass, & Salama, 2020; Guo, Kuai, & Liu, 2020), political issues (Bash, & Alsaifi, 2019; Shanaev, & Ghimire, 2019), and economic factors (Bala, & Takimoto, 2017; Cakan, Doytch, & Upadhyaya, 2015) all over the world.

According to the literature related to COVID-19, oil prices, and stock market performances, Sakurai, & Kurosaki (2020) examined the relationship between oil and stock market performance in the US since COVID-19 became effective. According to their findings, correlation asymmetry changed with COVID-19, so that a positive oil shock was better for the stock market during the COVID-19 pandemic than a similar one before the crisis. Prabheesh et al. (2020b) investigated the relationship between oil prices and the stock market in the major oil-exporting countries during COVID-19. It was found that a decline (an increase) in the oil prices negatively (positively) affected the stock return in the oil-exporting countries during COVID-19, and Saudi Arabia was the most affected country among the sample. Prabheesh et al. (2020a) examined the same relationship with a different model, DCC-GARCH, and found that a decline in oil prices negatively impacts stock returns, which is a similar result with their previous paper.

Sharif et al. (2020) used the Granger causality test to examine COVID-19, oil prices, stock market, geopolitical risk, and policy uncertainty nexus in the US economy. The results demonstrated that COVID-19's impact on geopolitical risk was higher than the impact on the economic uncertainty in the US. Furthermore, the finding shows that although oil volatility shocks are a transitory risk which can be dealt with through OPEC agreements, the price of oil can be further affected by COVID-19. Mukherjee, & Bardhan (2020) analysed the relationship between gold

prices, oil prices, and stock prices during the COVID-19 period. According to the findings, crude oil prices and volatility of crude oil and gold prices have been the main drivers of the stock price during the COVID-19 period. Similarly, Mensi et al. (2020) examined the impact of COVID-19 on the multifractality of gold and oil prices. The findings demonstrated that gold and oil prices have been more inefficient during up- and down-trends during COVID-19. Additionally, they have been sensitive to scales, market trends, and the COVID-19 pandemic.

With a similar result, Hung (2020) examined the relationship between oil price and stock returns during COVID-19 in the UK, Spain, Italy, Germany, and France. There was a significant relationship between crude oil and stock markets in these countries during COVID-19 compared to the time before the COVID-19 pandemic. In another study (Salisu et al., 2020), which examined the oil prices and stock market nexus during COVID-19, the effects were significant for both stock and oil, but more so for oil. In a similar study, Gharib et al. (2020) investigated the causal relationship between crude oil and gold prices during the COVID-19 pandemic and found that oil and gold prices were negatively related. In a similar vein, Mhalla (2020) analysed the impact of COVID-19 on oil and aviation industries and concluded that COVID-19 negatively affected these industries in the global economy.

In a broader perspective, Adekoya, & Oliyide (2020) investigated the role of COVID-19 on the link between traded commodities and financial assets like oil, gold, stocks, bitcoin, and dollar-euro exchange rates at a global level. The study found that COVID-19 has had a significant impact on the links between the assets, and investors have encountered a decrease in stock prices and risks arising from volatility in oil prices. Similarly, Lyke (2020) examined how oil and gas producers responded to the COVID-19 pandemic and found that 28% of returns and 27% of return volatility could be substantially explained by COVID-19. In a similar vein, Devpura, & Narayan (2020) analysed the effect of COVID-19 cases and deaths on oil price volatility and found that COVID-19 cases and deaths increase oil price volatility by 8% to 22%. In another study, Narayan (2020) evaluated how COVID-19 cases and oil price news affected oil prices. It was found that when the number of COVID-19 cases went beyond 84,479, it had a more significant impact on oil prices. In a manner similar to studies in the literature, Fu, & Shen (2020) studied the impact of COVID-19 on energy companies in China and concluded that COVID-19 has a negative and significant impact on energy companies. In contrast with the literature in terms of their results, Liu et al. (2020a) investigated the interaction between the COVID-19 pandemic, oil returns, and stock returns through the TVP-VAR model. They found that COVID-19 has a positive and significant impact on crude oil returns and stock returns as well as finding a negative relationship between oil returns and stock returns. Finally, Albuлесcu (2020) examined the effect of new COVID-19 cases on the international oil prices by utilising ARDL estimation and found a negative and significant effect of COVID-19 cases on oil prices. However, COVID-19 has an indirect impact on oil prices because it initially impacts the financial markets, as shown in Figure 1. This is the starting point of this study.

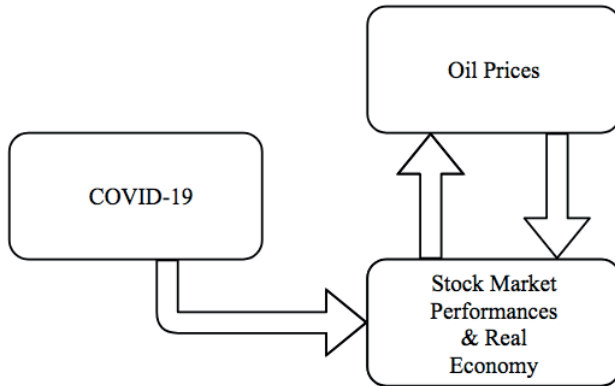


Figure 1: The Relationship between COVID-19, Oil Prices, and Stock Market Performance

Based on the literature review, it can be stated that to the best of our knowledge, the impact of COVID-19 and oil prices on the sectorial stock markets in oil-exporting economies such as those of the GCC countries has not been examined from this perspective in the literature. It is clear from the literature that there is a negative relationship between COVID-19, oil prices, and the stock market. However, this paper examines how COVID-19 and crude oil prices affected the stock market during the early and subsequent phases of COVID-19. This study provides two phases of analysis to capture the impact of the COVID-19 pandemic and oil prices on each economic sector in the GCC countries in those phases of the COVID-19 pandemic. These two phases of analysis help to fulfil the literature gap. Furthermore, this paper argues that stock returns, which have been decreased by COVID-19, negatively affect oil prices (Albulescu, 2020), then as a second wave, that decreased oil prices directly affect the stock markets. Accordingly, COVID-19 adversely affects the oil price, as seen in the literature. This relationship between COVID-19, oil prices, and the stock markets is worth examining for the GCC countries as oil-exporting countries.

3. How Do COVID-19 and Oil Prices Affect the Stock Market Performance?

The COVID-19 pandemic has caused an increase in stock market uncertainty; hence stock markets have been negatively affected by the COVID-19 pandemic (Adekoya, Oliyide, & Oduyemi, 2020). COVID-19 has also indirectly affected oil prices because it has had an impact on the real economy. The current economic situation has caused oil prices to steadily decline, as shown in Figure 2. Moreover, a decrease in oil prices can negatively affect stock markets, especially in oil-exporting countries like the GCC.

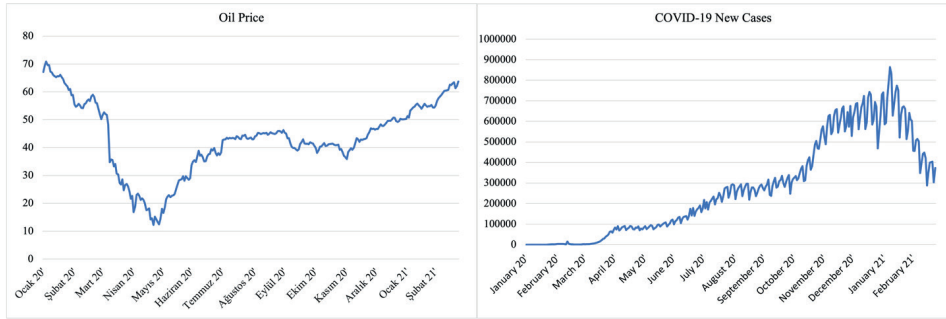


Figure 2: COVID-19 Cases and Oil Price in the World

Source: Thomson Reuters, Datastream; and Organization of the Petroleum Exporting Countries

As shown in Figure 2, the oil price suddenly dropped in March 2020 when COVID-19 cases spiked. With the markets’ adjustment to COVID-19’s adverse effects, oil prices began to rise in May. Due to the new variants of COVID-19, oil prices also fell as COVID-19 cases increased again in September. Oil prices, however, were back to pre-pandemic levels as of February 2021.

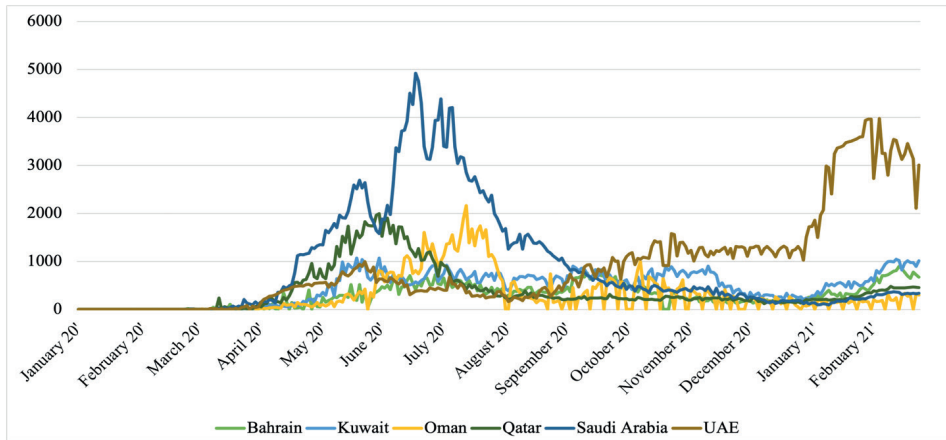


Figure 3: COVID-19 New Cases in the GCC countries

Source: Thomson Reuters, Datastream

The first case in the GCC countries was seen in the United Arab Emirates (UAE) on January 29, 2020 (Duncan, 2020). Since then, GCC countries have taken certain measures, including closing schools, cancelling flights, and closing workplaces simultaneously with other countries. However, despite the measures, increases in new cases were seen throughout the region, particularly after March, as shown in Figure 3. Saudi Arabia had approximately 50,000 cases, the highest number in the GCC region by October 2020, as seen in Figure 3. The most significant reason why Saudi Arabia had the highest number of cases is that it has the largest population (about 80% of the region’s population). In October, however, new COVID-19 cases in the UAE surpassed those in Saudi Arabia, reaching the highest level in the region. Figure 3 also shows that Qatar, a country with the lowest

population in the region, had the most COVID-19 cases in the early stage of the pandemic, followed by Saudi Arabia. Furthermore, despite having the highest population in the region after Saudi Arabia, Oman had the fewest cases of COVID-19 in the region as shown in Figure 3.

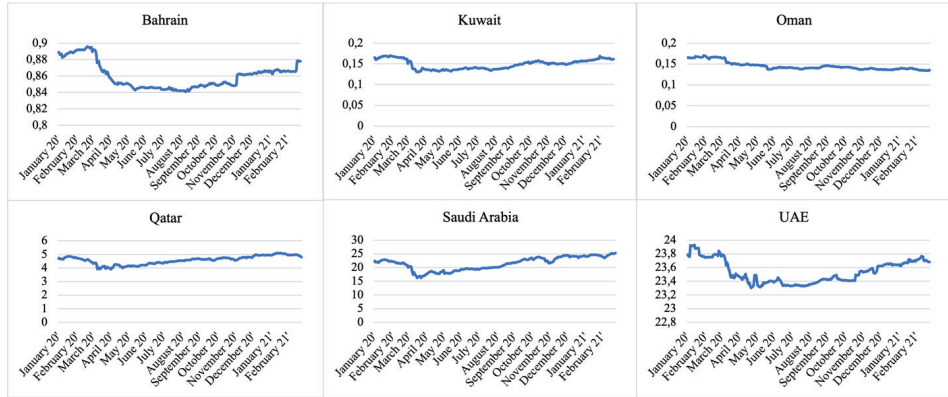


Figure 4: The Performance of the GCC Stock Markets in the Financial Sector during COVID-19
 Source: Thomson Reuters, Datastream

Figure 4 illustrates the sharp decline in the financial sectors of the GCC countries. For example, even though a number of government interventions in the financial system were made before March, there was a sudden decline in the UAE. On the other hand, direct government interventions lead to sharp ups and downs in the UAE. Overall, Figure 4 shows that the financial sector performance in GCC stock markets has increased with partial fluctuations in particular periods since March, except for Oman.

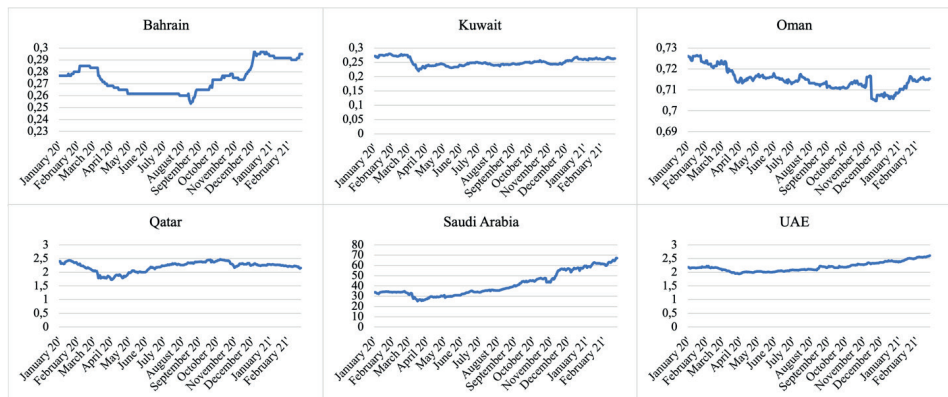


Figure 5: The Performance of the GCC Stock Markets in the Industrial Sector during COVID-19
 Source: Thomson Reuters, Datastream

As illustrated in Figure 5, following the start of COVID-19, the industrial sector experienced a decline in stock market performance, but this decline only occurred sharply in March. Saudi

Arabia, which has the most developed industrial sector in the region, recorded the highest decrease. The UAE, with other developed industrial sectors, ranked second. In general, Figure 5 shows that industrial stock market performance in the GCC countries increased after March, except for in Oman, which was the most volatile.

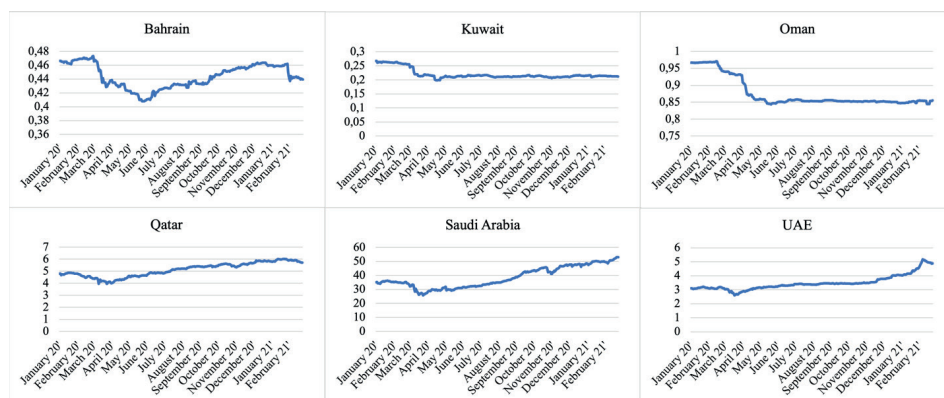


Figure 6: The Performance of the GCC Stock Markets in Service Sector during COVID-19
 Source: Thomson Reuters, Datastream

Figure 6 shows significant breaks in the service sectors of GCC countries, in particular those of Bahrain, Oman, and Saudi Arabia, since services are developed in GCC countries due to natural resource income. As shown in Figure 6, the sudden decline began in Bahrain, Saudi Arabia and Kuwait in March, while in Oman it began in April. The fluctuation seen in Qatar and the UAE was less than that of other countries and this may be due to government interventions in the sector. Following the early stage of the pandemic, it was observed that the stock market performance of the service sector of Bahrain, Saudi Arabia, the UAE and Qatar increased, while Kuwait and Oman experienced more stable progress after the initial decline stopped.

In summary, the presence of a large population in Saudi Arabia made it the most affected country in the GCC region due to COVID-19. In addition, GCC countries have also been affected by oil prices, which have indirectly affected COVID-19 in oil-exporting countries, as shown in Figure 2. This descriptive explanation requires an econometric analysis in order to present the relationship.

4. Methodology

This study employs a random-effect model, as suggested by the Hausman test results, in sectors of the six GCC countries. The study utilised daily data for 295 companies in the service, industrial, and financial sectors listed in stock markets within the six GCC countries from January 1, 2020, to February 23, 2021. The analysis was conducted in two phases. The first phase extended from January 1, 2020, to July 30, 2020, while the second phase extended from August 01, 2020, to February 23, 2021.

4.1. Research Model

Based on the research data, including time-series and cross-sectional, panel data analysis is most appropriate for getting reliable results and coping with multicollinearity among independent

variables. Additionally, the panel data analysis reduces bias and provides a better analysis than time-series or cross-sectional data analysis (Greene, 2012; Hsiao, 2007).

Before proceeding with the analysis, the panel unit root test was applied using the Phillips-Perron Fisher unit root test to check the stationarity of the research variables to avoid spurious regression. The equation of the Phillips-Perron Fisher unit root test is stated below;

$$\Delta y_t = \Delta y_{t-1} + \beta x_t + \varepsilon_t \quad (1)$$

This study applies the Hausman test to select the appropriate model between the fixed-effect and random-effect models. The null hypothesis of the Hausman test is that the random-effects model is appropriate, and the alternative hypothesis is that the fixed-effects model is appropriate. Equation (2) shows the Hausman test equation (Baltagi, 2005, pp. 65–73).

$$H' = (b_{FE} - b_{MEANS})' [Asy. Var[b_{FE}] + Asy. Var[b_{MEANS}]]^{-1} (b_{FE} - b_{MEANS}) \quad (2)$$

The research model, which is based on the random-effect model represented in equation (3)

$$PRICE_{it} = a_0 + \beta_1 COVID_{it} + \beta_2 OIL_{it} + \beta_3 MC_{it} + (v_i + \varepsilon_{it}) \quad (3)$$

where the dependent variable *PRICE* captures the price of stock *i* at day *t*, $i=1, \dots$ and *N* represents the number of companies in each sector in each country (cross-sectional panel companies for the period *t*), $t=1, 2, 3 \dots T$ represents the number of periods.

The independent variables in this study are represented by COVID-19, measured by the logarithm of the total confirmed world cases, OIL, measured by the logarithm of daily oil price, and MC, the logarithm of daily market capitalisation. v_i is the residual as a whole where the residual is a combination of cross-section and time series, ε_{it} represents the individual residual, representing the random character of unit observation.

5. Data and Empirical Tests

5.1. Data Collection

The study used daily data for 295 companies in the service, industrial, and financial sectors listed in stock markets in the six GCC countries between January 1, 2020, and February 23, 2021. The data were sourced from Thomson Reuters DataStream for stock prices, Organization of the Petroleum Exporting Countries (OPEC) for oil prices, and Wealth Health Organization through Thomson Reuters DataStream for COVID-19 cases.

5.2. Descriptive Statistics

Descriptive statistics and correlation matrix data is presented in Table Annex 1, 2 and 3. The correlation matrix in Table Annex 2 shows that there was a negative relationship between the total number of world cases of COVID 19 and the stock price in all the sectors in all GCC countries in the first phase of analysis, which extended from 01-01-2020 to 30-07-2020. In contrast, the correlation matrix in Table Annex 3 indicates that there was no significant negative relationship between the total number of world cases of COVID 19 and the stock price in all the sectors in all GCC countries in the second phase, which extended from 01-08-2020 to 23-02-2021. On the other

hand, the correlation matrix shows a positive relationship between the falling oil prices and the stock prices in all GCC countries' sectors in the first phase of analysis. However, the second phase of analysis showed that the correlation coefficient was weak and was not statistically significant in most sectors in GCC countries.

5.3. Empirical Tests

Table 1: Estimation of Panel Unit Root Rest (Phillips-Perron) in the UAE

	Method	Statistic	Prob.**
Prices in the Services Sector	PP - Fisher Chi-square	2434.23	0.0000
	PP - Choi Z-stat	-48.0849	0.0000
Prices in the Industrial Sector	PP - Fisher Chi-square	1075.00	0.0000
	PP - Choi Z-stat	-31.9488	0.0000
Prices in the Financial Sector	PP - Fisher Chi-square	3205.28	0.00000
	PP - Choi Z-stat	-54.9764	0.00000
COVID-19	PP - Fisher Chi-square	2179.39	0.00000
	PP - Choi Z-stat	-45.3946	0.00000
Oil Prices	PP - Fisher Chi-square	2360.39	0.00000
	PP - Choi Z-stat	-47.3307	0.00000

Table 1 presents the panel unit-root test results using the Phillips-Perron Fisher unit root test for all research variables in the UAE. The results indicate rejection of the null hypothesis of the test, that the series has a unit root. Accordingly, it is concluded that the research variables are stationary. Table 2 shows the results of three random-effect models for the impact of oil price and COVID-19 on stock prices in each of the service, industrial and financial sectors in the UAE. The samples include 18, 8, and 25 companies from the service, industrial, and financial sectors, respectively. In all economic sectors, it is seen that the null hypothesis of the Hausman test cannot be rejected, indicating that the random-effect model is in favour of the fixed-effect model.

Table 2: Results of Random Models for the Effect of Oil Prices on Stock Markets in the UAE

Sector	Random-Effect Model from 01-01-2020 to 30-07-2020			Random-Effect Model from 01-08-2020 to 23-02-2021		
	Services	Industrial	Financial	Services	Industrial	Financial
Log World COVID 19 Cases	-0.01513***	-0.001***	-0.0503***	0.12726***	0.19504***	0.0711***
Logoil	0.27315***	0.05419***	0.16843***	0.43873***	-0.2519***	0.52017***
Logcap	0.37541***	0.94117***	1.71012***	1.4206***	2.12593***	1.46095***
Constant	-4.0782***	-11.3779***	-19.5546***	-23.2238***	-29.4574***	-19.4319***
Adjusted R-squared	0.2888	0.6459	0.229	0.4672	0.7702	0.1683
F-statistic	368.89***	734.9781***	374.67***	773.96***	1313.84***	248.92***
Hausman Test Chi-Sq. Statistic	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: *** represents a significant level at 1%.

The first phase results show that the coefficients of oil prices on stock prices in services, industrial and financial companies were positive and statistically significant at 1 per cent. This re-

sult means that the decreasing oil prices pattern during the research period has decreased the stock prices in all sectors in the UAE. Consequently, oil prices dropped due to the sudden unease that swept the financial markets. The coefficients of the COVID-19 outbreak indicate a negative relationship between stock prices and the number of COVID-19 confirmed cases, which in turn led to a drop in stock prices across all economic sectors in the UAE. The second phase of analysis results show the disappearance of the negative impact of the increase in confirmed cases of COVID-19 on the stock prices in the three sectors in the UAE.

Table 3: Estimation of Panel Unit Root Test (Phillips-Perron) in Saudi Arabia

	Method	Statistic	Prob.**
Prices in the Services Sector	PP - Fisher Chi-square	4588.15	0.0000
	PP - Choi Z-stat	-65.9699	0.0000
Prices in the Industrial Sector	PP - Fisher Chi-square	4720.79	0.0000
	PP - Choi Z-stat	-66.9357	0.0000
Prices in the Financial Sector	PP - Fisher Chi-square	3147.19	0.00000
	PP - Choi Z-stat	-54.6528	0.00000
COVID-19	PP - Fisher Chi-square	2905.85	0.00000
	PP - Choi Z-stat	-52.4172	0.00000
Oil Prices	PP - Fisher Chi-square	3147.19	0.00000
	PP - Choi Z-stat	-54.6528	0.00000

Table 3 below presents the panel unit root test results based on the Phillips-Perron Fisher unit root test for all research variables in Saudi Arabia. According to the results, the null hypothesis is rejected. Therefore, the research variables are stationary.

Table 4: Results of Random Models for the Effect of Oil Prices on Stock Markets in Saudi Arabia

Sector	Random-Effect Model from 01-01-2020 to 30-07-2020			Random-Effect Model from 01-08-2020 to 23-02-2021		
	Services	Industrial	Financial	Services	Industrial	Financial
Log World COVID 19 Cases	-0.12982***	-0.03513*	-0.2268***	-0.18924	2.38712***	-0.29347***
Logoil	1.17242***	4.14743***	2.13441***	2.32343***	9.76199***	2.62265***
Logcap	19.55033***	6.31723***	3.32787***	36.16255***	46.6353***	25.2165***
Constant	-261.037***	-77.5933***	-35.0489***	-511.8250***	-721.718***	-362.588***
Adjusted R-squared	0.544318	0.343544	0.583973	0.704571	0.450125	0.815738
F-statistic	2104.936***	949.103***	1696.189***	4090.325***	1444.727***	5205.747***
Hausman Test Chi-Sq. Statistic	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: * and *** represent a significant level at 10% and 1%, respectively.

Table 4 demonstrates the results of three random-effect models for the impact of oil price and COVID-19 on stock prices in the services, industrial, and financial companies of Saudi Arabia. The three models are based on 35, 36, and 24 companies in the service, industrial, and financial sectors, respectively. The Hausman test confirms that the random-effect model favours the fixed-effect model in all economic sectors in Saudi Arabia. The first phase results show that the coefficients of oil prices on stock prices in services, industrial and financial companies were positive and statistically significant at 1 per cent.

The second phase of analysis results show that stock prices in all sectors in Saudi Arabia continue to be affected by oil prices. This implies that the decline of stock prices is associated with falling oil prices in Saudi Arabia in early 2020. This may reflect the investors' perspective that a decrease in oil prices usually lowers the economic growth in the oil-based country, which, in turn, leads to a decline in the corporations' profits, leading to a negative impact on stock prices. In contrast, the first phase of analysis results show that the coefficients of the COVID-19 outbreak confirm the negative relationship between stock prices and COVID-19 cases. Accordingly, an increasing number of confirmed COVID-19 cases in Saudi Arabia results in stock prices declining across all economic sectors. However, the results of the second phase of analysis show that the share prices of financial companies and service companies continue to be affected by the increase in confirmed COVID-19 cases. Finally, a direct result of the unprecedented crisis of falling oil prices and COVID-19 can be seen in the drop of stock prices in all the economic sectors in Saudi Arabia.

Table 5: Estimation of Panel Unit Root Test (Phillips-Perron) in Qatar

	Method	Statistic	Prob.**
Prices in the Services Sector	PP - Fisher Chi-square	1350.27	0.00000
	PP - Choi Z-stat	-35.8179	0.00000
Prices in the Industrial Sector	PP - Fisher Chi-square	1045.45	0.00000
	PP - Choi Z-stat	-31.4766	0.00000
Prices in the Financial Sector	PP - Fisher Chi-square	1774.36	0.0000
	PP - Choi Z-stat	-40.9260	0.0000
COVID-19	PP - Fisher Chi-square	1695.08	0.00000
	PP - Choi Z-stat	-40.0343	0.00000
Oil Prices	PP - Fisher Chi-square	1835.86	0.00000
	PP - Choi Z-stat	-41.7418	0.00000

Table 5 presents the panel unit root test results by using the Phillips-Perron Fisher unit root test for all research variables of Qatar. The results indicate a rejection of the null hypothesis of the test. Thus, it can be concluded that the research variables are stationary.

Table 6: Results of Random Models for the Effect of Oil Prices on Stock Markets in Qatar

Sector	Random-Effect Model from 01-01-2020 to 30-07-2020			Random-Effect Model from 01-08-2020 to 23-02-2021		
	Services	Industrial	Financial	Services	Industrial	Financial
Log World COVID 19 Cases	-0.00218***	-0.00023	-0.02786***	0.04084*	-0.03005***	0.02293*
Logoil	0.22835***	0.06228***	0.13069***	0.50914***	-0.1122***	0.12813***
Logcap	2.0572***	1.5347***	1.86278***	3.26284***	2.04284***	2.7055***
Constant	-27.392***	-20.799***	-22.3897***	-47.5861***	-27.188***	-35.397***
Adjusted R-squared	0.4604	0.596250	0.502941	0.57923	0.6049	0.5972
F-statistic	430.161***	595.158***	713.67***	675.081***	600.658***	1017.592***
Hausman Test Chi-Sq. Statistic	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: * and *** represent a significant level at 10% and 1%, respectively.

Table 6 shows the results of three random-effect models for the impact of oil price on stock prices in Qatar's economic sectors. The three models are built on 10, 8, and 14 companies in the service, in-

dustrial, and financial sectors, respectively. The Hausman test's null hypothesis cannot be rejected, which means that the random-effect model favours the fixed-effect model in all economic sectors.

It is seen from the results of the first phase of analysis that the coefficients of the effect of oil prices on stock prices in services, industrial and financial companies were positive and statistically significant at a 1 per cent level. This shows that Qatar's stock market prices declined because of low oil prices during the research period. This may be seen that during periods of low oil prices, investors usually in resource-dependent economies become more uncertain about the outlook for corporate earnings, which may, in turn, lead to lower stock prices. Moreover, the results of the second phase of analysis show that the stock prices of service and financial companies in Qatar continue to be affected by oil prices.

Additionally, the coefficients of the COVID-19 outbreak in the first phase of analysis confirm the negative relationship between stock prices and COVID-19 cases. This signifies that increasing the confirmed cases of COVID-19 led to decreasing stock prices in all economic sectors in Qatar. Nevertheless, the results of the second phase of analysis show that the share prices of industrial companies in Qatar continue to be affected by the increase in confirmed COVID-19 cases. Therefore, it can be concluded that the decline in oil prices and the spread of the COVID-19 pandemic are among the main factors that led to the decrease in the shares prices of companies in all economic sectors in Qatar.

Table 7: Estimation of Panel Unit Root Test (Phillips-Perron) in Kuwait

	Method	Statistic	Prob.**
Prices in the Services Sector	PP - Fisher Chi-square	2009.62	0.00000
	PP - Choi Z-stat	-43.5131	0.00000
Prices in the Industrial Sector	PP - Fisher Chi-square	1855.63	0.0000
	PP - Choi Z-stat	-41.9328	0.0000
Prices in the Financial Sector	PP - Fisher Chi-square	2972.51	0.00000
	PP - Choi Z-stat	-52.4855	0.00000
COVID-19	PP - Fisher Chi-square	2784.78	0.00000
	PP - Choi Z-stat	-51.3136	0.00000
Oil Prices	PP - Fisher Chi-square	3016.06	0.00000
	PP - Choi Z-stat	-53.5021	0.00000

Table 7 displays the panel unit root test results by using the Phillips-Perron Fisher unit root test for all research variables of Kuwait. The results indicate rejection of the null hypothesis of the test. Therefore, it can be concluded that the research variables are stationary.

Table 8: Results of Random Models for the Effect of Oil Prices on Stock Markets in Kuwait

Sector	Random-Effect Model from 01-01-2020 to 30-07-2020			Random-Effect Model from 01-08-2020 to 23-02-2021		
	Services	Industrial	Financial	Services	Industrial	Financial
Log World COVID 19 Cases	-0.00677***	-0.00061**	-0.0017***	-0.03939***	0.00729***	-0.00548***
Logoil	-0.01881**	0.0101***	0.00794***	-0.04775***	-0.0036	0.00973***
Logcap	0.57308***	0.2051***	0.18126***	0.59145***	0.0939***	0.29458***
Constant	-5.90221***	-1.86642***	-1.9478***	-5.46496***	-0.77299***	-3.26358***
Adjusted R-squared	0.3249	0.4841	0.6421	0.3428	0.2659	0.6876
F-statistic	388.355***	661.972***	2077.68***	409.849***	249.334***	2481.126***
Hausman Test Chi-Sq. Statistic	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: ** and *** represent a significant level at 5% and 1%, respectively.

Table 8 depicts the results of three random effect models for the impact of oil price on stock prices in Kuwait's economic sectors. The three models rely on 16, 14, and 23 companies in services, industrial, and financial sectors, respectively. The Hausman test results suggest that the random-effect model favours the fixed-effect model in all economic sectors of Kuwait.

It is evident from the results of the first phase of analysis that the coefficients of oil prices on stock prices in industrial and financial companies are statistically positive while it is statistically negative in service companies. Similar results are obtained through the second phase of analysis. However, the coefficients' values are small in all sectors in Kuwait, which implies minor effects of oil prices falling on stock prices. Likewise, the coefficients of the COVID-19 outbreak on stock prices in all sectors are also small. However, the negative impact of increased COVID-19 cases on industrial companies faded during the second phase. These results can be interpreted by the stock market participants' response to the government support to mitigate oil prices and the COVID-19 crisis by launching economic stimulus packages. Finally, therefore, it can be stated that the unprecedented decline in oil prices and the spread of COVID-19 played significant roles in stock price changes in all economic sectors of Kuwait.

Table 9: Estimation of panel unit root test (Phillips-Perron) in Bahrain

	Method	Statistic	Prob.**
Prices in the Services Sector	PP - Fisher Chi-square	271.507	0.00000
	PP - Choi Z-stat	-15.4179	0.00000
Prices in the Industrial Sector	PP - Fisher Chi-square	793.498	0.00000
	PP - Choi Z-stat	-27.4397	0.00000
Prices in the Financial Sector	PP - Fisher Chi-square	1218.04	0.0000
	PP - Choi Z-stat	-34.0124	0.0000
COVID-19	PP - Fisher Chi-square	1089.70	0.00000
	PP - Choi Z-stat	-32.0989	0.00000
Oil Prices	PP - Fisher Chi-square	1180.20	0.00000
	PP - Choi Z-stat	-33.4679	0.00000

Table 9 presents the panel unit root test results using the Phillips-Perron Fisher unit root test for all research variables of Bahrain. The results indicate rejection of the null hypothesis of the test. Therefore, it can be concluded that the research variables are stationary.

Table 10: Results of Random Models for the Effect of Oil Prices on Stock Markets in Bahrain

Sector	Random-Effect Model from 01-01-2020 to 30-07-2020			Random-Effect Model from 01-08-2020 to 23-02-2021		
	Services	Industrial	Financial	Services	Industrial	Financial
Log World COVID 19 Cases	-0.00729***	-0.00029***	-0.00263***	0.01461***	0.0229***	-0.00329***
Logoil	0.03778***	-0.00114***	0.00451	-0.04904***	-0.00857	-0.00511
Logcap	-0.00229	0.36362***	0.30127***	0.87031***	0.17143***	0.13567***
Constant	0.48987***	-3.33713***	-3.48847***	-8.78762***	-1.79306***	-1.34352***
Adjusted R-squared	0.260	0.96675	0.584	0.7830	0.6784	0.4212
F-statistic	107.011***	8771.129***	636.535***	1060.656***	620.576***	321.713***
Hausman Test Chi-Sq. Statistic	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: *** represents a significant level at 1%.

Table 10 shows the results of three random-effect models for the impact of oil price on stock prices in Bahrain's economic sectors. The three models are based on 6, 6, and 9 companies in services, industrial, and financial sectors, respectively. The random-effect model is used in all economic sectors in Bahrain, as suggested by the Hausman test results.

It is noted from the first phase of analysis that the coefficients of the effect of oil prices on stock prices in services, industrial, and financial companies were not statistically significant. Moreover, the second phase of analysis shows that the coefficients of oil prices on stock prices in services, industrial, and financial companies were negative and only statistically significant in services companies. Hence, it can be stated that the stock market in Bahrain was not affected negatively by falling oil prices in 2020. Likewise, the coefficients of the COVID-19 outbreak are too small, reflecting the negligible impact of COVID-19 on the stock markets. Additionally, the negative impact of COVID-19 on stock prices disappeared in industrial and financial companies in the second phase of analysis. This result reflects the quick response of the stock market and economy to government support by launching an economic stimulus package amounting to USD 11 billion to support individuals and companies (KPMG, 2020).

Table 11: Estimation of panel unit root test (Phillips-Perron) in Oman

	Method	Statistic	Prob.**
Prices in the Services Sector	PP - Fisher Chi-square	1674.66	0.0000
	PP - Choi Z-stat	-39.7544	0.0000
	PP - Fisher Chi-square	1381.10	0.0000
Prices in the Industrial Sector	PP - Choi Z-stat	-36.2448	0.0000
	PP - Fisher Chi-square	2531.89	0.0000
Prices in the Financial Sector	PP - Choi Z-stat	-48.4050	0.0000
	PP - Fisher Chi-square	2421.55	0.00000
COVID-19	PP - Choi Z-stat	-47.8502	0.00000
	PP - Fisher Chi-square	2622.66	0.00000
Oil Prices	PP - Choi Z-stat	-49.8910	0.00000

Table 11 shows the panel unit root test results using the Phillips-Perron Fisher unit root test for all research variables of Oman. The results indicate rejection of the null hypothesis of the test. Thus, it can be concluded that the research variables are stationary.

Table 12: Results of Random Models for the Effect of Oil Prices on Stock Markets in Oman

Sector	Random-Effect Model from 01-01-2020 to 30-07-2020			Random-Effect Model from 01-08-2020 to 23-02-2021		
	Services	Industrial	Financial	Services	Industrial	Financial
Log World COVID 19 Cases	0.00527***	-0.001***	-0.00032**	0.01237***	0.00703***	-0.00022
Logoil	-0.00957	0.00562***	-0.00364***	0.03111***	0.00292	0.00209
Logcap	1.5294***	0.15757***	0.19683***	0.4772***	0.16113	0.06127
Constant	-15.25277***	-1.23649***	-1.88924***	-4.61974***	-1.39866	-0.49137
Adjusted R-squared	0.5179	0.6675	0.5311	0.523160	0.8133	0.7354
F-statistic	703.638***	1010.703***	1140.811***	699.512***	2134.447***	2723.302***
Hausman Test Chi-Sq. Statistic	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: ** and *** represent a significant level at 5% and 1%, respectively.

Table 12 presents the results of panel data of fixed and random effect models for the impact of oil price on stock prices in the economic sectors. It is shown from the results of the first phase of analysis that the coefficients of the effect of oil prices on stock prices were negative in services and financial companies and positive in industrial companies. However, the coefficients of oil prices are too small, reflecting the modest impact of fall oil prices on Oman's stock markets. The second phase of analysis results show that only the service companies started to be affected significantly by the falling oil prices. On the other hand, the first phase of analysis shows that the coefficients of the COVID-19 outbreak are small, which reflects the modest impact of COVID-19 on stock markets again. Furthermore, the second phase results show that the negative impact of COVID-19 on stock prices in all Oman's economic sectors faded in the second phase. These results imply that market participants in the stock market responded positively to the Omani government's comprehensive economic incentive package to support the companies and inject additional liquidity of over USD 20.78 billion into the economy (OECD, 2020).

6. Conclusion

In early 2020, the falling oil prices and the COVID-19 outbreak were considered as critical factors in the global stock markets, especially for natural resources-based economies. Therefore, this study examines the effect of falling oil prices and the COVID-19 outbreak on GCC countries' stock markets. Furthermore, the study uses daily data for 295 corporations categorised as services, industrial, and financial sectors listed in the stock markets in the six GCC countries for January 1 and February 23, 2021. The analysis is divided into two phases. The first phase extends from January 1, 2020, to July 30, 2020, while the second phase extends from August 01, 2020, to February 23, 2021.

This research presents the belief that falling oil prices and the COVID-19 outbreak were the key driving factors that played an essential role in decreasing the GCC stock prices in early 2020. The empirical results of the analysis of the first phase of the impact of the decline in oil prices (Hung, 2020; Albulescu, 2020;) and the spread of the COVID-19 pandemic (Adekoya and Oliyide, 2020; Fu and Shen, 2020) confirm that stock prices responded quickly during the first stage and also that the negative impact was strong, by presenting similar results with other studies (*see*: Prabheesh, 2020a; Prabheesh, 2020b) focussing on the oil-exporting countries. Since oil-dependent economies are heavily dependent on natural resource revenues and do not have diversified economies, on the basis of the first stage results, it is possible to state that these economies are adversely affected by the decrease in production in the real economy. In contrast, the analysis results of the second phase indicate that the negative impact of the crisis of low oil prices and the outbreak of the COVID-19 pandemic diminished in most economic sectors in the Gulf countries in a similar vein with the findings of Sakurai and Kurosaki (2020). According to the results from the second stage, it appears that government support contributed to a reduction in the negative effects of oil and COVID-19 on stock prices among oil-rich countries. However, the GCC countries have not been impacted equally by the crisis of falling oil prices and the COVID-19 outbreak. Despite support of the companies and injection of liquidities into the economy by the Gulf states, the results of the first phase confirm that Saudi Arabia is the most impacted country (Prabheesh, 2020b) among the GCC countries, followed by the UAE and Qatar, respectively. In contrast, the least affected countries are Oman, Bahrain and Kuwait, respectively. Furthermore, the sector-wise analysis results show that the service sector is the sector most impacted by falling oil prices and the COVID-19 outbreak in all GCC countries. However, the industrial sector in Saudi Arabia is hit hardest by the falling oil prices, and the financial sector in Saudi Arabia is the most affected by COVID-19 among the GCC countries.

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Table Annex 1: Descriptive Statistics

Country	Sector	Number of Companies	Number of Observations	Average Price	Average Market Capitalisation
Bahrain	Services sector	6	1800	0.5165	62717.95
	Industrial sector	6	1800	0.274422	105841.7
	Financial sector	9	2700	0.325626	1131555.
Kuwait	Services sector	16	4800	0.683771	399761.3
	Industrial sector	14	4200	0.345010	92554.85
	Financial sector	23	6900	0.270578	716536.3
Oman	Services sector	13	3900	0.716410	63634.09
	Industrial sector	10	3000	0.255900	27408.16
	Financial sector	20	6000	0.155457	130627.5
Qatar	Services sector	10	3000	4.976360	7622477.
	Industrial sector	8	2400	2.51	31533556.7
	Financial sector	14	4200	4.7	19022084.4
Saudi Arabia	Services sector	35	10500	20.22	84248530.6
	Industrial sector	36	10800	23.6	555072
	Financial sector	24	7200	20.83446	24644876
UAE	Services sector	18	5400	5.52	25021630.07
	Industrial sector	8	2400	1.675613	1782938.
	Financial sector	25	7500	4.866521	13175166

Table Annex 2: Correlation Matrix for the First Phase from 01-01-2020 to 30-07-2020

		Probability	PRICE	LOGCASES	LOGCAP	LOGOIL
Bahrain	Services Sector	PRICE	1			
		LOGCASES	-0.09483***	1		
		LOGCAP	0.616981***	-0.220946***	1	
		LOGOIL	0.084434**	-0.587462***	0.163698***	1
	Industrial Sector	PRICE	1			
		LOGCASES	-0.06916**	1		
		LOGCAP	0.371456***	-0.010591	1	
	Financial Sector	LOGOIL	0.054054	-0.587462***	0.009116	1
		PRICE	1			
LOGCASES		-0.15576***	1			
Kuwait	Services Sector	LOGCAP	0.540251***	-0.064848**	1	
		LOGOIL	0.116920***	-0.587462***	0.049486*	1
		PRICE	1			
		LOGCASES	-0.06025***	1		
	Industrial Sector	LOGCAP	0.413332***	-0.06219***	1	
		LOGOIL	0.052918***	-0.587462***	0.067177***	1
		PRICE	1			
	Financial Sector	LOGCASES	-0.07537***	1		
		LOGCAP	0.674851***	-0.056843***	1	
LOGOIL		0.079972***	-0.587462***	0.058093***	1	
Oman	Services Sector	PRICE	1			
		LOGCASES	-0.13094***	1		
		LOGCAP	0.714261***	-0.06637***	1	
		LOGOIL	0.121607***	-0.587462***	0.063547***	1
	Industrial Sector	PRICE	1			
		LOGCASES	-0.08499***	1		
		LOGCAP	0.571394***	-0.051622**	1	
	Financial Sector	LOGOIL	0.058359**	-0.587462***	0.030084	1
		PRICE	1			
LOGCASES		-0.11272***	1			
Qatar	Services Sector	LOGCAP	0.083903***	-0.046727***	1	
		LOGOIL	0.091590***	-0.587462***	0.041538**	1
		PRICE	1			
		LOGCASES	-0.02919	1		
	Industrial Sector	LOGCAP	0.581553***	-0.021952	1	
		LOGOIL	0.056119**	-0.587462***	0.053455*	1
		PRICE	1			
	Financial Sector	LOGCASES	-0.04207	1		
		LOGCAP	0.06359**	-0.0274	1	
LOGOIL		0.097212***	-0.587462***	0.069541**	1	
Financial Sector	PRICE	1				
	LOGCASES	-0.04597**	1			
	LOGCAP	0.654072	-0.021701	1		
	LOGOIL	0.054575**	-0.587462***	0.037501*	1	

Saudi Arabia	Services Sector	PRICE	1			
		LOGCASES	-0.07583***	1		
		LOGCAP	0.35859***	-0.04368***	1	
		LOGOIL	0.094638***	-0.587462***	0.060303***	1
	Industrial Sector	PRICE	1			
		LOGCASES	-0.06797***	1		
		LOGCAP	0.227007***	-0.020573	1	
		LOGOIL	0.114909***	-0.587462***	0.046635***	1
	Financial Sector	PRICE	1			
LOGCASES		-0.13028***	1			
LOGCAP		0.446126***	-0.023977	1		
	LOGOIL	0.142278***	-0.587462***	0.036652**	1.000000	
UAE	Services Sector	PRICE	1			
		LOGCASES	-0.0419**	1		
		LOGCAP	0.706922***	-0.033415*	1	
		LOGOIL	0.055002***	-0.587462***	0.066452***	1
	Industrial Sector	PRICE	1			
		LOGCASES	-0.07738***	1		
		LOGCAP	0.324607***	-0.051164*	1	
		LOGOIL	0.110241***	-0.587462***	0.072614**	1.000000
	Financial Sector	PRICE	1			
LOGCASES		-0.0299*	1			
LOGCAP		0.360411***	-0.048747***	1		
	LOGOIL	0.025962	-0.587462***	0.045640***	1	

Table Annex 3: Correlation Matrix for the Second Phase from 01-08-2020 to 23-02-2021

		Probability	PRICE	LOGCASES	LOGCAP	LOGOIL
Bahrain	Services Sector	PRICE	1			
		LOGCASES	0.015018	1		
		LOGCAP	0.665706***	0.00462	1	
	Industrial Sector	LOGOIL	-0.007337	0.741031***	-0.002791	1
		PRICE	1			
		LOGCASES	0.098568***	1		
	Financial Sector	LOGCAP	0.548379***	0.000858	1	
		LOGOIL	0.070582**	0.741031***	0.001540	1
		PRICE	1			
Services Sector	LOGCASES	-0.00602	1			
	LOGCAP	0.62613***	0.004928	1		
	LOGOIL	-0.010748	0.741031***	-0.001456	1	
Kuwait	Services Sector	PRICE	1			
		LOGCASES	0.001619	1		
		LOGCAP	0.40994***	0.03075	1	
	Industrial Sector	LOGOIL	0.001810	0.741031***	0.026752	1
		PRICE	1			
		LOGCASES	0.037102*	1		
	Financial Sector	LOGCAP	0.700962***	0.046921**	1	
		LOGOIL	0.028624	0.741031***	0.038749*	1
		PRICE	1			
Services Sector	LOGCASES	0.045937***	1			
	LOGCAP	0.714032***	0.026351	1		
	LOGOIL	0.022679	0.741031***	0.012733	1	
Oman	Services Sector	PRICE	1			
		LOGCASES	-0.00388	1		
		LOGCAP	-0.26943***	-0.02094	1	
	Industrial Sector	LOGOIL	-0.002805	0.741031***	-0.018393	1
		PRICE	1			
		LOGCASES	0.058088**	1		
	Financial Sector	LOGCAP	0.560926***	0.030161	1	
		LOGOIL	0.053846**	0.741031***	0.030526	1
		PRICE	1			
Services Sector	LOGCASES	-0.02926	1			
	LOGCAP	0.217795***	-0.03455*	1		
	LOGOIL	-0.021152	0.741031***	-0.026301	1	
Qatar	Services Sector	PRICE	1			
		LOGCASES	0.050925*	1		
		LOGCAP	0.544912***	0.046563*	1	
	Industrial Sector	LOGOIL	0.041713	0.741031***	0.030906	1
		PRICE	1			
		LOGCASES	-0.03358	1		
	Financial Sector	LOGCAP	-0.01797	-0.01294	1	
		LOGOIL	-0.031290	0.741031***	-0.011389	1
		PRICE	1			
Services Sector	LOGCASES	0.030691	1			
	LOGCAP	0.601696***	0.022945	1		
	LOGOIL	0.028002	0.741031***	0.020205	1	

Saudi Arabia	Services Sector	PRICE	1			
		LOGCASES	0.081415***	1		
		LOGCAP	0.221087***	0.051589***	1	
	Industrial Sector	LOGOIL	0.048710***	0.741031***	0.027671**	1
		PRICE	1			
		LOGCASES	0.189953***	1		
	Financial Sector	LOGCAP	-0.00095	0.0904***	1	
		LOGOIL	0.141671***	0.741031***	0.060924***	1
		PRICE	1			
Services Sector	LOGCASES	0.092738***	1			
	LOGCAP	0.355119***	0.020744	1		
	LOGOIL	0.063599***	0.741031***	0.011375	1	
UAE	Services Sector	PRICE	1			
		LOGCASES	0.050659***	1		
		LOGCAP	0.604481***	0.032079*	1	
	Industrial Sector	LOGOIL	0.047238**	0.741031***	0.027682	1
		PRICE	1			
		LOGCASES	0.113471***	1		
Financial Sector	LOGCAP	0.419318***	0.03705	1		
	LOGOIL	0.094950***	0.741031***	0.038400	1	
	PRICE	1				
Services Sector	LOGCASES	0.013242	1			
	LOGCAP	0.36375***	0.025519	1		
	LOGOIL	0.012344	0.741031***	0.018909	1	

