Can The Easing Of COVID-19 Restrictions Enhance the Performance of Sectors in The Stock Market?

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Abstract

COVID-19 pandemic has affected stock prices in many sectors of financial markets and this can be seen in many countries all over the world. The main enquiries in this study included whether the negative effect of COVID-19 pandemic was converted into a positive reaction in the financial markets after the restriction related to the pandemic were gradually relaxed and which sectors were more affected by this relaxation. These inquiries were investigated through examining the case of the state of Qatar because it has an attractive investment environment as the richest country in the Arab world. Quantitative method was followed to answer the enquiries of this study by testing the performance of the stock indices in the sectors of Qatari market for the period from 25 April, 2021 to 18 November, 2021. The performance of the index of each sector was measured using risk-adjusted performance measures. Data of the study were analyzed using Friedman test. Study results revealed that the gradual lifting of the restrictions has positively affected the performance of the sectors in the stock market and that the magnitude and direction of the effect was different on each sector.

Keywords: COVID-19, Qatar financial market, COVID-19 restrictions, sectors performance, restrictions lifting

1. Introduction

Stock markets has been affected by the COVID-19 pandemic (Narayan, Gong, & Aliahmed, 2021) and that occurred through affecting stock prices (He, Sun, Zhang, & Li, 2020) and volatility of stocks in these markets (Sharma, 2020). However, the relaxation of restrictions related to COVID-19 like the lockdown restrictions can have a positive effect on the stock market as evidenced by Scherf, Matschke, and Rieger (2021). Easing of pandemic restrictions does not cause reduction in stocks volatility although it's generally expected to do so (Acharya & Liu, 2021) and based on that, it's still undetermined how the easing of pandemic-related restrictions will affect the stock markets which constitutes the main problem in this study. This problem can make investors unable to expect the future prices after lifting the restriction related to pandemics like COVID-19. Because the effect of the pandemic can be different on each sector in the market (Herwany, Febrian, Anwar, & Gunardi, 2021), the effect of easing of restrictions may also be different on each sector which may require specific pricing considerations by the investors in each sector.

The effect of lifting the restrictions related to COVID-19 on financial markets was tested by few researchers including Scherf, et al. (2021) but no studies were conducted to test the effect of gradual lifting of pandemic-related restrictions on the financial markets or sectors in the market. The gradual lifting of COVID-19 restrictions is now happening in many countries including Arabic countries. Some countries adopted a multi-phase lifting plans with different procedures in each phase. One of the countries who are implementing a multi-phase lifting of restrictions is Qatar who adopted a four phases plan to relax the restrictions of the pandemic. Testing the effect of each of these phases on the performance of sectors of financial market of Qatar was the main objective for conducting this study. Clarifying the effect of gradual lifting of pandemic-related restrictions may help investors in expecting stocks prices in each sector after lifting some restrictions related to pandemics like COVID-19. Furthermore, the outcomes of this study may help the regulators and the management of financial markets in protecting the market and investors from any bad consequences resulting from lifting the restrictions by clarifying the expected movement of the prices after each phase of lifting these restrictions. The hypotheses developed to achieve the objective of this study were that the gradual lifting of pandemic-related restrictions has affected the performance of each sector and that the effect was the same on all sectors.

2. Literature Review

2.1 Effect of COVID-19 on Stock Market and Its Sectors

COVID-19 pandemic has negatively affected stock markets in countries where the virus spread (Liu, Manzoor, Wang, Zhang, & Manzoor, 2020). COVID-19 pandemic has affected the stock market more than any previous infection epidemic (Baker et al., 2020). In addition, the negative effect of the pandemic includes all stock markets in all around the world but it was grater on emerging markets and small businesses as claimed by Harjoto, Rossi, and Paglia (2021) and in Asian markets as claimed by Liu, Manzoor, Wang, Zhang, and Manzoor (2020). Both Islamic and conventional market indices were affected at the same level by the pandemic as claimed by Elshqirat (2021a). Stock markets were negatively affected by both the number of infected cases per million (Erdem, 2020) and the number of pandemic-related deaths (Al-Awadhi, Alsaifi, Al-Awadhi, & Alhammadi, 2020). Stocks' prices and volatility were not the only aspects in financial markets that have been affected by the pandemic, other affects include the effect on trading intensity and usage of leverage by investors (Ortmann, Pelster, & Wengerek, 2020) and herding behavior among investors in the financial markets (Abdeldayem & Al Dulaimi, 2020; Espinosa-Méndez, & Arias 2021) although some other authors claimed that herding behavior was not affected (Elshqirat, 2021b). In addition, pandemic-related restrictions imposed by governments like social distancing and quarantine policies have affected the returns of stock markets (Ashraf, 2020). If the pandemic affected the financial market, the sectors of the market should also be affected but the question is whether that effect was the same on all sectors.

Sectors of the market reacted differently to the pandemic of COVID-19, some of it affected positively and other were affected negatively (Mazur, Dang, & Vega, 2021). Financial sector, for example, was concluded to be the most affected sector in the market of Vietnam because it suffered from bad loans and high deposits withdrawals (Anh & Gan, 2020) while food & beverage and retail trade sectors were the least affected in the Turkish market (Öztürk, Şişman, Uslu, & Çıtak, 2020). In addition, the restrictions imposed by governments because of the pandemic affected market sectors in different ways (Izzeldin, Muradoğlu, Pappas, & Sivaprasad, 2021). For instance, travel restrictions made the consumer services sector one of the most affected sectors while the technology sector benefited from the lockdown procedure and become the least affected sector in the G7 countries (Izzeldin et al., 2021). The lockdown procedures taken by governments made consumers use more online entertainment and products and thus positively affected business in this sector which was reflected in the stock prices of the industry. Travel and leisure sectors in the United States represent another example of sectors affected by the pandemic, stock returns in these sectors were negatively affected by government restrictions related to COVID-19 (Chen, Demir, García-Gómez, & Zaremba, 2020).

2.2 Gradual Lifting of COVID-19 Restrictions

After the fast spread of COVID-19 in the world, many countries started to impose restrictions related to travel, social distancing, and public events in a try to control the infection and reduce the new cases. Lifting these restrictions, however, is not as easy as imposing it; to lift the restrictions, some conditions should be met including that the number of new cases should be continuously decreasing, public health services should be prepared to deal with all new cases, and the society should be prepared to adapt to the new reality (Fadlallah, & El-Jardali, 2020). Many countries adopt a multi-phase lifting of the restrictions; in UK, for instance, a four phases road map was adopted by the government to gradually lifting the retractions by easing some restrictions in each phase (Lockdown, 2021). In the United States, some states like Alaska adopted a multi-phase plan to lift the restrictions consists of four phases while other states like Arizona and Alabama have issued multiple orders to change the restrictions in a method that is very similar to phases but without officially announce the phases (Where, n.d.). Examples of other countries that announced multi-phase restrictions lifting include Russia who adopted a three-stage lifting (Cottrell, 2020), Canada who adopted a timeline to lift the restrictions consists of five time points (*Ontario,* n.d.), Kuwait state where a five – phases easing plan was implemented (Artis, Carlei, & Bouteiller, 2020), and Saudi Arabia who announced a three -phases plan to lift the restrictions (Saudi, 2020).

In Qatar, the case that the researcher examined in this study, a four-phases plan for gradual lifting of the COVID-19 restrictions was adopted (Preventative, n.d.). These phases were implemented during a period of almost four months; the first phase started on May 28, 2021 and the last one started on October 3, 2021 with different time gaps between phases. Dates and details of these phases are explained in Appendix A. The restrictions lifted in the phases were related to four main categories namely: precautionary measures and gathering, transport, education health and sport, and business & leisure. Within these categories, more than 30 activities were covered including: indoor and outdoor gathering, prayers in mosques, wedding parties, public parks, private and public vehicles and busses, metro capacity, using boats, healthcare centers, gyms and training

clubs, teaching in schools, workplace capacity, cinemas, and many others (Preventative, n.d.). In each phase, restrictions related to the covered activities were eased partially by increasing the number of people in gathering for example or increase the capacity of public transport vehicles and so on. It's worth to note here that the vaccine doses per 100 people at the beginning of the first phase was 84.48 while it was 161.23 at the beginning of the last phase with an increase of almost 91% (Qatar, n.d.). This means that the country was working hard to vaccinate people against the virus to ensure their safety after lifting the restrictions and to prevent the infection rate from increasing due to reopening of public facilities.

2.3 Effect of Lifting the Covid- 19 Restrictions on the Stock Market and Sectors

As concluded by many previous studies, the restrictions related to COVID-19 have affected stock markets and its sectors. This effect, whether negative or positive, can be expected to reverse or at least stop after lifting the restrictions. For instance, lifting the lockdown had a positive effect on stock markets as concluded by Scherf, et al. (2021) and easing the restrictions is expected to increase the stock returns of travel and leisure companies after decreasing it (Chen et al., 2020). As the restrictions related to COVID-19 are now being lifted by many countries, the performance of stock markets and its sectors may become better and thus, investors may gain more returns from considering the effect of lifting the restrictions on stock prices. If the lifting of restrictions can affect the performance of stock markets, then it can affect the performance of its sectors but the effect may be of different directions and magnitude for each sector depending on the relation between the industry of the sector and the type of restrictions being lifted. For example, if the lifted restrictions are only about travel, then the travel sector will be affected more than other sectors. In addition, gradual lifting may have different effect on the performance of stocks in the market sectors because the size and type of restrictions lifted in each phase may be different and the sectors targeted in each phase may also be different.

Studies about the effect of lifting the pandemic-related restrictions on stock market are very limited till now which imply that the effect of lifting the restrictions, whether fully or gradually, on the performance of stock market and its sectors is still unexplored. The purpose of this study was to uncover the effect of the gradual lifting of restrictions on the performance of the stock market sectors. If a significant effect is detected, then the effect of similar lifting of pandemics-related restrictions can be estimated and included in any prices expectation in the affected sectors. This study is at least among first studies to focus on testing the gradual lifting of COVID-19 restrictions on the performance of sectors' stocks in the world and the first study of its kind in the Arabic countries. This study may add value to the current finance literature by clarifying how gradual lifting of restrictions can affect each sector in the stock market and how investors may benefit from that. The state of Qatar was selected in this study because it's the richest country in Arabic world in 2021 based on the GDP per capita (*Top,* n.d.) and thus, its financial market can be attracting for new investors.

2.4 Hypotheses

Because the pandemic-related restrictions affected the stock market, lifting these restrictions is expected also to affect the performance of the market and thus, the first hypothesis tested in this study was that after each phase of the gradual lifting of the restrictions, the performance of the sectors in the Qatari stock market changed. The second hypothesis was that the effect of the gradual lifting of restrictions is different between sectors. These hypotheses can be expressed as follows:

H1: The gradual lifting of COVID-19 restrictions has affected the performance of the sectors in the stock market

H2: The effect of the gradual lifting of COVID-19 restrictions was different on each sector

3. Method

3.1 Research Data

Stocks' data for this study were collected from Qatar exchange index (QE) for general market and for sectors; these data were downloaded from investing.com website (Investing.com, 2021) for the period from 25 April, 2021 to 18 November, 2021. The four-phases plan for lifting restrictions was implemented during the period from 28 May to 3 October, 2021 as follows: phase 1: May 28, phase 2: June 16, phase 3: July 9, phase 3.2: August 6, and phase 4: October 3. Stocks prices were collected for almost one month before the beginning of the first phase and for about 15 days after the starting of the last phase because that was the maximum data available at the time of downloading it. The indices of the seven sectors in Qatar stock exchange were included in this study; these sectors are: banks and financial services, insurance, industrial, transportation, real estate, consumer goods & services, and telecoms. For the purpose of calculating performance measures for the sectors' indices, the QE general market index was considered the benchmark and the risk-free rate was calculated using the interest rate on treasury bills for nine months issued by the central bank of Qatar. Data of treasury bills for the

study period were collected from the "statement on the issuance of treasury bills" published in the website of the central bank. Using these data, the performance of market sectors was measured and then tested using Friedman test.

3.2 Research Design

A quantitative design was utilized to achieve the objective of this study in exploring the effect of the gradual lifting of pandemic-related restrictions on the performance of the sectors in Qatar stock market. The performance of the sectors in the stock market was evaluated using risk-adjusted measures including Sharp Ratio, Jensen's Alpha, Treynor Ratio, and Modigliani–Modigliani (M2) measure. These measures were calculated before the beginning of the first phase (from April 25 to May 27, 2021) and then for the period from the beginning of each phase till the beginning of the next phase; finally, the measures were calculated for the period from the beginning of the last phase until November 18, 2021. All measures were calculated for all phases and for all the seven sectors in the market. After calculating the performance measures for all sectors and all phases, these data were tested using Friedman test which is the nonparametric counterpart for one-way Anova.

3.3 Risk-Adjusted Performance Measures

To measure the performance of the market sectors, four risk-adjusted measures were used namely: Sharp Ratio, Jensen's Alpha, Treynor Ratio, and Modigliani–Modigliani (M2) measure. In Sharp ratio, the performance of a portfolio is measured by finding risk premium for each unit of risk using the following equation (Tewari, Shukla, & Yadav, 2019):

$$S = (R_p - R_f) / \sigma_p \tag{1}$$

This equation was adjusted to measure the performance of market sectors as follows:

$$S = (\overline{R_{is}} - \overline{R_f}) / \sigma_s \tag{2}$$

Where $\overline{R_{is}}$ is the average return (average of R_{is}'s) on the sector i index, $\overline{R_f}$ is the average risk-free rate, and σ_s is the standard deviation of the sector's index returns. The performance of the sector is better with larger ratio. R_{is} for each day was calculated as follows:

$$R_{is} = [(P_{it} - P_{it-1}) / P_{it-1}] * 100 \tag{3}$$

Where R_{is} is the return on the index of sector i, P_{it} is the closing price of the sector's index at day t, P_{it-1} is the closing price of the sector's index at day t-1.

The second performance measure used in this study was Jensen's Alpha which evaluates the performance by finding the return gained in excess of that estimated by the capital asset pricing model (CAPM). This measure is calculated using the following equation (Tewari et al., 2019):

$$\alpha = R_p - (R_f + \beta(R_m - R_f)) \tag{4}$$

This equation was also modified to measure the performance of sectors as follows:

$$\alpha = \overline{R_{is}} - (\overline{R_f} + \beta(\overline{R_{bm}} - \overline{R_f})) \tag{5}$$

Where $\overline{R_{is}}$ is the average return on the index of sector i, $\overline{R_f}$ is the average risk-free rate, β is the beta of the sector's index (related to the general market index), $\overline{R_{bm}}$ is the average of returns on the general market index (average of R_{bm}'s). R_{bm} value for each day was calculated using the following equation:

$$R_{bm} = [(P_{bmt} - P_{bmt-1}) / P_{bmt-1}] * 100 \tag{6}$$

Where R_{bm} is the return on the general market index, P_{bm} is the closing price of that index at day t, and P_{bmt-1} is the closing price of the index at day t-1. The performance of the sector is higher with larger value of α.

The third performance measure used in this study was Treynor Ratio. The calculation of this measure is the same like Sharp ratio but the portfolio risk here is estimated using the portfolio beta instead of the standard deviation of the returns like in Sharp ratio. This measure can be calculated as follows (Tewari et al., 2019):

$$T = (R_p - R_f) / \beta_p \tag{7}$$

Like the equations for other measures, this equation was modified to estimate the performance of the sectors. The adjusted equation was as follows:

$$T = (\overline{R_{is}} - \overline{R_f}) / \beta_{is} \tag{8}$$

Where $\overline{R_{is}}$ is the average return on the index of sector i, $\overline{R_f}$ is the average risk-free rate, β_{is} is the beta of sector i index estimated by the traditional CAPM and using the general market index as the benchmark market. The performance of each index is better with higher T value.

The fourth measure of performance used was the M2 measure or the risk-adjusted performance (RAP) measure. This measure is calculated as follows (Scholz & Wilkens, 2005):

$$RAP = S\,\sigma_m + \overline{R_f} \tag{9}$$

This equation was changed as follows to estimate the performance of the index of each sector:

$$RAP = S_i\,\sigma_m + \overline{R_f} \tag{10}$$

where S_i is the Sharp ratio for sector i estimated in Equation 2, σ_m is the standard deviation of the returns of general market index, and $\overline{R_f}$ is the average risk-free rate. The higher this value, the better the performance of the sector. The relationship between the sector performance and all the previous explained measures is a direct relationship.

4. Results

4.1 Descriptive Statistics

Descriptive statistics about the general index of Qatari market showed that average return was increasing with the starting of each phase except for phase 3 and phase 4. As can be seen in Table 1, the highest increase in the average return on the general market index was in phase 2 while the highest decrease was in phase3. On the other side, the volatility of the market, as estimated by the standard deviation, decreased after the starting of phase 1 and phase 3.2 with the highest decrease in Phase 1; the highest increase in volatility was in phase 4. In phases 1 and 3.2, there was increase in the average return and decrease in volatility while in phase 3 and 4 there was a decrease in average return and increase in volatility; the relationship between average return and volatility for these phases was opposite to the expected direct relationship.

Table 1. Market Index Descriptive Statistics During the Phases of Gradual Lifting of Restrictions

Phase	Mean	Change in mean% from previous phase	SD	Change in SD% from previous phase
Before phase 1	-0.032	---	0.597	---
Phase 1	-0.012	62%	0.328	-45%
Phase 2	0.062	605%	0.402	23%
Phase 3	0.041	-34%	0.491	22%
Phase 3.2	0.129	215%	0.297	-40%
Phase 4	0.114	-12%	0.451	52%

For sectors, however, the descriptive statistics summarized in Table 2 showed that the returns of the sectors of banking, industry, consumer goods & services, and transportation increased with the starting of the gradual lifting of the restrictions (starting of phase1); the higher increase at that time was in the returns of transportation sector which increased by 10.7%. It can be noticed also from Table 2 that all sectors generated positive returns in Phase 4 except for the Telecoms sector which had a negative return of 6%. In addition, the banking was the only sector that showed increasing returns with the starting of each phase.

Table 2. Sectors' Indices Descriptive Statistics During the Phases of Gradual Lifting of Restrictions

Sector	Mean (Standard deviation)					
	Before phase 1	Phase 1	Phase 2	Phase 3	Phase 3.2	Phase 4
Banking	-0.016 (0.435)	0.001 (0.476)	0.043 (0.363)	0.102 (0.543)	0.104 (0.342)	0.182 (0.539)
Industry	0.040 (1.289)	0.089 (0.568)	0.059 (0.531)	0.053 (0.684)	0.264 (0.751)	0.080 (0.664)
Insurance	0.078 (0.860)	-0.044 (0.609)	-0.049 (0.574)	-0.023 (1.170)	-0.054 (0.424)	0.030 (0.569)
Consumer goods &services	-0.065 (0.560)	-0.058 (0.396)	-0.087 (0.472)	0.072 (0.361)	-0.010 (0.375)	0.048 (0.425)
Real estate	-0.068 (0.738)	-0.268 (0.410)	-0.054 (0.912)	-0.025 (0.734)	0.017 (0.531)	0.045 (0.619)
Telecoms	-0.112 (0.614)	-0.183 (0.653)	0.260 (1.882)	-0.138 (0.604)	0.085 (0.466)	-0.060 (0.568)
Transportation	-0.150 (0.609)	-0.043 (0.305)	0.277 (1.008)	-0.184 (0.538)	0.004 (0.402)	0.122 (0.599)

4.2 Hypotheses Testing

4.2.1 Hypothesis One

There were two hypotheses in this study, the first one was developed to find whether the gradual lifting of COVID-19 restrictions has affected the performance of the sectors' indices in Qatari stock market. To measure the performance of the market sectors' indices, four risk-adjusted measures were used that included: Sharp Ratio, Jensen's Alpha, Treynor Ratio, and Modigliani–Modigliani (M2) measure, these measures were estimated using the equations 2, 5, 8, and 10. A summary of the values of these measures for market sectors can be seen in Appendix B.

The first hypothesis was formulated as follows:

H0: There is no effect for the gradual lifting of COVID-19 restrictions on the performance of sectors' indices

H1: There is an effect for the gradual lifting of COVID-19 restrictions on the performance of sectors' indices

The appropriate statistical test for this hypothesis is Two-way Anova but the problem was that the normality assumption for the test was violated as can be concluded from the results of Shapiro-Wilk test of normality summarized in Table 3. Based on these results, the null hypothesis that the data are normally distributed can be rejected because the test statistic was significant for 4 phases out of 6 and for 4 sectors out of 7. As a result for this violation of normality, Friedman test, the nonparametric alternative test for the Two-way Anova, was used to test the first hypothesis. As shown in Table 4, the test was significant for 6 sectors out of 7 which means that at least one phase of the gradual lifting has affected the performance of all sectors in Qatari stock market except for the industry sector and thus, the first null hypothesis can be rejected and it can be said that the phases of gradual lifting of COVID-19 restrictions affected the performance of stock market sectors in Qatari market.

Table 3. Results for Test of Shapiro-Wilk Test of Normality

Phase / Sector	Shapiro-Wilk statistic	p
Phases		
Before phase 1	.928	.055
Phase 1	.839	.001
Phase 2	.986	.967
Phase 3	.876	.003
Phase 3.2	.730	<.001
Phase 4	.242	<.001
Sectors		
Banking	.955	.342
Industry	.899	.021
Insurance	.553	<.001
Consumer goods &services	.966	.571
Real estate	.700	<.001
Telecoms	.309	<.001
Transportation	.942	.181

Table 4. Results of Friedman Test for the Performance of Market Sectors

Sector	Test statistic	p
Banking	17	.004
Industry	10.286	.068
Insurance	19.143	.002
Consumer goods &services	16.571	.005
Real estate	16.143	.006
Telecoms	14.714	.012
Transportation	17.571	.004

For further clarification about which phases affected the performance of each sector, the main pairwise comparison of the test was analyzed and summarized in Table 5. As can be seen in the table, the first and only effect for the gradual lifting of restrictions on the performance of banking and real estate sectors was in phase 3 and the first effect on consumer goods & services was in phase 3 also. In addition, the first effect of the lifting on the performance of insurance sector was in phase 1; for sectors of telecoms and transportation, the first effect for the gradual lifting of restrictions was in phase 2. Because the performance of sectors is increased with the increasing values of all performance measures calculated in this study, the effect of gradual lifting is positive if the mean of the performance measures is increasing between phases. In banking sector, for example, the change in the mean of the performance measures from the period before phase1 to phase 3 as illustrated in Table 5 was 329% which is a positive change and based on this, it can be concluded that the effect of the gradual lifting was positive on the performance of the banking sector. The total change in the mean of performance measures during the phases with significant effect was calculated for each affected sector and the totals are summarized in Table 5. Based on these totals, it can be concluded that the phases of gradual lifting of the restrictions have positively affected the performance of the sectors in Qatari stock market because the total change in the mean of the performance measures for 4 sectors out of 6 was positive.

Table 5. Results of Friedman Test Comparison Between Phases for each Affected Sector

Sectors' phases comparison	Test statistic	p	Total change in the mean
Banking			*329%*
Before phase 1- phase3	-3.250	.014	
Insurance			*-63%*
Before phase 1- phase 1	2.750	.038	
Phase 3.2 – phase 4	-3.750	.005	
Consumer goods & services			*-39%*
Phase 1- phase 3	-3.500	.008	
Phase 3 – phase 3.2	3.5	.008	
Real estate			*87%*
Phase 1 -phase 3	-3.000	.023	
Telecoms			*137%*
Before phase 1 – phase 2	-3.500	.008	
Phase 1 – phase2	-3.500	.008	
Phase 2 – phase 3	3.500	.008	
Phase 3 – phase 3.2	-3.000	.023	
Transportation			*63%*
Before phase 1 – phase 2	-3.500	.008	
Phase 1 – phase 2	-3.000	.023	
Phase 2 – phase 3	4.500	.001	

4.2.2 Hypothesis Two

The objective behind developing hypothesis 2 was to determine whether the effect of the gradual lifting of the restrictions had the same effect on all affected sectors. The null and alternative hypotheses were as follows:

H0: The effect of the gradual lifting of COVID-19 restrictions was the same on each sector

H1: The effect of the gradual lifting of COVID-19 restrictions was different on each sector

From Table 5, it can be noticed that the effect of the phases was not the same on the sectors because the total effect was positive for sectors of banking, real estate, telecoms, and transportation while it was negative on sectors of insurance and consumer goods & services. The highest effect for the gradual lifting was on the banking sector followed by telecoms, real estate, insurance, transportation, and the least affected was the sector

of consumer goods & services. Based on this, the null hypothesis can be rejected and it can be concluded that the effect of the gradual lifting of COVID-19 restrictions was different in magnitude and direction among sectors of Qatari stock market.

5. Discussion

It can be concluded from the results of the statistical analysis and hypotheses testing that the gradual lifting of COVID-19 restrictions has positively affected the performance of the sectors of stock market and that this effect was not the same on each sector. The positive effect is understandable because imposing these restrictions had negatively affected the performance of market sectors as concluded by Ashraf (2020) and its logical for this effect to reverse when these restrictions are lifted. Because the effect of imposing the pandemic-related restrictions had a different effect on the market sectors (Izzeldin et al., 2021), it's also expected that lifting these restrictions will have different effect on sectors. Based on this, the results reached in this study regarding the positive effect of restrictions lifting and the different effect among sectors can be justifiable and understandable. One remarkable result in this study is that the performance of the industry sector was not affected by any phase of the phases of gradual lifting. This result may need more analysis to determine why investors in this sector did not consider the gradual lifting of restriction as a positive indicator. Results of this study agree with the results reached by Scherf, et al. (2021) who concluded that lifting the lockdown has positively affected the stock market and Chen, Demir, García-Gómez, and Zaremba (2020) who expected that lifting the restrictions related to COVID-19 will increase the returns of the stocks of travel and leisure industry.

Conclusions of this study can be generalized to the stock markets that have the same characteristics of Qatari market especially the markets of countries of the gulf cooperation council surrounding Qatar. Because only few studies covered the effect of lifting the COVID-19 restrictions on the performance of stock market sector, this study can be considered among the first studies to explore that effect and its also the first study to test the effect of restrictions lifting in the Arab world. Study results can provide many benefits for investors and for market management. For investors, study results provide a good bases for predicting the stock prices when the restrictions of any pandemic like COVID-19 are lifted and investors can also adjust their trading strategy during the pandemic and during the lifting of pandemic-related restrictions to make more profits. For market management, the results can be used to prevent the market from falling during the pandemics by considering lifting the restrictions when the market sector is falling down. In addition, financial market management can protect investors by clarifying the expected effect of each phase of restrictions lifting on the performance of market sectors to avoid any bad consequences on the investments resulted from that lifting. It may be of high importance that future studies should be conducted to explore what exact restrictions are affecting what sectors in the market and how each sector is affected in terms of direction and magnitude. After that, the reverse effect of each restriction should be studied and linked to the appropriate sector. By doing this, it can be determined how to control market sectors performance using the lifting of specific restrictions. Additional research may be conducted to compare the effect of lifting the restrictions of COVID-19 on the sectors performance with the effect of lifting restrictions related to other pandemics and then develop a model that can fit any future pandemics.

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Appendix A

Dates and Details of Restrictions Easing Phases in Qatar

Phase number	Starting date	Major eased restrictions
1	May 28, 2021	- No more than 10 vaccinated people or 5 unvaccinated people to gather outdoors and no more than 5 vaccinated people to gather indoors - Mosques open for people over 12 with its toilets closed - Wedding parties are prohibited - Increasing metro capacity to 30% - Private health care operate at 80% - Gyms operate at 30% (all must be vaccinated persons) - Blended learning to re-start at 30% capacity - Reopening of museums at 30% capacity - 30% capacity for malls and outdoor dining - Opening of cinemas and theaters at 30% capacity
2	June 18	- No more than 20 vaccinated people or 10 unvaccinated or partially vaccinated people to gather outdoors and no more than 10 vaccinated people or 5 unvaccinated or partially vaccinated people to gather indoors - Mosques open for people over 7 with its toilets closed -Wedding parties allowed in hotels and wedding venues for up to 40 people with at least 75% of them should be vaccinated - Gyms operate at 40% (all should be vaccinated persons) - Increase capacity of museums to 50% - 50% capacity for malls and outdoor dining with 30% capacity for indoors dinning - Workplace capacity to increase to 80%
3	July 9	- No more than 30 vaccinated people or 15 unvaccinated people to gather outdoors and no more than 15 vaccinated people or 5 unvaccinated people to gather indoors -Wedding parties allowed in hotels and wedding venues for up to 80 people with maximum 10 of them may be unvaccinated - Public transport, buses, and metro capacity to increase to 50% - Gyms operate at 50% (all should be vaccinated persons) - Blended learning capacity to increase to 50% capacity - Increase capacity of museums to 75% - Private health care to operate at full capacity - Barber shops and beauty capacity to increase to 50%
3.2	August 6	- Remove age restrictions for Mosques and keep maximum capacity - Decrease capacity for public buses to 30% *This phase can be considered as an extension for phase 3*
4	October 3	- No mask wearing requirement in open public places except for Mosques, markets, public events, exhibitions, schools, universities, and hospitals - No more than 50 vaccinated people or 10 unvaccinated people to gather outdoors and no more than 30 vaccinated people or 5 unvaccinated people to gather indoors - Open toilets and ablution places in Mosques - Public transport, metro, and buses capacity to increase to 75% seven days a week - Gyms capacity to increase to 75% (all should be vaccinated) - Schools to operate with full capacity - Private and public sector to operate at full capacity - Traditional markets and museums operate at full capacity - Malls to operate at full capacity - Dining indoor at 75% capacity and outdoor at full capacity - Barber shops and beauty capacity to increase to 75%

Appendix B

Risk-Adjusted Measures for Market Sectors During the Gradual Lifting of Restrictions

Sector	Before phase 1	Phase 1	Phase 2	Phase 3	Phase 3.2	Phase 4
Banking						
Sharp Ratio	-0.075	-0.033	0.063	0.151	0.153	0.276
Jensen's Alpha	-0.005	0.022	-0.007	0.060	-0.002	0.061
Treynor Ratio	-0.058	-0.012	0.033	0.079	0.074	0.137
M2	-0.028	0.006	0.046	0.094	0.097	0.158
Industry						
Sharp Ratio	0.018	0.126	0.073	0.048	0.283	0.071
Jensen's Alpha	0.116	0.108	-0.012	0.007	0.097	-0.051
Treynor Ratio	0.012	0.059	0.032	0.027	0.143	0.039
M2	0.027	0.059	0.049	0.044	0.136	0.065
Insurance						
Sharp Ratio	0.072	-0.101	-0.120	-0.037	-0.250	-0.005
Jensen's Alpha	0.098	-0.032	-0.108	-0.068	-0.114	0.020
Treynor Ratio	0.084	-0.063	-0.074	-0.036	-0.963	0.010
M2	0.060	-0.016	-0.028	0.002	-0.022	0.031
Consumer goods &services						
Sharp Ratio	-0.145	-0.189	-0.227	0.145	-0.164	0.035
Jensen's Alpha	-0.048	-0.064	-0.136	0.043	-0.083	-0.028
Treynor Ratio	-0.119	-0.204	-0.154	0.115	-0.223	0.028
M2	-0.070	-0.045	-0.071	0.091	0.003	0.049
Real estate						
Sharp Ratio	-0.114	-0.696	-0.082	-0.061	-0.065	0.019
Jensen's Alpha	-0.040	-0.265	-0.140	-0.059	-0.096	-0.038
Treynor Ratio	-0.093	-0.425	-0.048	-0.068	-0.043	0.019
M2	-0.052	-0.211	-0.013	-0.010	0.033	0.042
Telecoms						
Sharp Ratio	-0.210	-0.307	0.127	-0.262	0.071	-0.163
Jensen's Alpha	-0.116	-0.170	0.164	-0.166	-0.015	-0.094
Treynor Ratio	-0.479	-0.197	0.133	-0.457	0.053	-7.121
M2	-0.109	-0.083	0.071	-0.109	0.073	-0.040
Transportation						
Sharp Ratio	-0.274	-0.196	0.255	-0.379	-0.118	0.148
Jensen's Alpha	-0.138	-0.057	0.183	-0.212	-0.091	0.060
Treynor Ratio	-0.285	-0.748	0.146	-0.569	-0.084	0.249
M2	-0.147	-0.047	0.123	-0.166	0.017	0.100