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Title:	**The Role of Government Intervention in the Impact of COVID-19 on Stock Returns: An Aggregate and Sectoral Analysis in Pakistan**
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Role of Government Intervention during COVID-19: An Aggregate and Sectoral Analysis of Stock Returns in Pakistan

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Abstract

This paper aims to examine the effects of COVID-19 on stock returns in Pakistan at aggregate and sectoral levels. Moreover, the current study attempts to examine the moderating role of government intervention during COVID-19 on stock returns. Stock returns of seven major sectors of the Pakistan stock exchange (PSX) were selected for the sample, from March 2020-Jun 2021. Therefore, the current study employs the regression model to estimate ordinary least squares (OLS) estimators. This paper contributes to the existing literature on the stock exchange market by examining the impact of COVID-19 while taking into account the moderating role of government intervention at sectoral and aggregate levels. Thus, the findings of this study deduced that COVID-19 had a statistically significant negative impact on stock returns at aggregate and sectoral levels, and government intervention had a substantial mitigating effect on Karachi Stock Exchange (KSE).

Keywords: COVID-19, government intervention, Karachi stock exchange, stock returns, sectoral analysis

Introduction

World health organization (WHO) discovered the first case of COVID-19 on 31st December 2019 in Wuhan city of Hubei province in China. A contagious disease that spread into other provinces of China, and after 3 months, almost 200 nations were affected by it. This virus attacked the human respiratory system, which lead to a more severe effect on people. These underlying medical problems provoked as there was no vaccine produced at that time so the only suggested precaution was to maintain social distancing. To decrease this negative effect of the pandemic and to control the economic downturn, governments of different nations took serious measures related to fiscal, monetary, and administrative policies.

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These measures involved changing the daily routine, precluding flight operations, local lockdowns, quarantines, and suspending all traveling modes, etc.

Therefore, the global economy was affected badly due to these precautionary measures. s These enormous spikes in economic volatility and ambiguity created inflation, unemployment, business failure , reduction in tourism, less investment, while economic development was halted, profit margins were reduced, and balance of trade was unfavorable (Leduc & Liu, 2020). Hence, the crude oil prices fell by 53%. On a global level stock returns started to sink right after the declaration of news about pandemic by WHO on 11th march 2020. As the pandemic was a global concern, it badly affected Pakistan's economy too. Gross Domestic Product (GDP) of Pakistan for the year 2019-20 was -0.4% for the first time in seven decades, and per capital, income decreased to US$300. On 26th February 2020 two cases of COVID-19 were declared, within these few weeks Pakistan stock exchange (PSX) lost 2266 points. Almost 436 billion equity was removed and within a week, market capital decreased by 436 trillion. In this chaotic situation, Pakistan's government played a significant role to moderate the effects of pandemic on the economy.

Most of the researches in Pakistan were related to COVID-19 on an aggregate level as highlighted by Saeed et al. (2021) and Shah et al. (2021). In contrast only a few researches as discussed by Wadani et al. (2021) and Jabeen et al. (2021) were on the sectoral level but they ignored the effects of government intervention, monitory policy in mitigating the effects of COVID-19 on stock returns. Therefore, the primary concern of this paper is to inspect the effects of government intervention, and monitory policy measures such as interest rate and exchange rate on the stock returns of Pakistan on aggregate and sectoral levels.

Additionally, this study aims to estimate the effect of COVID-19 on Karachi stock exchange (KSE) and on other seven major sectors of PSX i.e. transportation, pharmaceutical, food & personal care, technology & communication, oil & gas, and commercial banks and cement sector. Moreover, the current research attempts to examine the moderating effects of government intervention on mitigating effects of COVID-19 on KSE and stock returns at sectoral level.

This paper is further divided and arranged into five sub-sections. Section two covers the literature review, section three discusses the methodology, section four analyzes the results of the current study, and section five concludes the research.

Literature review

With the pandemic outbreak, massive literatures have examined the impact of COVID-19 on stock returns. The theoretical foundation of this current study anticipates on the Efficient Market Hypothesis (EMH) as presented by Fama (1970), which stated, that the security market and its prices change and react to the news and information related to the environment.

Several studies estimated the consequences of COVID-19 on stock markets across the globe. For instance, Okorie and Lin (2021) inspected the impact of COVID-19 on stock returns of 32 countries. They examined stock returns before and after COVID-19. They used the technique of Detrended Cross-Correlation Analysis (DCCA). Therefore, the results of study described that although COVID-19 adversely hard hit stock returns of all the countries but stock returns of Iran and Israel showed high volitation in both periods. Aslam et al. (2020) examined the effects of COVID-19 on stock returns of 56 nations from 15th October 2019 to 7th august 2020 by using Complex network methods. The stock returns data was collected from Yahoo finance website. The result of this research described that there was an adverse effect of COVID-19 on the stock returns of 56 countries. Furthermore, it also revealed that COVID-19 affected frontier and developing markets more adversely than developed markets.

Corbet et al. (2020) researched to document the effects of COVID-19 on Chinese stock returns. By using data of stock returns of Shanghai and Shenzhen Stock Exchanges. He compared before and after time period of COVID-19 with respect to the stock exchange market. Simple regression model was used as a methodology to conduct this research. The results of this research proposed huge adversative impact of COVID-19 on stock returns of both countries. Sansa (2020) examined the effects of COVID-19 of China and USA stock returns by using simple regression model as a methodology. The results of this study vindicated the adverse effects of COVID-19 on stock returns of both of the countries.

Alfaro et al. (2020) researched to inspect the effects of COVID-19 on stock returns of United States on a firm level. They used 4070 firms as a

sample to collect the data. The data was collected from the official website of Bloomberg. Schoenfeld (2020) also investigated and researched the impact of COVID-19 on stock returns of United States. Hence, the results of both studies stated the negative impact of COVID-19 on stock exchange of US. Osagie et al. (2020) and Alade et al. (2020) highlighted the same negative impact of COVID-19 on stock returns of Nigerian stock exchange (NSE).

Alam et al. (2020) also conducted a research to investigate the effects of COVID-19 on the stock market of India over the time period of 24 February, 2020 -17 April, 2020. Stock returns data was collected from the Bombay stock exchange (BSE). In this study, the market model event study methodology was used to study the effects of COVID-19 on the markets. The result of this research describes that there were abnormal and unfavorable effects of lockdown and COVID-19 on the stock returns in Bombay. Dhillon & Tyagi (2020) studied the impact of COVID-19 on Indian stock returns. He examined indexes of NIFTY 50 and SENSEX. He also examined the effects of COVID-19 on 15 sectors of NIFTY 50 and *SENSEX. They tested it through the weight age method. Hence, the results showed that the Indian stock market and its sectors were influenced negatively by COVID-19.

Goh et al. (2021) examined the impact of COVID-19 on the stock returns of Indonesia. Therefore, the study applied the methodology of descriptive statistics to study the stock return statics of a particular time period. The study covers time period of 15 October 2019-15 September 2020. The data for stock returns was taken from the official website of Indonesian stock exchange (IDX). The result of this study proposed that there was a negative impact of COVID-19 on IDX and the economy of the countries.

Pakistan was also struck hardly by the pandemic. Many researchers observed the effects of COVID-19 on stock returns in Pakistan. For instance, Ashraf (2020) examined the stock exchange reaction of COVID-19 on 64 countries, including Pakistan. Therefore, the panel data analysis technique was employed as a research methodology. Thus, the research stated that the stock market declined as the conformed cases increased. Furthermore, the market reacted more hostile with the increase of conformed instances as compared to the death cases.

Shehzad et al. (2021) compared markets of Pakistan with China during and before the COVID-19 period from 4th January 2010-11th May 2019. The data of stock returns were taken from Shanghai stock exchange (SSE) and Karachi stock exchange (KSX). Stock prices were taken from the Yahoo finance website. The result of this study proposed that both of the stock markets were negatively affected by COVID-19 but SSEC performed better than KSE in both time periods. Few researches revealed that although, the global economy was affected by COVID-19 but the performance of KSE was better than other countries. Ahmed (2020) conducted a research to investigate the impression of COVID-19 on the stock returns of Pakistan. To measure the effects of COVID-19, he used variables such as confirmed positive cases, deaths, and recovered people to study the impact of COVID-19 in Pakistan. The outcome of this study proposed that although COVID-19 affected the stock returns. Nevertheless, owing to the increased number of recoveries, KSE performed well after the initial negative impact of COVID-19.

Few researchers showed that one of the significant factors behind the better performance of KSE was government preventive measures and pertinent policies like government funds for small industries and businesses, smart lockdowns, and decreased interest rate etc. Waheed et al. (2020) presented the effects of COVID-19 on KSE. Samples of COVID-19 were composed from the certified website of WHO and the sample of index information was occupied from the official website of PSX from February 26, 2020-April 17, 2020. Saeed et al. (2021) documented similar results, which stated that PSX performed better during the pandemic. Therefore, the stock exchange has become better after the preventive measures of the government. Syed et al. (2022) also suggested that government measures have played a substantial role in the better performance of PSX.

However, estimating the influence of COVID-19 on the stock returns at the aggregate level might influence the effects of the pandemic on stock returns at a disaggregated level. Hence, the performance of different sectors might not be the same as few sectors have been more seriously affected by the pandemic while others were not. He et al. (2020) investigated the consequences of COVID-19 on China's stock returns at sectoral level from 3rd June 2019-13th march 2020. Thus, the findings of this study proposed that various sectors like transportation, mining, and electricity & heating were adversely affected by COVID-19, but other sectors of , information

technology, education and healthcare sector performed better during the pandemic.

Al-Awadhi et al. (2020) performed the research to estimate the impact of COVID-19 on stock returns of China. They He analyzed Shanghai stock market based on different sectors of market capitalization and forging investors. Thus, findings of this study highlighted a negative interaction between COVID-19 and stock market's performance. Furthermore, they analyzed the market sectors including information technology, medicine, beverages, and transportation to study the impacts of COVID-19 on sectoral level.

Mdaghri et al. (2021) researched to inspect the influence of COVID-19 on stock returns of the Middle East and North African (MENA) countries. Hence, descriptive statistics were used as a research methodology to study the statistics of these two countries. Therefore, the researcher analyzed the current study from different perspectives considering the market capitalization, they found that the performance of both small and big firms was affected negatively by COVID-19. While analyzing different sectors, they found that consumer goods, energy and utilities, and industrials sectors were affected adversely; however, COVID-19 affected the industrial and health sectors positively.

In Pakistan, no research has yet been conducted on the sectoral level except Jabeen et al. (2021) and Wadani et al. (2021). They used descriptive statistics quarterly and industrial averages as methodology. Government intervention and policies were not measured. The findings of the current study of Wadani et al. (2021) suggested that pharmaceutical sector performed better in all waves of COVID-19 and the results of the current research of Jabeen et al. (2021) suggested that no herding was inspected in PSX.

Based on the review of the literature, this study fills the gap and suggests the following hypotheses:

H_1: COVID-19 had a significant impact on stock returns in Pakistan (PSX).

H_2: COVID-19 had a significant impact on stock return of transportation, pharmaceutical, cement, food & personal care products, oil & gas, commercial banks, technology and communication sector.

H_3: Government intervention on the impact of COVID-19 has decreased the negative impact of COVID-19 on Pakistan stock exchange.

Research Methodology

This is a quantitative study. Therefore, multiple regression model (MRM) is used as a methodology to study the impact of COVID-19. The depended variable of this research is stock return in Karachi stock exchange (KSE) and stock returns at the sectoral level. Independent variables are COVID-19, Government intervention during COVID-19 (stringency index), interest rate and exchange rate. COVID-19 intensity is measured by the number of total cases.

The sample sectors are significant sectors of Pakistan stock exchange (PSX) index. As these sectors hold almost 54% turnover of stock returns. The daily data of KSE returns has been taken from the official website of yahoo finance, data of stock returns of different sectors of PSX has been taken from official portal of KSE. The data related to COVID-19 and the stringency index has been taken from official website of "our world data[1]". Furthermore, the data related to interest rate, inflation rate, and exchange rate are taken from the State bank of Pakistan (SBP).

To investigate the impact of COVID-19 at sectoral level, major sectors of the Pakistan stock exchange are considered for the current research. These include transportation, the pharmaceutical industry, cement, food & personal care products, oil & gas, commercial banks and technology & communication (Wadani, 2021; Al-Awadhi, 2020; He et al., 2020). The sample period is from March 2020-June 2021.

Econometric Model:

The following econometric model will be estimated to inspect the impact of COVID-19 on stock returns.

$$Y_t = \beta_0 + \beta_1 COVID_t + \beta_2 SI_t + \beta_3 (COVID - 19.SI)_t + \Sigma \beta_i X_{it} + \varepsilon_{it}$$

Where,

[1] https://ourworldindata.org/explorers/coronavirus-data-explorer?facet=none&pickerSort=asc&pickerMetric=new_cases_smoothed&Interval=New+per+day&Relative+to+Population=true&Align+outbreaks=false&country=~PAK&Metric=Confirmed+deaths

Y_t= Stock returns at aggregate and sectoral level.

$COVID_t$=Measured by the number of new cases, fatalities, and total cases.

SI= stringency index to measure the government response.

$\mathrm{COVI} * \mathrm{S}$ = an interaction term to estimate the moderating effect of government response.

β= Parameters of the model.

X_i= set of control variables which include exchange rate, inflation and interest rate.

ε_{it} = Error term.

To select the appropriate technique to estimate the model, initially, we examined the properties of data (stationarity) using a unit root test. Then appropriate estimation technique is employed, depending on the properties of the data.

Results

To conduct the primary analysis of the selected variables under investigation, we plotted these selected variables in Figure 1 and 2. The Figure 1 depicts the total number of cases, new cases, and total deaths which shows the intensity of COVID. Three waves of COVID-19 were clearly visible from the figures provided below. On March 13, 2020, the government of Pakistan pre-emptively blocked its land, sea, and air borders because of the spread out of pandemic. In the third week of March 2020, a nationwide lock-down was imposed. To stop the global spread of COVID-19 all the schools, government offices, commercial centres, markets, and parks, etc. were shut down. On June 14, 2020, the first wave reached its apex and after that, the number of cases and the positive rate began to decrease. According to the National COVID-19 Command and Control Centers (NCOC) the range of positive cases during first wave of COVID-19 was between 18%-23%. The second government implemented smart lock-down reported less number , of cases which gradually started decreasing in early February 2021. In march 2021, positive cases of COVID-19 rose again, the positive cases shot up to 10%-11%, which NCOC declared as a third wave. The locals and government both continued

smart lockdown during the third wave of COVID-19 too (Imran et al., 2021).

Figure 1

Total cases, new cases and total deaths (March 9, 2020 to Jun 30, 2021)

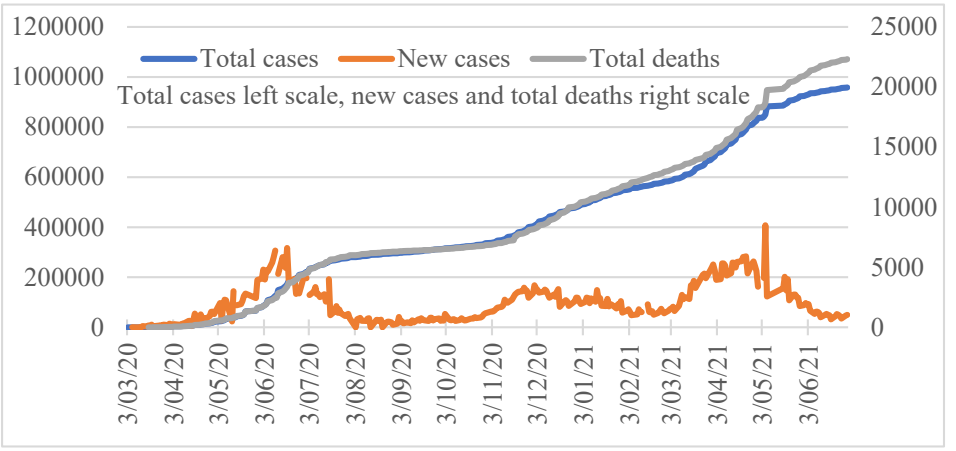
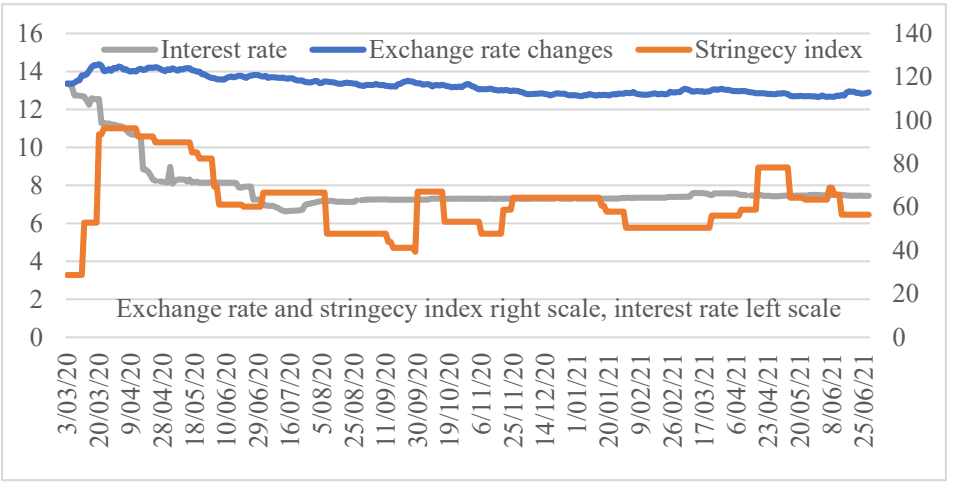


Figure 2

Interest rate, exchange rate, stringency index (March 9, 2020 to Jun 30, 2021)

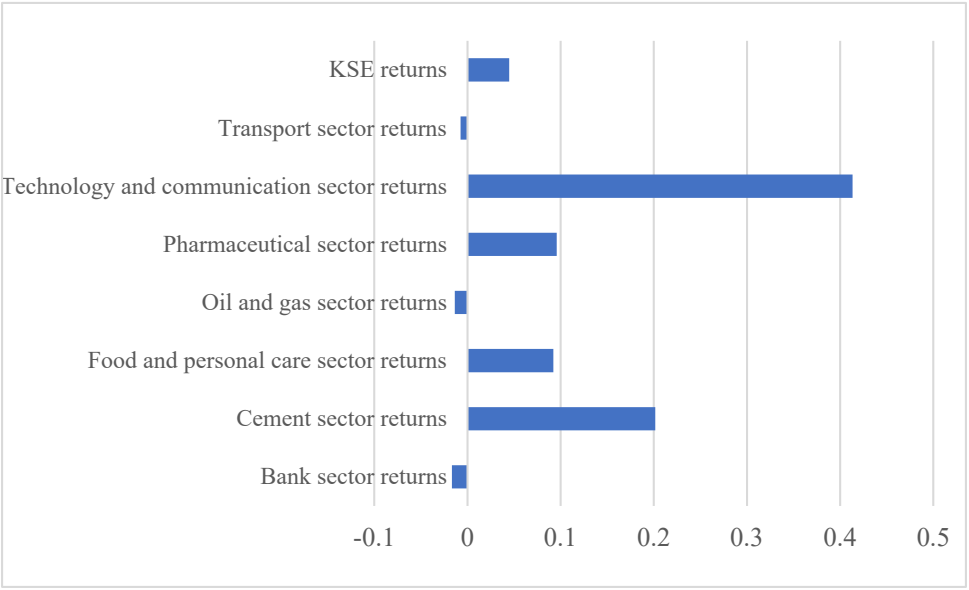


During COVID-19 government played a mitigating role by changing the strategies and policies as highlighted in Figure 2. State bank of Pakistan (SBP) reduced the interest rate from 13%-7%, introduced new debt relief schemes to maintain the borrowers' solvency during this challenging

period. The plotted line graph of the exchange rate in Figure 2 shows that the rate remained relatively stable in the range of 158-165 (PKR/USD). The chart of the stringency index represents the measures taken by the government to control/mitigate the negative impact of COVID-19 on the economy. It showed that the government took strict measures in the beginning. However, later with the subsequent 2nd and 3rd waves of the pandemic, the government effectively opted for smart rather than a strict lock-downs (Pasha, 2022).

Figure 3

Average Returns of Sectors



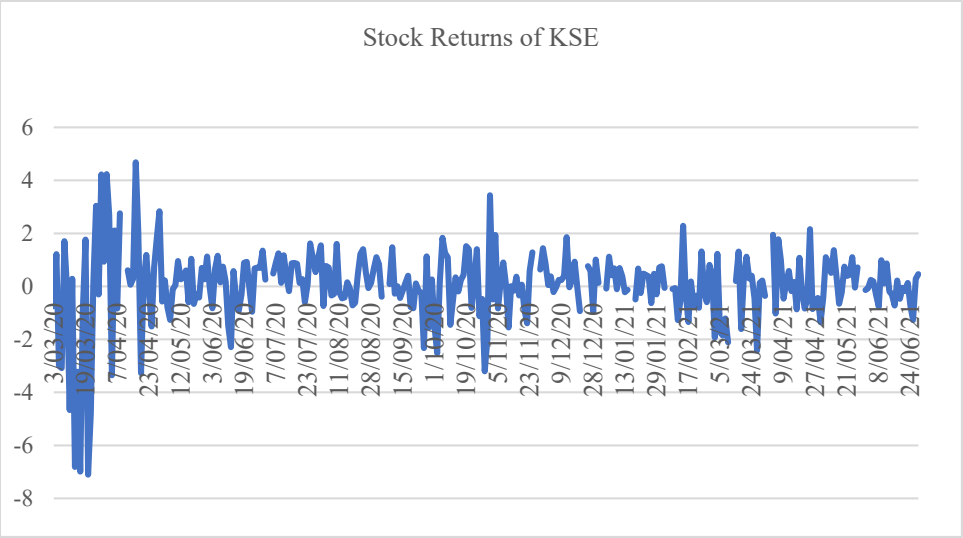
The statistics of the selected variables under study are presented in Table 1 and in Figure 3, average returns of Karachi stock exchange (KSE) and different sectors are plotted in the Figure below. Overall, KSE and other sectors like technology and communication sector, cement sector, pharmaceutical sector, and food and personal care sector had positive average stock returns while on other hand commercial bank sector, oil and gas sector, and transportation sector had negative returns during the pandemic.

Table 1

Summary Descriptive Statistics

Variables	Mean	Std. Deviation	Max.	Min.
KSE returns	0.0448	1.380	4.68	-7.1
Bank sector returns	-0.0167	1.435	4.97	-7.61
Cement sector returns	0.2016	2.338	8.72	-9.25
Food and personal care sector returns	0.0921	1.651	6.7	-7.47
Oil and gas sector returns	-0.0136	2.281	7.41	-7.91
Pharmaceutical sector returns	0.0957	1.651	6.24	-7.46
Technology and communication sector returns	0.4133	2.966	10.82	-8.91
Transport sector returns	-0.0074	1.916	7.75	-9.91
Exchange rate changes	116.0537	4.133	125.88	110.77
Interest rate	7.8789	1.395	13.4	6.63
Total cases	401158.4	281364.6	958408	5.00
New cases	2011.425	1595.705	8495	0.00
Total deaths	8971.031	6260.197	22321	2.00
Stringency index	62.2639	14.99797	96.3	28.70

Figure 4
Stock Returns of KSE



Overall, KSE performed better during the pandemic. Pakistan Stock Exchange, like other countries, had a negative influence during the beginning of the pandemic. Pakistan's government has taken adequate preventative measures and adopted pertinent policies, such as tax relief, community relief, small business relief, and profit margin reductions to control the negative impact of COVID-19. That is why KSE is influenced by the government preventatives measures which benefited the overall economy of Pakistan. The government's precautionary steps indicated that it benefited the stock market in becoming more steady and stable, maintaining the essential growth which has been hampered by the COVID-19 (Shah et al., 2021).

From the Figure 3, it could be clearly assumed that performance of different sectors was not same during the pandemic. Technology and communication was the only profitable sector during the pandemic. The increased demand of video calls and video conferences increased the value of the telecommunication sector (Casey & Wigginton, 2020). Although, the technology and communication sector didn't launch new products that might have affected the sector negatively. However, the technology industry benefited a lot from the growing demand of a specialist software that would allow remote learning, such as Microsoft teams and zoom.

Software that boosted remote working capabilities was in high demand among companies using remote working technologies. Furthermore, there has been a significant demand for the cloud infrastructure services.(Elhini & hammam, 2020).

Figure 5

Stock Returns of Technology and Communication Sector

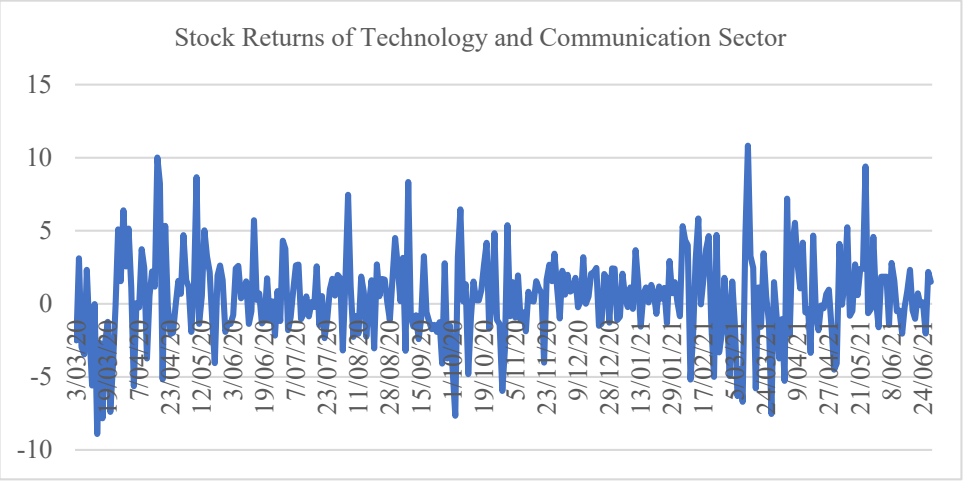


Figure 6

Stock Returns of Cement Sector

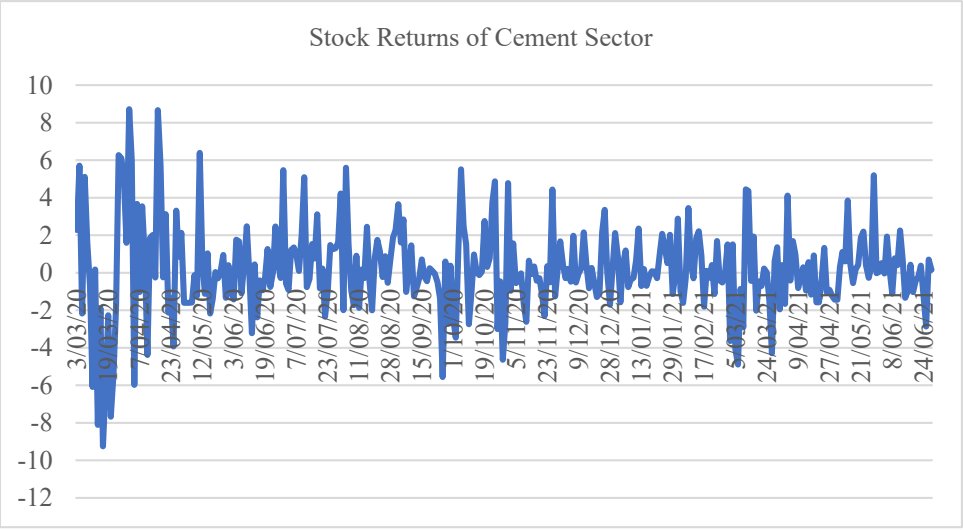
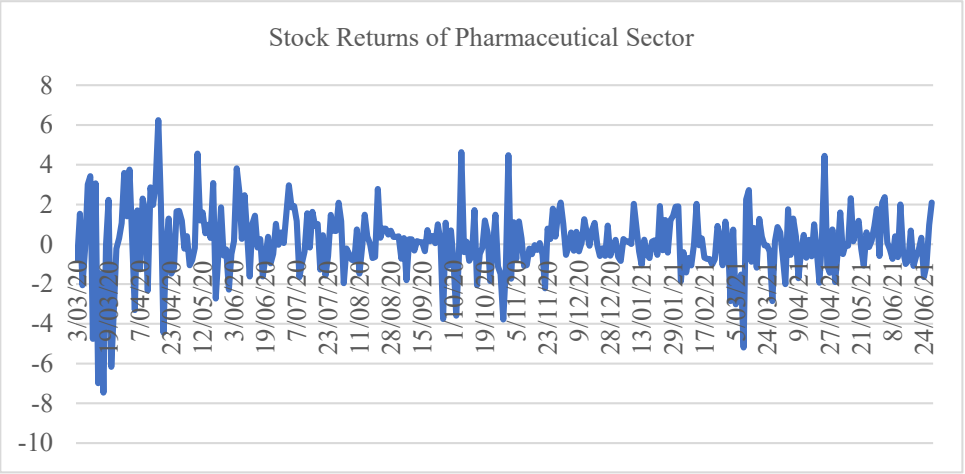


Figure 7

Stock Returns of Pharmaceutical Sector



The cement sector had positive average returns because the government granted tax breaks and additional benefits to the construction and real estate industries (Sareen, 2020). The Pharmaceutical sector also had positive returns as COVID-19 problem was strictly related to medication and medicine. So, the need and demand for health care products also increased. In addition, each provincial government boosted health spending their annual budget. To make healthcare more accessible, the government eliminated all necessary duties on equipments and medicines related to COVID-19 (Ashfaq & Bashir, 2021).

Similarly, the food and personal care sector had positive average returns as food and medicines were the most essential items for survival during the strict lockdowns. Hence, only food and medicines were available for the public. Moreover, to ensure the affordability and availability of the food and other necessary items the government also reduced 2% import tax on dried legumes, granted PKR 50 billion fundings to utility stores, and provided PKR 280 billion for wheat procurement (Dawn, 2020).

Figure 8

Stock Returns of Food and Personal Care Sector

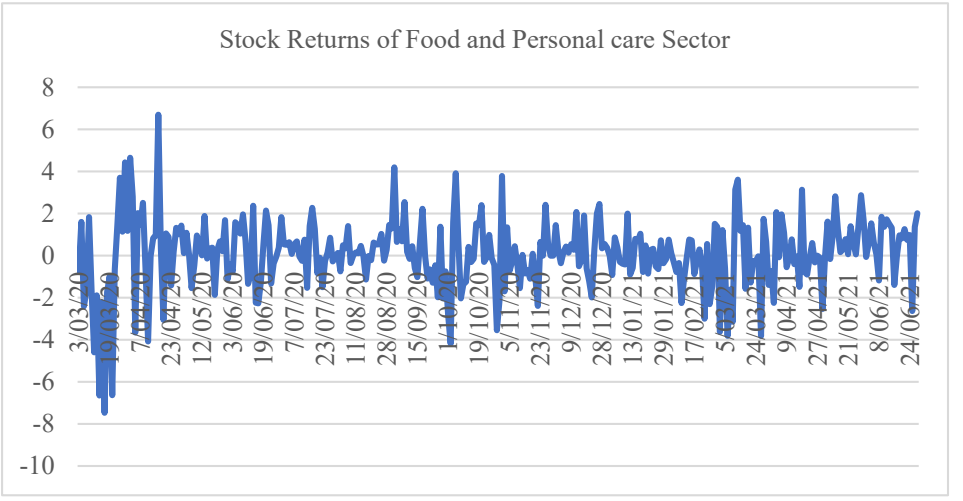
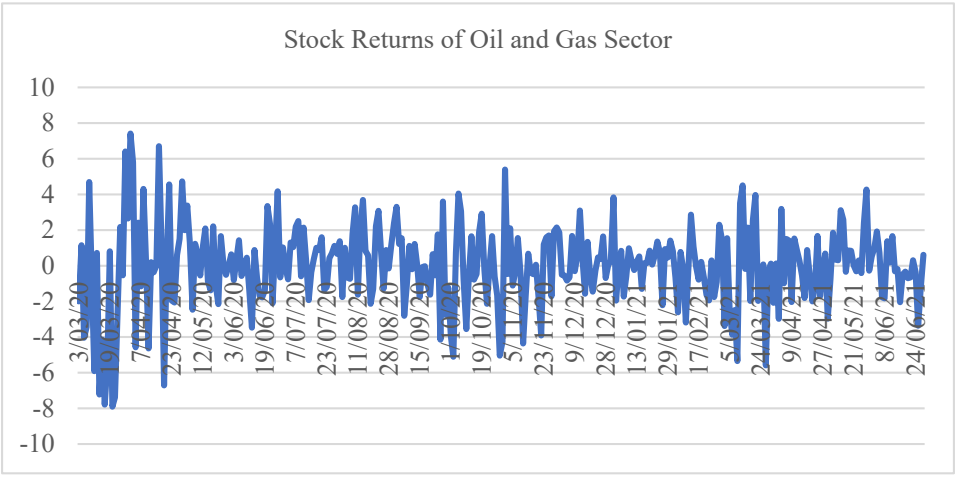


Figure 9

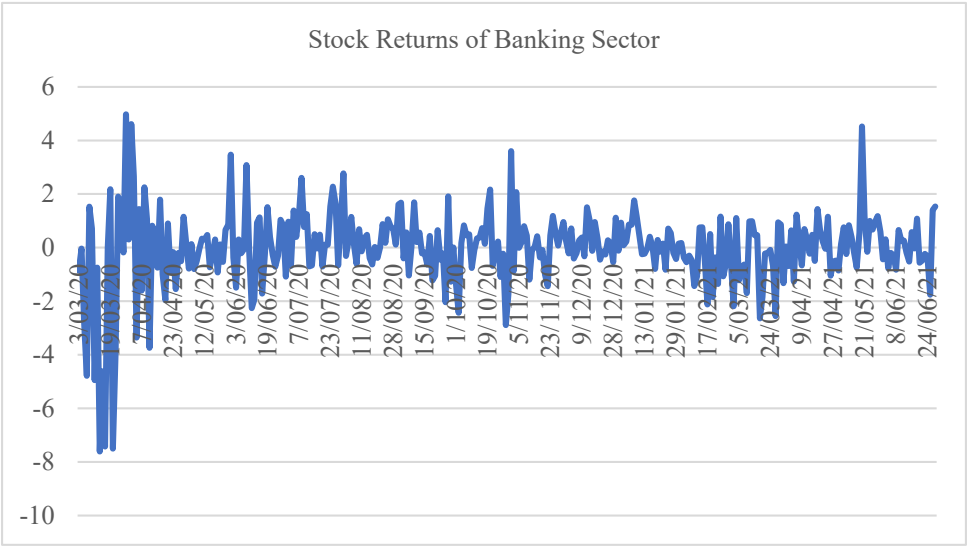
Stock Returns of Oil and Gas Sector



The oil and gas sector had negative average returns during the pandemic. The main reason behind it was the strict restriction of transportation and dropped prices of oil and lubricated items. The government decreased the prices of petrol by PKR 22 and PKR 27 per liter (Sareen, 2020).

Figure 10

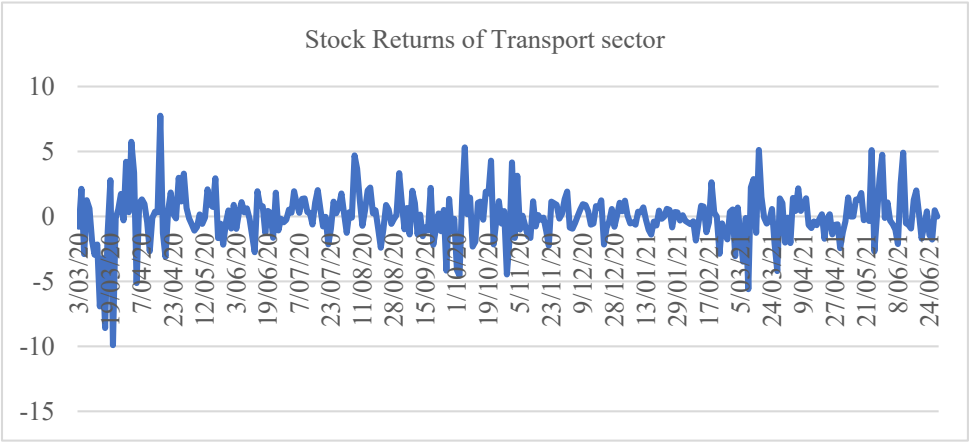
Stock Returns of Banking Sector



The commercial bank sector did not perform well during the COVID-19 period. The State Bank reduced the interest rates from 13.25%-7% to help households and companies (The News International, 2020). However, it still affected the banking sector adversely.

Figure 11

Stock Returns of Transportation Sector



The worst effect of COVID-19 was on the transportation sector. Pakistan International Airlines (PIA) the main airline of Pakistan, was

already facing major loses and probably was going to be bankrupt in a few years. In just two weeks of lock-down, Pakistan's Ministry of Aviation (PMA) estimated that the sector lost up to PKR 25 billion. Due to the lock-downs, Pakistan Railways lost PKR 1 billion weekly (Sareen, 2020).

Hence, Table 2 represents the results of ordinary least squares (OLS) regression model. On aggregate level, the stock returns of KSE and COVID-19 had a negative and significant relation but on sectorial level, cement, pharmaceutical, and transportation sectors had a negative and significant relation with COVID-19. However, commercial banks, technology and communication, food and personal care, and oil and gas sector had a negative but insignificant relation with COVID-19. The results of this current study are consistent with the research by Liu et al. (2020), Al-awadhi et al.(2020), and Wadani et al. (2021). Although, pharmaceutical sector and technology and communication sector had the positive average returns in the pandemic but still COVID-19 affected adversely these significant sectors. As witnessed by the pharmaceutical industry a 50 percent decline in sales was a result of the government's order to prohibit all trade with India and a 300 percent increase in the prices of raw supplies mostly supplied from China. (Sareen, 2020).

Table 2
Regression Results

Variables	coefficient	Prob.	*F*	Durbin Watson
KSE returns				
Constant	22.571	0.000	0.129	1.928
Interest rate	-0.858	0.000		
Exchange rate	-0.118	0.002		
Total cases	-0.275	0.025		
Stringency index	0.074	0.002		
Stringency index * Total cases	-0.004	0.046		

Variables	coefficient	Prob.	*F*	Durbin Watson
Commercial banks sector returns				
Constant	13.429	0.0359	0.112	1.901
Interest rate	-0.612	0.001		
Exchange rate	-0.067	0.093		
Total cases	-0.178	0.158		
Stringency index	0.039	0.111		
Stringency index * Total cases	-0.001	0.506		
Technology and communication sector returns				
Constant	44.778	0.000	0.075	1.905
Interest rate	-1.334	0.001		
Exchange rate	-0.272	0.001		
Total cases	-0.392	0.140		
Stringency index	0.155	0.003		
Stringency index * Total cases	-0.009	0.045		
Cement sector returns				
Constant	55.230	0.000	0.103	1.710
Interest rate	-1.625	0.000		
Exchange rate	-0.305	0.000		
Total cases	-0.715	0.000		
Stringency index	0.149	0.000		
Stringency index * Total cases	-0.009	0.007		

Variables	coefficient	Prob.	*F*	Durbin Watson
Pharmaceutical sector returns				
Constant	18.058	0.018	0.045	1.975
Interest rate	-0.654	0.005		
Exchange rate	-0.082	0.086		
Total cases	-0.387	0.010		
Stringency index	0.035	0.237		
Stringency index * Total cases	-0.001	0.705		
Food and personal care sector returns				
Constant	22.104	0.003	0.086	1.725
Interest rate	-0.687	0.002		
Exchange rate	-0.139	0.003		
Total cases	-0.153	0.300		
Stringency index	0.086	0.003		
Stringency index * Total cases	-0.005	0.050		
Transport sector returns				
Constant	22.124	0.012	0.058	1.921
Interest rate	-0.901	0.000		
Exchange rate	-0.104	0.059		
Total cases	-0.343	0.049		
Stringency index	0.062	0.070		
Stringency index * Total cases	-0.003	0.263		

Variables	coefficient	Prob.	*F*	Durbin Watson
Oil and gas sector returns				
Constant	30.844	0.003	0.068	1.787
Interest rate	-1.196	0.000		
Exchange rate	-0.155	0.017		
Total cases	-0.398	0.053		
Stringency index	0.098	0.014		
Stringency index * Total cases	-0.006	0.086		

Moreover, the exchange and interest rate had negative but significant effects on the stock returns of KSE and on other different sectors. However, commercial banks, pharmaceutical, and transportation sector had negative but insignificant relation with the exchange rate. In response to the pandemic, the SBP implemented a number of policies, the most important of which was lowering the interest rate from 13.25%-7%. For so long enterprise in Pakistan were demanding reduction in interest rate as high interest rates were barriers for doing business. Therefore, the SBP resisted the decision earlier because of the high inflation rate but with the outbreak of COVID-19's on March 16, 2020 the SBP was compelled to decrease the interest rate by 75 basis points. Later after a week , the rates were reduced by 150 basis points and then after three weeks the rates reduced by 200 basis points.(Sareen, 2020).

Government intervention had significant positive effects on the stock returns of KSE and other sectors like technology, food and personal care, and on the oil and gas sectors. The government intervention mitigated the effects of COVID-19 on overall KSE and sectoral returns such as the technology and communication industry and the cement sector. They organized the Ehsaas programme for cash support when limitations and lock-downs were initially the mainstay of response and after that they took the decision to revive the economy and shifted toward strategic smart lock-downs. Government had given a lot of tax reliefs, community relief, small

business relief, and reduced the interest rates. All these actions protected Pakistan from the terrible costs of destroying the economy.(Bhutta, 2021).

Conclusion

COVID-19 has affected the economy globally. Therefore, this pandemic became a major catastrophe that left the world in a deep depression. Economies experienced significant loss and downfall during this disrupt situation. Hence, different sectors like manufacturing, services, tourism, educational institutions, aviation, finance, and many other economic sectors suffered a lot because of the unpredictable circumstances during COVID-19. Pakistan's economy is indeed vulnerable and since the outbreak of this contagious disease, countries are still struggling globally to maintain their economy. This also affected the Pakistan's economy badly which was contracting, unemployment rate was rising, and numerous other industries were experiencing severe crises during the pandemic.

Since January 2020, Pakistan's stock market has experienced an unfavorable situation. The KSE has experienced both positive and negative tendencies during COVID-19. Therefore, to maintain KSE performance on the desired market standards , market halt and other measures have been used to maintain the financial imbalance. Additionally, KSE performance improved despite the fact that world's economies are battling to defend themselves from the deadly pandemic's consequences. Hence, in this regard, Pakistan's economy maintained the liquidity and commercial market to face the adverse financial conditions during COVID-19.

This paper empirically investigates the impact of COVID-19 on the Pakistan stock exchange (PSX), analyzes its various sectors, and studies the unprecedented conditions that destroyed the global economy while highlighting the constraints of government interventions. Thus, the results of this study state that COVID-19 escalated the effects of COVID-19 not only on KSE but also on various other sectors of Pakistan. However, government intervention mitigated the adverse effects of COVID-19 by providing fund relief and by reducing interest rates

The effects of COVID-19 were not the same on other sectors of PSX. Technology and communication sector was less effected by COVID-19 as compared to other sectors of PSX. In order to prevent the epidemic from spreading further, majority individuals and businesses shifted their activities in remote system. Additionally, it is observed that cement,

pharmaceutical, and food and personal care sectors were also less affected by COVID-19 because of the tax reliefs and other subsidies given by the government to these specific sectors. Moreover, in this tensed scenario only food and medicines were allowed for the public during the pandemic for their survival and basic needs. However, oil and gas, banking, and transportation sectors were negatively affected by COVID-19 since lock-downs damaged the day to day services of these sectors. Thus, this current study highlighted the impact of COVID-19 not only on Pakistan stock exchange but also on other sectors of the economy.

This paper also investigates the negative affect of COVID-19 on KSE and other different sectors while highlighting the government interventions which played a remarkable positive role in mitigating the adverse effects of the pandemic. Therefore, the smart lockdowns, tax break, subsidies, and other government policies weakened the adverse effects of COVID-19 on stock returns and on the economy of Pakistan, particularly concerning the cement and technology and communication sectors.

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