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ASSESSING THE IMPACT OF COVID19 PANDEMIC ON THE STOCKS AND COMMODITY MARKET PERFORMANCE AND SUSTAINABILITY. AN EMPIRICAL EVIDENCE FROM PAKISTANI CONTEXT

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Abstract
This research is aiming at studying the effect of COVID-19 outbreak on Pakistan's stock and commodity markets. This study has involved the use of secondary data regarding the daily closing prices of the Pakistan Stock Exchange index (PSX) and closing prices of gold and oil from the Pakistan Mercantile Exchange (PMEX) of Pakistan. The reason for assessing these commodities is that they are highly volatile as compared to other factors. However, results of this study indicated that COVID-19 pandemic has got significant and negative effect on Oil prices and the stock market performance as well. On the other hand, the study also found that there is a noticeable impact of COVID-19 on gold prices. The overall outcome of this study show that the occurrence of COVID-19 caused the stock market to drop temporarily but then it began to stabilize gradually. In addition, the findings of this research can aid speculators to forecast the future of the stock and commodity markets in the face of the epidemic.
Keywords: COVID-19; Stock Market; Commodity Market; Pandemic

1. INTRODUCTION

A state of being in a pandemic situation proves to be detrimental for countries in the world as causes an economic slowdown due to the preventive measures taken by the government such as lockdown. This occurrence of lockdown causes economic activities to halt as a result, creates an increase in the unemployment level. The novel virus namely coronavirus also known as COVID-19 showed its outbreak in 2020 which appeared as the highly unusual type of pandemic. In response to the serious outbreak of COVID-19, The World Health Organization (WHO) advised for taking serious precautions which included isolating the infected individuals and to wear face masks which help in preventing the spread from individual to individual. This outbreak made many countries observe the lockdown for prolonged periods which resulted in the adverse impact on the well-being of people. Moreover, they lead to increased levels of anxiety and depression, finally affecting the consumption behaviors of the people. In addition, this also caused an adverse impact on the credit availability and labor supply and demand in the labor market

Extensive research in 2020 made policy makers seriously concerned about the possible effects of COVID-19 on the global economy. International risks are seriously brought under consideration by economic policy makers as these risks leave a long-term effect on the economic and the political condition of the country. A very limited deal of research has placed its attention towards the association between gold, oil and the economic instability occurring at the global level. In an economic system, oil and gold prices are deeply associated with each other due to which their effect on the economic system is heavily magnified. This indicates the importance of how geopolitical concerns affect prices of gold and oil (Beckmann et al., 2019). Recent financial records create the need for further research on understanding how the pandemic situation affects the prices. Based on the existing literature gap, researchers

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have decided to study the link of pandemic effect on the link between stock market and commodity prices in a Pakistani context and to compare the volatility of the Pakistani stock market. In the recent past, the prolonged lockdown due to COIVID-19 has evidenced the economic slowdown which is followed by the increased level of uncertainty in the commodity prices and the overall financial markets as well. .

The volatility of goods may lead to bad results in financial business sectors; it is believed that the rise in oil, gold, and stock value instabilities can generate a hazardous venture condition. The price volatility of commodities adversely affects financial market performance. Hence, it is necessary to study the interplay between international trade and the performance of the global financial markets.

According to the previous research gold is the only item the price of which has remained stable throughout the occurrence of COVID-19. Moreover, a great deal of research has focused on the effect of pandemic on different regional markets. It is evident from research that effects of COVID-19 can take place on volatility of commodity prices and can also affect the prices of gold and oil.

Short-term events, for example, COVID-19 effect on the gold and oil markets, may possibly leave a remarkable effect on the market prices. After COVID-19, the economy began to start its recovery phase due to which consumers started to gain confidence in markets. This led consumers to increase their spending in gold on other valuable goods.

Because of having disparity in risk tolerance, regional objectives and personal preferences, the participating forces in same area possess different needs for the market data. Owing to these differences, this is a herculean task to generalize about the kinds of information required by different market participating forces. Although, the method of overflow file performs well for time-space based enquiries, it miserably failed at explaining the data overflow strength between variables. Most of the past literature has focused on the limited regions whereas researchers are now showing increased attention towards the South Asian economies as these economies are emerging as the strongest economic systems in the world.

Meanwhile, emerging economies are highly sensitive to COVID-19. Many countries have played an important role in oil, gold and the stock markets. The impact COVID-19 on the South Asian gold and oil markets is needed to be weighed and studied carefully (Bartlett et al., 2016).

South Asian economies are of great importance from multiple aspects for example South Asian are now believed to be the emerging economies and almost 25% of the total world population is living in the South Asia. Besides that, South Asia is a sub-continent where the population density is very high. Due to this, South Asian economies are becoming a centre of increased attention for research. South Asian countries such as Bangladesh, Pakistan, India, are standing separate from the rest of the South Asian region because of having the high level of incidence of recently known COVID-19 affecting their populations (Neralić and Kedžo, 2019).

This has made researchers curious about learning more about this novel virus because of its deeper effects created on the economic and the financial condition of the country. The present literature has evidenced gap which is being filled by the study conducted on the impact of lockdowns and compares the data from subsequent waves of the COVID-19 in the South Asia (Banker et al., 2020).

2. LITERATURE REVIEW

The present body of literature does not provide enough evidence to develop the thorough understanding regarding the impact on commodity and the stock markets created by the infection waves and lockdowns particularly belonging to COVID-19 (Ciotti et al., 2020). In the past, the hospitality sector of China was badly affected by the waves of severe acute respiratory syndrome (SARS). Moreover, Ciotti et al. (2020) and Ambler et al. (2001) have maintained that the financial markets in China experienced the declining performance due to the anxiety and terror in investors. This caused the behavior of panic selling as investors were trying to take out their investments from the financial markets which led to the negative effect on the Chinese economy (Ambler et al., 2001). The impact of corona virus on the performance of stock market was studied in the research conducted by (Al Ali, 2020). Moreover, the study showed that COVID-19 appeared to be a strongly influencing factor on the financial markets of the developed economies. Furthermore, findings of Al Ali (2020) were also confirmed by study carried out by (Chen et al., 2021) presenting that during the pandemic times stock market volatility was highly searched on

Google. According to Twite (2002), both investors' fear and the occurrence of pandemic have an adverse effect on the financial market performance.

Pandemic situation negatively affects the demand of goods and financial securities for example Tam et al. (2020) maintains that the economic condition of Hong Kong followed by the striking of the SARS experienced the decline in the growth rate as the demand of goods services dropped drastically on domestic and international level as well. Similarly, study conducted by (DeLisle, 2020) points out that SARS epidemic which took place in 2003 slowed down GDP by $3 trillion. Moreover, Dynan (2018) took 214 Chinese cities in his study and revealed that consumers decreased the demand in the country in course of the COVID-19 outbreak. The city of Wuhan received the highest level of drop in the demand of goods and services. (Albulescu, 2020) brought the use of Auto-Regressive Distribution Lag for analyzing the correlation that is existing between the occurrence of pandemic and the demand for petroleum products and financial instability in the United States. Moreover, the findings of Albulescu (2020) were confirmed by Formaro and Wolf (2021).

Mao (2021) presents the fact that investors sell everything when they see that the economy is facing the pandemic condition. Mao (2021) further argues that investors decisions are largely affected by the economic uncertainty and outcomes may be more complex. Classical Theory of Investment assumes that the self-interest of investors primarily motivates them to invest in financial markets. Deciding on the rationality of the investment decision making depends upon the behavioral economics which mainly proposes that the investor's decision making is highly affected by the level of uncertainty.

In this research, the use of uncertainty theory and the demand theory have been brought to assess the link between pandemic occurrences and their effect on the commodity and the financial markets. In response to the widespread of COVID-19, many sectors of the economy halted their operations hence affecting demand for goods and services (Scarpellini et al., 2019). Specifically, this research will mostly be based on demand theory as it is concerned with assessing the impact of lockdown on the prices of crude oil and gold.

Most economists are of the view that commodity and financial markets are strongly derived by pandemic conditions because it affects the investor's decisions to invest in markets which determine prices of the financial securities and commodities. Changes in the worldwide goods prices are based on different factors and fluctuation of supply may also possibly affect the stock and the conversion standard of oil. The prices of crude oil leave a long-term impact on the economic conditions of a country and its financial markets as well. Gold plays enable economies to hedge against the severe liquidity crisis which has been experienced by many emerging economies in the world.

Additionally, it is argued that the decrease in the oil price is also caused by factors such as investor fear financial slumps and the chaotic situation prevailing in the global economy (He et al., 2020). Moreover, further increase in prices of gold can be anticipated as the gold prices have continuously displayed an upward trend in global markets. Stock markets can somehow react to the impact created by COVID-19 infection (Vasylieva et al., 2021). The price of crude oil also affects the level of inflation in the country in the sense that when the price of crude oil goes up, prices of all finished goods increase. This shows that oil is a basic commodity which acts as backbone for an overall economy of the country. In this sense the purchasing power of the people can be linked to the crude oil prices. The government feels more financially burdened when the oil price increases in the international market because it will take more money to finance the import of oil. As a result, government will increase its focus on the stockpiling of the gold because this helps in hedging against the liquidity crisis (Reddy and Narayan, 2018). Moreover, this makes the government go for those markets which are not familiar. Since, international market uses the US dollar as a medium of exchange, fluctuation in the value of the US dollar deeply affects the crude oil prices. It might be possible that the US economic slowdown may possibly cause oil prices to increase which may make people to increase their tendency towards the gold.

Resulting ripples in the oil market create a significant effect on the financial markets. A very limited deal of research has studied the interplay between the value of gold, the oil industry and the stock market. Recent studies point out the fact that fluctuations in the gold prices have proved to be disastrous to the economies of Pakistan, India and Bangladesh. Moreover, existing research has also focused on the assessment of the direct causal relationship that is present between the price of gold and the possible gains from exchanging currencies.

Kaakeh et al. (2021) presents that the pre-pandemic situation does not have any significant effect on the trade rates. Results showed that it is highly difficult for countries to face the fluctuations in their currency exchange rates which significantly determine the oil prices. Mustajoki (2019) has argues that oil prices act as a primary determinant in performance of commerce in South Asian economies.

3. METHODOLOGY

To examining the effect corona virus on Pakistan stock exchange and the commodity market of Pakistan, we have attempted to obtain the closing price data available on daily basis in the Pakistan Stock Exchange index market (PSX). Besides that, the closing prices of crude oil and gold have been taken from the Pakistan Mercantile Exchange (PMEX).In this research, only crude oil and gold prices have been assessed as they act as more volatile as compared to the other factors. Moreover, there is a larger proportion of investment that is made in specific sorts of commodities. This research has also involved the use of comparative analysis between the COVID-19 waves and the performance of stock markets in the context of South Asian economies.

4. DATA ANALYSIS AND FINDINGS

4.1. Descriptive Analysis

Table 4.1: Summary Statistics

STATISTICS	LG	LCR	SM
Mean	10.81156	8.720522	20536.90
Median	10.82381	8.724793	20827.17
Maximum	12.90524	10.05848	47806.97
Minimum	8.142383	7.606318	1100.230
Std. Dev.	1.169999	0.496609	16300.01
Skewness	-0.525403	0.300732	0.059051
Kurtosis	2.816465	3.160133	1.442399
Jarque-Bera	2.133520	0.726380	4.575131
Probability	0.344122	0.695454	0.101513

Descriptive analysis in which Gold (G) Variable is significant after taking logarithm so their P value is < 0.05 data is accepted means normal distribution their skewness and kurtosis also better, Crude Oil (CR) is significant with taking logarithm JB P value is < 0.05 data is accepted means normal distribution also skewness and kurtosis are better Stock Market (SM) variable is already significant without any diagnostic test their P value is < 0.05.

4.2. Stationary Test

Table 4.2: ADF Uuni Root Test

	Level	1st Difference	2nd Difference
LG	0.9722	0.0758	0.0058
LCR	0.4422	0.0722	0.0027
SM	0.2511	0.0002	

As shown in table 4.2 (LG) Gold variable is significant 2nd difference where P value > than 0.05 by taking logarithm for normal distribution, (LCR) Crude oil variable is significant at 2nd difference with taking logarithm LCR for normal distribution, (SM) Stock Market variable significant at first difference their P value > 0.005.

4.3. CORRELATION TEST

Table 4.3: Correlation Test

	SM	LCR	DLG
SM	1.0000	-0.0137	0.2188
LCR	-0.0137	1.0000	0.1622
DLG	0.2188	0.1622	1.0000

Correlation test is used to check relationship between variables we see at table 4.3 variables are not highly correlated to each other. In correlation values in between -1 to +1 are accepted well. In our data mostly values are in between -1 to +1 which means data is accepted.

4.4. Regression

Table 4.4: Regression Results

	Pooled OLS Method		Random Effect		Fixed Effect	
Variable	Coefficient	t-Statistics	Coefficient	t-Statistics	Coefficient	t-Statistics
Constant	165143.7	3.2042	17625.49	0.7312	-50816.39	1.6565
LG	14124.07	5.8186	7634.70	5.3321	1322.60	0.7251
LCR	-34093.15	-4.4242	-9131.51	-2.7069	6542.47	1.6586
Adjusted R^2	0.4108		0.1636		0.6901	
F-Stat	0.006		0.008		0.000	
DW	0.4252		0.2086		0.4493	

The result of this study was obtained by using panel Least Square (LS) model for regression analysis. In Table 4.4 by taking dependent variable Stock Market. By taking logarithm of gold (LG) variable P value (0.0000) is good and significant in pooled ordinary effect in Fixed effect P value is (0.4726) is insignificant which means it's effected towards DV and Random Effect P value is (0.0000) is significant as same as pooled ordinary effect. By taking logarithm of Crude Oil (CR) P value is (0.0098) significant in pooled ordinary effect, in random effect and fixed effect P value is insignificant and significant in random effect which means crude oil positively effect on DV.

4.5. Auto Correlation Test

Table 4.1: Auto Correlation Test

Breusch-Godfrey Serial Correlation LM Test:	
Null Hypothesis: No serial Correlation at up to 2 lags	
F-Statistics	4.254648 Prob. F (2, 10) 0.0460

To verify this issue In addition to this, the Breusch Godfrey (BG) general test for autocorrelation is performed on the data, which demonstrates the existence of autocorrelation.

5. DISCUSSION AND CONCLUSION

This research seeks to understand how the COVID-19 pandemic has affected stock and commodities markets in South Asian countries particularly hard hit by the pandemic, with a focus on India. Descriptive analysis, an ADF unit root test, correlation and regression tests, and autocorrelation were used to achieve the stated goals of this study. It appears that the widespread spread of the coronavirus has a significant and unfavorable effect on the stock market in Pakistan, as concluded by the study. As lockdown was being implemented, stock prices plummeted due to weak demand for herbs, which had already been hurt by the uncertainty caused by the pandemic. As a result of the epidemic, income from herb sales had been declining and demand had been inadequate. Further, international financial institutions took preventative measures against the COVID-19 pandemic by instituting interim financial safeguards. With less constraints on their resources, for instance, central banks can extend more loans to firms. Evidence from academic studies shows that this has a positive effect on the real economy.

Contradictory findings from a study of the commodity market show that the coronavirus has significantly impacted oil prices while having the opposite effect on gold. One can extrapolate from this that the theoretical foundations of the demand theory are supported by the result. Since COVID-19, gold prices have risen because investors are buying the precious metal as a haven from the political and economic uncertainty that has arisen because of the virus. Gold's liquidity also exceeds that of debt or property securities, adding to the metal's already high value. On the other hand, gold tends to increase in value when stock markets fall and decreases in value when stock markets rise.

Given the current state of events in such countries, it is reasonable to assume that the long-term economic survival of some South Asian countries will be precarious. First and foremost, COVID-19 represents a global humanitarian crisis. As a result, there has been a crisis in the long-term health of the economy and the banking system. The importance of sustainability to an organization's long-term success is becoming increasingly recognized by both businesses and investors. It was shown that the stock and commodity markets were hit harder by the epidemic in the short term than in the long term. Considering this, investors should not act hastily but rather with the utmost caution. These results add to the body of knowledge by providing hard data on how COVID-19 affected the Pakistani stock and commodity markets and those of other South Asian countries.

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