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Stock Market Performance and Foreign Direct Investment (FDI) during Covid-19 in Emerging Market

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ABSTRACT

This study analyses the performance of the Pakistan Stock Exchange (PSX) during the Covid-19 with Foreign Direct Investment (FDI). The stock markets are considered as the indicators of the economy. The Covid-19 pandemic outbreak from China in December 2019 and became a global virus within no time. The Covid has affected the economies negatively, although the level remained different in different economies. The financial sectors of the developed markets also got affected by the Covid pandemic as it has affected the global economies. In this study, Foreign Direct Investment is taken as the control variable to analyze the performance of PSX during covid-19. The Covid-19 positive cases are taken as a proxy for the Covid-19 data set. The sample data on weekly basis for stock prices in the Year 2020. The results indicate the Covid-19 has negatively affected the PSX, while FDI has a positive impact on the PSX performance.

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Introduction

Covid-19 effect on the stock markets has been widely studied in recent time. The Covid has affected different economies in different ways. Some economies performed better while the majority was adversely affected. The financial sectors of the developed markets also got affected by the pandemic of Covid as it has been affected globally in almost every economy. The Covid has affected the stock markets in different ways and the results are also different in different analyses. Covid has affected the stock markets of developed markets in a significant way and in these strong economies; the impact of Covid can be seen easily in their performance and market analysis. The portfolio managers, investors, and researchers have major concerns regarding the crude oil market and stock markets volatility. Even in G7 countries, plunged type volatility is experienced in the stock markets and crude oil market. Furthermore, due to hedge in the market, fluctuations seen in the prices of crude oil. In history, certain catastrophic events such as earthquakes, natural disasters, viruses, terrorist attacks, etc, occurred from time to time that affected the stock markets of different economies. The effects of these catastrophes were direct or indirect and either positive or negative. Covid-19 has affected the financial sector of the global markets. According to the investors' perspective, the stock markets during the pandemic situation not performed well in the emerging economies that is the main reason the investors withdraw their investments however in the case of the strong economies, the performance of the financial sector has not been affected as much as it was predicted. However, the policies to reduce the spread of the pandemic have positively affected the performance of the stock markets. The impact of the Covid-19 can be seen in the form of instability in the stock market (Hong, Bian, & Lee, 2021). The impact of Covid 19 on the financial sector has been considered an important aspect for investors and policymakers. Stock price validity in the US market after the Covid 19 situation has much fluctuated and that is why the return of the stock markets was not consistent. After the Covid 19, the US stock market returns predictability is highly affected due to uncertainty and high risk present in the market. The volatility in the stock market prices is due to the Covid situation present in the economy. There are many studies in which it is explained that how the stock markets have been affected due to volatility in return.

The investors closely watch and monitor the performance of the stock markets. Different external and internal factors contribute in the stock market performance. The external factors are not controllable by any individual firms but these macroeconomic variables or factors can be controlled by some policies and reforms by the government. On the other hand, the internal factors are those which can be due to firms' sources. Foreign Direct Investment is the cash inflow in the economy other than the investors from outside that economy. FDI can be the sum of investment of earnings, equity capital, long-term capitals, and short-term capitals as per balance of payments. FDI is an investment made by any entity or company in another company or entity. Direct investment has significant influence on the firms company rather than indirect investment. FDI is considered a better option and can be increased with fewer restrictions, strengthend macro economic stability, privatization of state-owned enterprises and reforms in the domestic financial system, and most importantly the incentives for taxes. These factors contribute largely in inflow of heavy FDI. Increased FDI in any economy, helps in enhanced employment opportunities as well better GDP, and in turn riaised per capita income. FDI has a direct impact on the stock market performance. FDI being having positive impact, is considered as a major contributor in the stock market performance. In developed countries, FDI is movement is much easier, so firms in those markets can easily availe the benefits of FDI. The reason of this is, the stability of capital markets in developed economies. However, in the case of developing economies, the ratio of foreign investment is relatively less, due to instability and other variables in the host economies.

In the case of Pakistan Stock Exchange, the stability has always been threaten by various factors, however instability lasts for shorter time period. That is the reason FDI has been increased overtime at PSX. In developed economies, the stock market is much more established and operating in organized forms. While in under developing economies, the stock markets are still progressing. The stock markets are best known for determinants of the economy. The stock market reflects the economic picture in a very clear way as from other determinants of the economy. In the global markets, the Pakistan stock exchange is known as the fast-growing market. The benchmark in PSX is KSE 100 Index. During Covid-19 KSE 100 index crossed 40,000 points by the end of year 2020. The number of firms listed in PSX is near 800 with a capital of 700 billion PKR and still, the number is increasing year by year. PSX has also been considered a relatively liquid market. The listed companies in PSX are approximately 800 and actively traded companies are 720. Like other stock markets, various affect PSX too, such as the economic condition of the country, exchange rate stability, mergers on large scale, relationship with the neighboring countries, FDI and some other macroeconomic factors.FDI has played a vital role in growing the stock market performance. Pakistan Stock Exchange, PSX is considered as a more liquid stock market in the global markets. FDI is one of the important figures in keeping the PSX constant growth. A gradual increase in FDI is witnessed at PSX and it reached to 2.06 billion $ by end of year 2020. FDI has an effective role in the growth of PSX. The major sources of FDI in Pakistan are the USA, China, UK, UAE, and Netherland. Most of them have invested in financial business, Oil & Gas sector, and the telecommunication sector. The main objective of the study is to investigate the performance of PSX during covid-19 alongwith FDI during the covid sample period of 2020. This study helps in determining the trend of stock market performance due to FDI and Covid-19. The policymakers and government may get the idea of assessing the impact of pandemic and FDI on the stock markets.

Literature Review and Hypotheses Development

This study is based on the analysis of the Pakistan stock exchange during Covid-19 situation by using controlling variable Foreign Direct Investment. Recent studies indicated the performance of the stock exchange due to Covid-19 and FDI. The stock market being part of the capital market, provides platform for generating the capital for the listed companies by frequently buying and selling of the shares. The major function of the stock market is to show the reflection of the economic condition of the country (Layson, 2016). According to Gay Jr (2017), the stock markets of any country plays vital role in showing a clear picture of the economy and to guage the economic condition of any economy. An increasing trend in the stock markets indexes indicates the progress of the economy and vice versa. A good performing stock exchange attracts the investors. Stock market performance is affected by various internal and external factors (Adam & Tweneboah, (2008). External facrors are beyond the control of individual investors, however, the government and policy makers' intervention by taking appropriate measures may help in eliminating and lowering the effect of these facors. Some internal factors are controllable by management and dictors, such as insider information, companies' financial information (Sharafat, 2016). The economic condition of the country affected by government policies which ultimately affect the stock market. The impact of external and internal factors is lower in developed economies while higher in the developing economies (Sarkar, 2011). The performances of the stock market can be predicted through mostly the price and returns volatility. They explained that the variance in the stock prices and stock returns are mostly two types in nature. Some are small and some are large. The small changes are mostly due to the information flows and shifts in liquidity. While the higher jumps are due to the major events in the economy and macroeconomic variables are responsible for that (Corrado & Jordan 2016).

Foreign Direct Investment (FDI) plays a vital role not only in the economic development but in the stock market too. Increased FDI results in greater employement opputunities (Abel & Nikki 2011). Oseni and Enilolobo (2011) studied the Nigerian stock market. They explained that the stock market has some relation with the FDI. For this purpose they took 30 years data from Nigerian stock market and associate it with the FDI. By using different statistical analysis they found that the FDI has the direct and positive influenced on the SM development of the Nigerian stock market. Adam and Tweneboah (2013) focused on the impact of economic stability and FDI on the stock market. By using Johnsen co-integration and the error correction mechanism techniques for regression model they found that the FDI is positively affecting the stock market and whenever there is increase in the FDI in the market, there is considerably the more economic stability found. The study also narrates that the exchange rate is also playing its impact on the economic stability. The exchange rate is found negatively affecting the economic stability and the performance of the stock market in case of UAE stock exchange. Suleiman and Ibrahim (2014) investigated the stock exchange behavior with FDI, and economic stability. By using statistical analysis for example the Johnsen co-integration and the error correction mechanism techniques they found that the FDI has insignificant but relatively positive impact on the stock market of Nigeria. While hand they also concluded that the exchange rate has negative but significant impact on the stock market performance of country. They also narrates that the FDI has indirect influence on the economies of these countries. Okwuchukwu (2015) investigated exchange rate volatility, stock market performance and FDI and their correlation and concluded that the FDI can only be profitable for the economy when there is stable as well as well-developed capital market. According to Corrado and Jordan (2016), Australian stock market had been significantly affected by various factors in different period of time. These factors include inflow and outflow of foreign capital, rate of inflation, fiscal deficit, rate of exchange, and output of industrial rate. Furthermore, Carkovic (2016) found positive relationship between FDI and stock markets by using time series data at of Austrian stock exchange. The study signifies that in the years when FDI increased the stock market prices increased to a high level, while on the other hand when there was a recession and FDI decreased then the stock market prices fell by large.

One of the external factors in the recent past that severly affected almost every aspect of life across the world is Covid 19. The pandemic affected almost every stock market around the globe. According to Khan et al., (2020) Covid 19 has adversely affected financial sector and different stock markets. However, the results are different for the emerging stock markets as compared to the results with the developed stock markets. The developed stock markets provide better returns while the emerging markets have not shown significant results. Augusto (2020), noted that Covid has affected the stock markets and economies at a very huge level especially the macroeconomic factors just like inflation, unemployment, GDP, etc. Covid is a much similar virus to the 1918 Pandemic of the HINI virus that affected the economies on a very huge level. The impact of Covid on the economies is in a very dilute way such that the performance of the financial sector remain very slow as compared to the previous pandemics. Corrado and Jordan (2020) also concluded that different economies have been affected in different ways by Covid. Some economies better performed while the majority performed bad and slow. The financial sectors of the developed markets also got affected by the Pandemic of Covid as it has been affected globally in almost every economy. According to the study, Covid has affected the stock markets in different ways and the results are also different in different analyses.. Tahir et al., (2021) analyzed the stock and oil markets volatility during the Pandemic of G7 economies. The study found that the portfolio managers, investors, and researchers have major concerns regarding the crude oil market and stock markets volatility. According to the analysis, in G7 countries, there is volatility in the stock markets and crude oil market and there is plunged type of volatility in the stock market. The study proposed that due to a hedge in the market, there is fluctuation in the prices of crude oil. The main reason mentioned is that, that the lockdown created fluctuation in the demand and supply curve which ultimately affected the stock market prices. Ruhksana (2020) narrated that events like Covid are catastrophic, sudden and unpredictable. In history, there were certain catastrophic events occurred from time to time which affected the stock market of the different economies such as earthquakes, natural disasters, viruses, terrorist attacks, etc. Most of these catastrophes have affected the markets directly either positively or negatively. The banking industry is mostly affected by such pandemics situations. Okwuchukwu (2020) studied the impact of Covid-19 on world economics. Covid-19 has affected the economies at a very high level mostly the home-based work jobs were encouraged during the pandemic situation of the Covid-19 virus in the world. In result the inflation, as well unemployment increased. Brecher (2020), analyzed 77 different markets, and concluded that stock prices and stock returns were negatively affected by the Covid.

According to Oseni and Enilolobo (2020), the stock markets have always been affected by different types of events and situations. The study explained that the Covid-19 has also affected the stock markets. Certain factors such as lockdown, travel bans, and other policies have reduced the spread of Covid that ultimately affected the returns of the stock markets in a positive way. However, it is also observed that due to Covid most of the investors were insecure and uncertain about the market. The investors have reduced the level of investment that ultimately affected the stock market's performance. According to Ehrlich (2020), the Covid-19 has affected the financial sector of the global markets. According to the investors' perspective, the stock markets during the pandemic situation not performed well in the emerging economies that is the main reason the investors withdraw their investments however in the case of strong economies, the performance of the financial sector is not been affects as much as it is predicted. However, the policies to reduce the spread of the pandemic have positively affected the performance of the stock markets. Bahrini and Filfilan (2020) studied the impact of Covid on returns of stock markets in Arabic countries. According to the analysis, the study found that in Saudi Arabia the stock markets returns were very low as per the affection of the Covid-19 in the market. The returns of stock markets were recorded very low and investor also decreased their investments in the stock market. Although the stock market returns are reduced due to Covid but the crude oil prices increased.

One of the impacts of Covid-19 is instability in the stock market (Hong, Bian, & Lee, 2021). The stock market volatility in the US market has much fluctuated and it resulted in the inconsistent stock returns. The US stock market returns predictability is highly affected due to uncertainty and high risk present in the market. The pace of Covid -19 impact remained diverse in different economies. The main reason for this was the intensity of pandemic. However, it is obvious that all the economies have to go through the turmoil caused by Covid-19. Relatively weak economies are highly affected as compared to stock economies. Therefore, the stock returns were considerably low due to market tactics of absorption of the uncertainty. According to Krkoska (2020), the spread of the Covid from China to all over the world was speedy and sudden which was the reason that the economies got affected by the pandemic in a very consistent way. The spread of the virus was so uncertain that its effect was also unpredictable at the time of its effectiveness on the stock market. The uncertainty in the markets creates higher risk in the market. According to Robert and Gay Jr (2020), the volatility in the stock markets due to the Covid was recorded as one of the highest volatility in history. The stock market returns experienced many fluctuations due to different events and pandemic outbreaks in history but among all of them, till now the stock market has been highly affected by current pandemic. The stock market volatility due to the pandemic of Covid was recoded as the most high. The effect of the Covid on the stock market fluctuated from market to market and economy to economy. However, still, it has been a significant effect on the stock market. The Covid spread has created the depression in the market and as a result, there is very high level of the uncertainty in the market that creates the risk and low confidence among the investors. Shabaz et al, (2020) explained that the global economy has been affected by the Covid in the market. Different approaches to stop the pandemic has been widely successfully in reducing the spread of the Covid such as the social distancing, lockdowns, and ban on travelling etc. Although, these measures helped in reducing the spread of the Pandemic, however, ultimately affected the performances of the as stock markets. Furthermore, the reduction in the covid cases brought positive news in the market that attracted the level of the investment. Because of which the uncertainty reduced and level of investment increased. Singh (2021) narrated that the Covid-19 has affected the stock markets and economies worldwide. The pandemic created a world economic crisis even in the strong economic countries; the stock market performances are badly affected. According to the analysis, it is found that the hedging of the stock market and crude oil has been affected by the stock market. The demand and supply of investment levels have been affected by such crises. Furthermore, the pandemic caused stock market volatility. In the case of Pakistan, Shahryar (2021) explained that Covid has also affected the Pakistani economy. By using the data of the KSE 100 index, during the Covid situation, the study found no significant impact among the positive cases and the stock market performances on the daily basis. However, it is concluded that by using certain other variables such as the growth rate, inflation, unemployment rate, and interest rate in further investigate the effect of Covid on the performance in the case of the Pakistani market. Keeping in view the existing literature, this study attempts to explore the impact of Covid-19 and FDI on the PSX. For this purpose, the following two hypotheses are proposed.

H_1: Covid-19 has a negative influence on the performance of PSX.

H_2: FDI has positive influence on the performance of PSX during Covid.

Data and Methodology

The data used in this study is purely secondary. The data is collected through online sources such as the Pakistan stock exchange, State Bank of Pakistan official site, and Pakistan national health website. Data for the year 2020 on weekly basis is collected. The data for 40 weeks is taken in the study for each variable. For Covid-19, the weekly data of positive cases are taken. The KSE 100 index stock prices and the FDI data on weekly basis is taken for the analysis. The variables used in the study are as follows:

The dependent variable of the study is PSX performance. The performance of the Stock Market is restrained by Market capitalization. Market Capitalization is the most common way of measuring the stock market performance of any economy. The market capitalization is measured by the total market value of all listed shares in KSE 100 index companies over the GDP. Foreign Direct Investment is the independent variable; its impact is investigated in this study. The FDI has both direct and indirect impact on different stock markets. It varies from economy to economy. The weekly FDI data from economic survey of Pakistan official website has been taken for sample period. In order to analyze the impact of pandemic, Covid-19 is taken as the other independent variable. The number of positive cases on weekly basis is taken as sample set for the Covid-19 as per based on study of Shahryar (2021). Covid-19 has affected the stock market performances of the different countries. This has damaged the economic markets of all over the world. The prices of stocks and return damaged mostly due to the Covid impact on the market. The strong economies also negatively been affected by the Covid. The returns are negative because of the Covid in the stock markets. Weak economies are mostly affected much higher in consideration as compare to the strong economies but still there is negative impact as a whole due to the Covid.

Data Analysis
Results and Analysis

Table 1: Pearson Correlation

		Stock Market Performance
FDI	Pearson Correlation	.933**
	Sig. (2-tailed)	.000
	N	41
Covid-19	Pearson Correlation	-.967**
	Sig. (2-tailed)	.000
	N	41

**. Correlation is significant at the 0.01 level (2-tailed).

The above table is about the correlation analysis of the variables. According to the correlation table of variables, the FDI is positive with the stock market performance while on the other hand, it is negative with the Covid-19 positive cases. Correlation among stock market performance and FDI is strongly positive. The correlation between Covid-19 and stock market performance is negative.

Table 2: Model Summary of Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.811	.792	.789	3.04715

This table indicates the model summary of the regression analysis. The model summary of regression analysis indicates the magnitude of correlation and effects of overall picture. According to this table, the value of R is 0.811 which is near to 1 indicating that there is strong form of correlation among the variables. The value of R Square indicates that how much impact of dependent variables on the independent variables. Here the independent variables are FDI, Covid-19 positive cases. The value of R square is 0.792 indicating that there is 79 percent impact of the independent variables on the dependent variables.

Table 3: ANOVA Analysis

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	160.026	2	80.013	8.617	.013[a]
	Residual	64.996	7	9.285		
	Total	225.022	9			

a. Predictors: (Constant), Covid-19 cases, FDI

b. Dependent Variable: Stock Market Performance

This table is about the ANOVA analysis of the regression model. The ANOVA analysis is used to find out the goodness of fit test. This ANOVA table indicates that either the model used is appropriate enough or not to measure the data. Here the P value is less than the 5 percent indicating that the model we have used to analyze the data is good enough to use.

Table 4: Coefficient Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		Beta	Std. Error	Beta	T	Sig.
1	(Constant)	25.150	7.539		3.336	.012
	FDI	.734	.216	.771	.401	.011
	Covid-19	-.381	-.182	-.692	-.201	.001

a. Dependent Variable: Stock Market Performance

This table indicates the coefficient analysis of the regression model. According to the P-value of all the independent variables, the value is less than the 5 percent indicating that all the variables are statistically significant. The value of Beta for the FDI is positive this means that in case of Pakistan stock exchange, the FDI has significantly positive impact on the stock market performance. On the other hand the beta value for the Covid-19 cases are found negative indicating that there is significant negative impact of Covid-19 positive cases on the FDI and the stock market performance of the company. The results of the study indicate that the null hypothesis is rejected and alternate hypothesis that are:

H_1: Covid-19 has negative influence on performance of PSX.

H_2: FDI has positive influence on the performance of PSX during Covid.

are accepted as FDI has a positive impact on the stock market performance of Pakistan. On the other hand Covid-19 positive cases are found negatively correlated with the stock market performance. The P value for all the variables is also found significant, hence it can be concluded that the null hypothesis are rejected and alternate hypothesis are accepted.

Discussion

The nature of the study is quantitative and the secondary data is taken to analyze the impact of Covid-19 on PSX with FDI. This study is based on the finding the impact of Covid-19 on the Pakistan stock exchange. This study is also exploratory in nature that is new information is to be adding in the literature that how in case of Pakistan, the Covid-19 affected the PSX alongwith FDI. Data for the sample year 2020 is collected on weekly basis. 40 weeks data is taken in the study for each variable. For Covid-19, the weekly data of positive cases is taken. The KSE 100 index stock prices on the weekly basis are taken and the FDI data on weekly basis is also taken for the analysis purpose. Since the data was secondary and quantitative in nature, the simple linear regression model is used for analysis.

The correlation table shows that FDI has positive correlation with the stock market performance while on the other hand; Covid-19 has negative correlation with stock market performance. The value of Beta for the FDI is positive this means that in case of Pakistan stock exchange, the FDI has significantly positive impact on the stock market performance. On the other hand, the beta value for the Covid-19 cases is found negative indicating that there is significant negative impact of Covid-19 positive cases on the FDI and the stock market performance of the company. The results of the study indicate that the null hypotheses are rejected and alternate hypothesis which are H_1: “Covid-19 has negative influence on performance of PSX” and H_2: “FDI has positive influence on the performance of PSX during Covid” are accepted because, FDI is found positively correlated with the stock market performance of Pakistan. On the other hand, Covid-19 positive cases are found negatively correlated with the stock market performance. The P value for all the variables is also found significant, hence it can be concluded that the null hypothesis are rejected and alternate hypothesis are accepted. These results are consistent with prior studies, that pandemic negatively affected the stock market performance. The main reason is that covid-19 creates uncertainty in the stock market that affects the investors’ confidence. Lower investors’ confidence results in low participation and market capitalization.

Conclusion

This study is about the analysis of the stock market performance of Pakistan stock exchange during the Covid-19 situation. The stock markets are considered as the indicator of the economy. There are different factors which are affecting the stock market performance. This study is based on competitive analysis of the stock market performances. Covid-19 effect on the stock markets has been widely under studied in recent days. The Covid has affected the economies; however, different economies have been affected differently. Some economies better performed while majority performed otherwise and slow. The financial sectors of the developed markets also got affected by the Covid pandemic as it has been affected globally in almost every economy.

The Covid has affected the stock markets in different ways and the results are different in different analysis. Covid has affected the stock markets of developed markets in a significant way and in these strong economies; the impact of Covid is evident in the stock market performance. The portfolio managers, investors and researchers have major concerns regarding the stock market’s volatility. In G7 countries, volatility in the stock markets and crude oil market prevailed during pandemic. Due to hedge in market, there fluctuation experience in the crude oil prices. In history, certain catastrophic events occurred which affected the stock markets of the different economies such as the earthquakes, natural disasters, viruses, terrorist attacks etc. Most of these disasters affected the stock markets directly or indirectly, either positively or negatively.

This study explored that FDI has a positive impact; while on the other hand, Covid-19 has negative impact on PSX. Results of this study are beneficial for economists, financial investors and future researchers. From economic point of view, the results indicate that in case of Pakistan, the FDI has direct influence on the Stock market performance so policies should be emphasized to support increase in FDI for better stock market performance in Pakistan. For investors, results of this study indicate that PSX is not that much strong that could avoid the pandemic shocks, so wisely investment strategies may be adopted during such situations. Finally, the future studies can be directed towards other macroeconomic variables in studying the impact of covid-19 on stock market performance. This study is limited to only one year of pandemic, it can be further extended to post pandemic era in order to study the recovery in the stock markets.

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