

The Impact Of Covid 19 On Stock Price Returns: Evidence From Pakistan

Rashid Khan¹, Adnan Ahmad^{*2}, Yasir Zeeshan³, Naveed Hussain Shah⁴, Fawad Ali⁵

¹Ph.D Scholar Institute of Business Studies and Leadership (IBL), Abdul Wali Khan University Mardan (AWKUM)

^{2*}Associate Professor, IBL Abdul Wali Khan University Mardan.

³Ph.D Scholar IBL, Abdul Wali Khan University Mardan.

⁴Assistant Professor, Deptt of Business and Management Sciences, University of Lakki Marwat.

⁵Ph.D Scholar IBL Abdul Wali Khan University Mardan.

Abstract

The effects of the Covid-19 pandemic on global stock markets have been noticed and reported all over the globe. Developed as well as developing economies have recorded almost the same effect. Through due to the limited resources, low capital structure and less developed capital markets in the developing as well as the emerging economies have reported more effects of Covid-19 in their economies. This study investigates one such impact of an extremely contagious pandemic in one of the developing country Pakistan. Using an event study technique based on the prior literature that such events can best be evaluated through event study technique; we take the sample period form February 2019 to March 2020 for a 10 days pre and post event window (making it a 21-day event) for 63 firms in Pakistan. We report that Covid-19 does not show adverse effect on the share prices of the sample companies. We show that average abnormal return (AAR) values are mostly

¹ PhD Scholar Institute of Business Studies and Leadership (IBL), Abdul Wali Khan University Mardan (AWKUM) drrashid761@gmail.com

²Corresponding Author: Associate Professor, IBL Abdul Wali Khan University Mardan: adnankhattak@awkum.edu.pk

³ PhD Scholar IBL, Abdul Wali Khan University Mardan: yasirzeeshan92@gmail.com

⁴Assistant Professor, Deptt of Business and Management Sciences, University of Lakki Marwat: naveedshah@ulm.edu.pk

⁵ PhD Scholar IBL Abdul Wali Khan University Mardan: fawad-792@yahoo.com

negatives prior to the Covid 19 while portrays a positive trend after the Covid-19 announcement. The main ground of no effect of the pandemic could be attributed to timely and proactive response of the government of non-closure of businesses in the country. The study has implications for future for both government as well as firms to devise strategies in advance for coping up with such pandemics in the future.

Keywords: Covid 19, Stock Market Returns, Abnormal Returns, Event Study

1. Introduction

The COVID-19 Pandemic has disturbed the economy of every country and created financial crisis in most of the countries throughout the world. Various precautionary standards such as social distancing and lockdowns have showed their significance considerably. However, it has adverse effects which lead to low trading activities of companies while the complete shutdown of numerous business units. The economic damages as a consequence of the COVID-19 have distressed the stock markets throughout the world as well. It disturbed various economic aspects of a country such as labor markets, global supply chains, consumption behaviors, businesses and stock market. Such behaviors and effects led to the global influence in the entire world. Not only developed countries were affected badly but the major impact was noted in the developing countries. These higher effects noted in developing economies could be related to the relatively scarce resources, with poor economic growth and lack of capital flows (Machmuddaha et al., 2020). Scientists all over the world emphasized the essential for scientific investigation to deal with this epidemic and to get ready for coming pandemic of these forms (WHO, 2020).

Similarly, other researchers such as Baker et al. (2020), Eichenbaum, Rebelo, and Trabandt (2020) reports that in the period of epidemics, conflicts, natural calamities and economic recession, the degree of risk in the marketplace becomes extremely high. Formerly, the stock markets had responded to outbreaks in both positive and negative effects (Wang, Yang, & Chen, 2013). Globally the stock markets responded vigorously to the COVID-19 outbreak which was unexpected in numerous stock exchanges (Baker et al., 2020). The COVID-19 outbreak is like a "Black Swan" event, which means an unforeseen event which is beyond the range of normal anticipation. Though, it led to economic depression in 2020 throughout the world. The impact of pandemic on human, financial, and economic damage are still undetermined and are not within the domain of our estimations. Machmuddah et al., (2020) conclude that in accordance with Dow Jones and Standard & Poor's, companies' stock prices in the U.S. declined by twenty percent during Covid-19 pandemic.

Previous studies also examined the effects of Covid 19 on stock market. Studies show that there are various theories employ to demonstrate share price response in a stock exchange for instance Efficient Market Hypothesis (EMH), and behavioral finance theory is widely utilized. In accordance to the Efficient Market Hypothesis the markets are efficient that there is no space for anyone to gain abnormal return as all things are fairly and precisely priced and stock price indicate

full information (Malkiel & Fama, 1970). Behavioral finance theory is used for finding the effects of psychology on the investors' behavior. It concentrates on actuality that investors in their decision making are not logical every time they encounter constraints to self-regulation, and always affecting from their intrinsic biases due to which it also affects the investment behavior which can fluctuate the share prices besides any alteration in the financial performance of a particular firm (Chambers & Bailey, 1996; Shiller, 2003).

Phuong (2021) studies the effects of Covid 19 outbreak on stock prices by employing event study in Vietnam. The study has used ten days event window for three different event windows. The finding of the study shows that occurrence of the event date, abnormal returns in the first event changed symbol from negative to positive, abnormal returns in the 2nd event is mostly negative, abnormal returns in the 3rd event changed symbol from positive to negative. This showed diverse behavior of investors regarding events.

The studies of Mazur et al. (2020) and Fu and Shen (2020) examine two greater economies of the globe both experience identical situation that COVID-19 outbreak has adverse effects on the share prices as well as on business operation on the targeted sectors of their studies. The study of Mazur et al. (2020) investigates the US stock exchange during the 2020 collapse due to COVID-19 outbreak. The finding of the study shows that gasoline and crude oil stock prices are adversely influence due to COVID-19 pandemic.

Yan et al., (2020) investigates the prospective impacts of Covid-19 on share prices while proposed a few potential channels that an investor can obtain benefits from the stock prices that are suffered from the Covid 19. The studies investigates the previous epidemics and concludes that stock markets normally react adversely to a particular event in the fleeting however in the extended time, the stock market ultimately rectify its nature. On the Basis of results, the studies suggest buying and selling the shares of industry which are affecting promptly by the pandemic in the short run. Particularly, the studies examine the different industries such as tourism, technology, the entertainment and gold as prospective zones from which investor can gain enormous profits.

The up and down in the stock prices shook the investor's confidence all the time in the stock market, particularly at the time of crisis. Every outbreak has a divergent history that has influence on the share prices are also unlike; a few crises disturb total market, while the rest affect particular sectors of the stock market. Moreover, some crises affect throughout the world or few crises affect into the extent of a particular region. The COVID-19 pandemic is however distinct than previous outbreak on the ground that it is not limited to disturbing the stock exchange performance, while also affects the world financial status.

Events affect the share prices, which fluctuate the trading volume and stock values either in a positive direction or negative depending upon the magnitude of a particular event (Baker et al., 2020). They also report that event study technique examines responses of company's stock prices and bond prices during the occurring of events. Event study technique is an important criterion for

checking upshot of the event on firm value (Brown & Warner, 1985; MacKinlay, 1997). Thus using an event study technique and taking data from the Pakistan Stock Exchange and Business Recorder for the period from February 2019 to March 2020, we find that Covid-19 outbreak does not affect the share price returns for the companies in PSX. One of the reasons could be the efficient and timely steps taken by the Government to prevent these effects to the best possible level such as the non-closure of the business, offering subsidies to these companies to operate as normal businesses and provision of more capital as well as leniency in regulatory environments.

The adverse influence of the Covid 19 outbreak on the world stock exchanges have been noticed in each and every part of the world and Pakistan Stock Exchange (PSX) is an important stock market as well which disturbed because of the pandemic. In Pakistan the first tested COVID-19 patients were reported on 26th February in the year of 2020. The effects of pandemic on Pakistan's economy rely on taking precautionary steps and the intensity of its transmission. Prior literature shows mixed consequences about the influence of the pandemic on share prices in general and in Pakistan in particular. The studies of Waheed et. al (2020) investigate the effects of COVID-19 outbreak on Pakistan Stock Exchange (PSX) and find that this pandemic has a positive influence on stock prices. They report that since the government has actively and timely responded to this pandemic and used corrective measure in advance to safeguard the capital market and stakeholders of the stock exchange as well as different companies. However, the direct shock and other macroeconomic effects on the global scale did damage the operation of stock exchange to some extent (Yar, 2020). His study had the premise of examining the daily fatalities and recoveries of Covid-19 and its effects on PSX. He finds that non-significant effects of positive cases and mortalities on the stock prices. The above literature reports that not only the global economy has reported an adverse effect but also the developing economies has noted a worse effect of Covid-19 not merely its health sector however the economy in particular, and the stock exchanges. Moreover, the studies are dispersed and contrasting results of such pandemics on economies around the world since some has reported positive results (Eichenbaum et al., 2020) while others have reported negative effects (Syed & Fatima, 2020). Thus, the aim of this research is to empirically investigate the effects of Covid-19 outbreak on share prices for PSX for the period February 2019 to February 2020.

The remaining portion of the study is structured as follows. Section 2 reports methodology wherein we present why this study uses event methodology; section 3 presents results, discussion and conclusion of the study.

2. Research Methodology

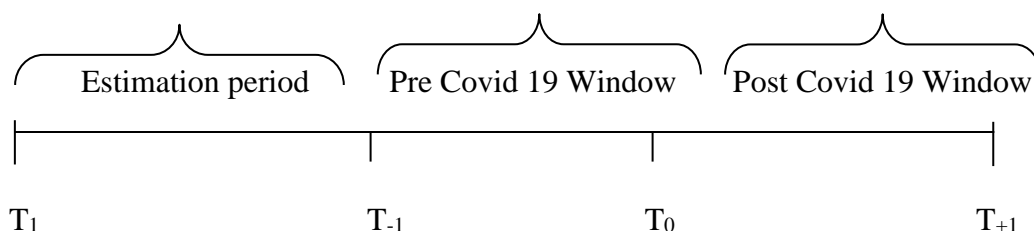
In this section, the study presents the methodology and states that we use event study technique for examining the impact of Covid 19 pandemic on share prices. Previous literature has used different models for measuring the effects of the pandemic on share Prices. We use market return model for calculating the expected returns by calculating the average abnormal returns, t values for Average Abnormal Returns and Cumulative Average Abnormal Returns.

2.1 Population and Sample

All listed firms on Pakistan Stock Exchange (PSX) are the population of the study. We have selected sample of those companies whose data were available one year prior to the Covid 19 reporting date and 10 days later. We end up having 63 companies as our sample.

2.2 Event study timeline

The ordinary event study mostly has two main components the first is Event Window while the second one is the Estimation Period. More specifically, event window is utilized in order to investigate the level of market response prior and post to event date while $t = 0$ is the event date on which the first Covid-19 cases were reported in Pakistan. The estimation period is practice to calculate the coefficient of the Market Model in order to calculate the abnormal returns for share.



Where

T_1 = the beginning time for estimation period which is one year

Before the Covid 19 date

T_{-1} = Closing time for estimation period which is ten days prior to the event date

T_0 = Event Date of Covid 19.

T_{+1} = Post Covid 19 window.

2.3 Data Collection

The data required for this research is secondary in nature thus we use most of the secondary sources for data collection. The data of stock market and companies share prices have been collected from official websites of Pakistan Stock Exchange (PSX) and Business Recorder. The data for our independent variable has been taken from World Health Organization (WHO).

2.4 Variables and Measurement

2.4.1 Stock and Market Returns

The share and market returns are the basis for analysis of data and are our dependent variables. Simple return can be calculated as the deviation of today Stock prices and yesterday stock price over the yesterday stock prices. Mathematically we can write is as follow:

$$R_t = \left(\frac{P_t - P_{t-1}}{P_{t-1}} \right) \quad (1)$$

$$R_m = \left(\frac{\text{KSE 100 index}_t - \text{KSE 100 index}_{t-1}}{\text{KSE 100 index}_{t-1}} \right) \quad (2)$$

Where in Eq (1), R_t means the share return for a particular company, the symbol P_t represents today price of a share and P_{t-1} is the yesterday price of a share. In Eq (2), the symbol R_m means market return of the KSE 100 index. t represent today index value while $t-1$ shows yesterday index value.

2.4.2 Estimated Window

The study of Phuong (2021) has employed one year share and index data prior to event day as a estimated window while investigating the impact of COVID-19 pandemic on share value in a stock exchange. We present it in the following section.

2.4.3 Expected return

The estimated return has been computed by market return model as used by (MacKinlay, 1997). The equation is as follow:

$$(E)R_i = \alpha_i + \beta_i R_m + \epsilon_0 \quad (3)$$

Where $(E)R_i$ represent the expected return, R_m is the market return α_i and β_i are Parameters of OLS regression .

2.4.4 Abnormal Returns

Abnormal return is calculated as actual returns minus estimated returns as employed by Brown and Warner (1985) in their study of event study:

$$AR = (A)R - (E)R \quad (4)$$

In the above formula $(A)R$ represent the real and $E(R)$ expected return.

The cumulative abnormal return is calculated by the summation of single firm return the formula is as under:

$$CAAR = \sum_{i=0}^n AR_i \quad (5)$$

Here, AAR means the average abnormal returns while CAAR means is cumulative average abnormal returns. We estimate the t-tests for comparison of the pre and post Covid-19 performance of the sample companies (i.e., the February 2019 is taken as Pre Covid-19 while March 2020 is considered the post Covid-19 period).

Table 1

Days	AAR	t-test	CAAR
-10	0.002	0.090	0.002
-9	-0.002	-0.059	-0.001
-8	-0.005	-0.151	-0.005
-7	-0.001	-0.242	-0.006
-6	-0.001	-0.172	-0.007
-5	0.006	0.097	-0.001
-4	0.001	-0.030	0.000
-3	0.001	-0.177	0.000
-2	-0.003	0.530	-0.003
-1	0.010	0.509	0.008
0	0.003	0.330	0.011
1	0.001	0.221	0.012
2	0.006	0.154	0.017
3	-0.002	-0.123	0.015
4	0.004	0.502	0.019
5	0.002	0.067	0.022
6	0.009	0.358	0.030
7	0.007	-0.054	0.038
8	0.023	0.959	0.061
9	0.006	-0.099	0.068
10	-0.004	-0.535	0.063

3. Results, discussion, and conclusion

Table 1 shows values of Average Abnormal Return (AAR), t-test for Average Abnormal Return. We also report the Cumulative Average Abnormal Return (CAAR). The values of Average abnormal Return and Cumulative Average abnormal return are mostly negative prior to the Covid 19 cases announcement. As per analysis, we can infer that this study cannot determine the effect of Covid-19 during the selected period. Thus, based on the t-values of the average abnormal returns, we are unable to reject our null hypothesis of the pre and post Covid-19. Though we note that during Covid-19 period, the average abnormal returns are becoming positive but still the comparative results based on the t-values does not show any significant influence of the Covid-19 outbreak on share prices in Pakistan Stock Exchange.

This article investigated that how the COVID-19 outbreak fluctuate stock prices of listed companies in Pakistan stock Exchange using event study methodology. The first patients tested positive for COVID-19 were recorded on 26th February 2020. Thus, we use window [-10; 10] to study the effects of this event. The results of this study demonstrate that after the event date,

Average Abnormal Returns in the event window is changing their signs from negative to positive. Furthermore Cumulative average abnormal returns after the event are also positive which showed that investor gain confidence after the government decision of not closing the businesses. However, the t-values are not statistically significant indicating that Covid-19 outbreak does not have any significant influence on stock prices. Our findings are consistent with the results of Yar (2020) who also shows no upshots of Covid-19 outbreak on the PSX operation as well as share prices. Comprehension of the response of the stock exchange to the COVID-19 outbreak will be a roadmap for authorities to generate plans to protect the shareholders as well as companies. Moreover, the government would need to devise policies to safeguard the companies to absorb the shocks in the days of such pandemic or unpredictable events. Moreover, this study would also help companies to act instantly and alter their strategies to reduce losses if such events occur in the future.

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