

EFFECT OF COVID-19 CORONAVIRUS PANDEMIC ON DEVELOPMENT OF THE UZBEKISTAN'S FUND MARKET

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Abstract— In the article have been examined scientific and theoretical aspects of the impact of the COVID-19 coronavirus pandemic on stock markets. Also, the changes in the turnover of the Republican Stock Exchange "Tashkent" during the pandemic were analyzed, on the basis of econometric analysis revealed the correlation of factors affecting the turnover of the COVID-19 coronavirus pandemic on the stock exchange. Proposals have been developed to increase the activity of the stock market of Uzbekistan.

Index Terms— COVID-19, stock market, econometric analysis, index, model, pandemic, correlation, regression.

1 INTRODUCTION

A new challenge for humanity, the crown virus, which is being tested, is breaking down the world's prosperous economies in turn. Although there is no clear evidence and proof of its biological origin, its positive and negative effects on the world economy are recognized by many scientists and researchers.

Initially, all borders were closed, a quarantine regime was declared in the regions of the country, remote labor activities were introduced in many enterprises and organizations, and most importantly, funds were set up to fight the virus and support the country's economy. The establishment of these funds is aimed at mitigating the economic consequences of the pandemic, putting the protection of the vulnerable population as the main task of the state.

On March 19, 2020, the European Central Bank (ECB) announced a program called the Pandemic Emergency Purchase Program to stabilize the situation in financial markets caused by the Coronavirus pandemic. The program involves the purchase of government and corporate bonds from stock market participants totaling 750 billion euros. According to the European Central Bank, these measures will serve to stabilize the situation in European financial markets.

The ongoing COVID-19 pandemic is affecting the stock markets, as well as all sectors of the world economy. In the context of globalization, the development of the stock market is hampered by the lack of regular announcement of the value of shares on the stock exchange in our country, increasing the desire and aspiration of the population to buy shares, converting shares into real securities and becoming an important source of income. In addition, it is important to study the factors affecting the stock market of the COVID-19 pandemic. The Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021 identifies important tasks to "improve the investment climate and

strengthen the role of shareholders in the strategic management of enterprises" [1]. Fulfillment of these tasks requires accelerating the development of the stock market.

Resolutions of the President of the Republic of Uzbekistan No. PF4947 of February 7, 2017 "On the action strategy for further development of the Republic of Uzbekistan" [2] and PQ-1727 of March 19, 2012 "On measures to further develop the stock market" The results of the research described in this article will serve to some extent in the implementation of the tasks set out in other regulations.

At the same time, the urgency of this issue is determined by the fact that in the context of the COVID-19 pandemic, the issues of identifying the main factors affecting the development of the stock market of Uzbekistan, overcoming the identified problems have not been sufficiently studied.

2 LITERATURE REVIEW

Although it has not been long since the onset of the COVID-19 pandemic, a number of scientific studies have been conducted on its impact on national economies, various sectors and industries of the economy, particularly stock markets.

In particular, foreign economists Ansari Saleh Ahmar and Eva Boj del Vallar [3] developed econometric models ARIMA and SutteARIMA, which forecast the development of the Covid-19 pandemic in Spain. the number of patients with was obtained and approbated.

Studies by David Iheke Okorie and Boqiang Lin have examined the fractal impact of the COVID-19 pandemic on stock markets [4]. Based on data from the stock market indices of the 32 largest countries affected by caronavirus, COVID-19 was analyzed using sequential motion correlation analysis (DMCA) and cross-correlation (DCCA) methods for initial and subsequent cases of spread. According to the results obtained, the fractal effect of COVID-19 infection on the stock market has been identified. Moreover, this fractal effect disappears over time (in the medium and long term) due to the profitability and volatility (volatility) of the stock market.

The scientific work of Abdullah M. Al-Awadhi, Khaled Alsaifi, Ahmad Al-Awadhi, and Salah Alhammadi [5] examined whether infectious diseases affect stock market outcomes.

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The study used panel data analysis to examine the impact of the COVID-19 virus on the Chinese stock market as a natural experiment. The results of the study showed that the daily increase in COVID-19-confirmed cases and overall mortality has a negative impact on the stock returns of all companies.

The Orhan Erdem study [6] used the stock market indices of 75 countries and daily data on Covid-19 to confirm the effects of Covid-19 and the number of deaths on the stock market. The results show that the increase in the number of confirmed and deaths with Covid-19 has a negative impact on stock market returns and a significant positive impact on volatility. However, the impact of the number of confirmed ones on stock market earnings is three times higher than the impact on the number of deaths.

Another foreign researcher, Badar Nadeem Ashraf [7], analyzed the impact of 77 countries' government mitigation measures on the Covid-19 pandemic on stock market returns. It identifies an econometric relationship between the daily trading volume of the selected 77 countries in the stock markets and the number of patients, and the scientific impact of the government's social protection measures on the stock market.

Chinese researchers Qing He, Junyi Liu, Sizhu Wang & Jishuang Yular have empirically studied the daily trading volume in the stock markets of China, South Korea, Italy, France, Spain, Germany, Japan and the United States. As a result, it was found that the negative effects of Covid-19 infection in the U.S. and European stock markets among selected countries were short-lived [8].

Researchers Kang Hua Cao, Qiqi Li, Yun Liu & Chi-Keung Woo [9] analyzed the negative impact of Covid-19 infection prevalence on the stock market index based on 14 panel data daily. The authors found that the elasticity of the stock market index for confirmed cases was -0.028 ($p < 0.01$ significance), and the elasticity of the stock market index for the recovery status of patients was 0.011 ($p < 0.01$ significance). In this study, the effect of the spread of Covid-19 infection in the region and outside the region on the stock market index was studied and a regression model was constructed.

Another research scientist, Enrico Onali, studied the volume of U.S. stock market trading turnover in the U.S. stock market (Dow Jones and the S & P500 index) from April 2019 to April 2020. The study provides an econometric analysis of the incidence of Covid-19 infection in the United States and six other countries and the impact of related deaths on the U.S. stock market (Dow Jones and S & P500 indices). scientifically proven. [10]

Heather Yan, Andy Tu, Logan Stuart, and Qingquan Zhanglar [11] studied the impact of the Covid-19 pandemic on the tourism industry, industry, entrepreneurship, and gold reserves in the United States. As a result, the lost profits of these industries and sectors in the stock market under the influence of the Covid-19 pandemic were calculated and its damage to the US economy was determined.

The analysis of the above literature shows that the impact of the Covid-19 coronavirus pandemic on the stock markets, which is one of the most important financial institutions in developed and rapidly developing countries, has been thor-

oughly studied. This, in turn, indicates that stock markets make a significant contribution to the economic development of these countries. However, economists of our country do not conduct sufficient research on the impact of the pandemic on the stock market.

3 METHODOLOGY

In the course of the study, the impact of the Covid-19 pandemic on the stock market of Uzbekistan was determined on the basis of the analysis of econometric models with the selection of stock market factors and the development of relevant conclusions and recommendations.

4 ANALYSIS AND RESULTS

The U.S. Federal Reserve cut its refinancing rate to 0.25% on March 15 as a result of the Covid-19 pandemic. In the U.S., such a decline in the refinancing rate occurred only in December 2008. At the height of the global financial crisis in 2008, the FRT lowered its refinancing rate to 0-0.25% for the first time in its history.

The FRT also announced a number of additional measures to protect the country's economy from the effects of the coronavirus pandemic. Despite the FRT's efforts to stimulate the stock markets, asset and index prices in the U.S. stock market fell sharply the day after the FRT's decision was announced. The value of these indices has dropped by almost 30%, the lowest level in the last 3 years [12].

Asian stock exchanges also suffered more from the coronavirus. In particular, the KOSPI 200 index, which consists of shares of the 200 largest companies in South Korea, fell to a 10-year low.

European stock exchanges in France, the United Kingdom and Germany have also been affected by the coronavirus pandemic.

Measures are being taken around the world to mitigate the effects of the coronavirus pandemic. A number of programs are being developed and implemented to stabilize the impact of the coronavirus pandemic on the global economy and financial markets.

In particular, on March 19 this year, the European Central Bank (ECB) announced a program called the Pandemic Emergency Purchase Program in order to stabilize the situation in the financial markets caused by the Coronavirus pandemic. The program envisages the purchase of government and corporate bonds from stock market participants for a total of 750 billion euros. According to the European Central Bank, these measures will help stabilize the situation in European financial markets [12].

To study the impact of the Covid-19 coronavirus pandemic on the development of the stock market of Uzbekistan. then the daily number of recovered $-X_2$, the daily number of deaths from coronavirus Covid-19 in the Republic of Uzbekistan $-X_3$ were selected on the basis of designations. Statistics on the number of cases, cures and

deaths of Covid-19 coronavirus infection in the Republic of Uzbekistan are available on the official website www.coronavirus.uz.

First of all, on the basis of the selected factors, it is expedient to determine the degree of their interdependence through a correlation coefficient in a special program Stata 14. According to the table, there is a strong correlation between the resulting factor and the selected factors, and since the correlation between the factors is dense and the conditions

$|r_{x_1, x_2}| < 0.8$ there is no multicollinearity between the factors and regression. equation can be constructed. The regression equation shows what functional relationship exists between the resulting factor and the selected factors (Table 1).

Table 1
Correlation analysis of the impact of the Covid-19 virus pandemic on the development of the stock market in the Republic of Uzbekistan

	Y	X ₁	X ₂	X ₃
Y	1			
X ₁	0,0635	1		
X ₂	-0,0034	0,8100	1	
X ₃	0,0290	0,89991	0,7717	1

It is advisable to use the modern Stata 14 or Eviews program to construct the regression equation.

According to Table 1, the significance of the correlation should be checked against certain criteria. There is a correlation between the number of Covid-19 coronavirus infections in the Republic of Uzbekistan, the number of coronavirus infections in the Republic of Uzbekistan (X₁) and the number of Covid-19 coronavirus infections in the Republic of Uzbekistan (There is a positive density correlation between X₂). On the other hand, the daily number of deaths due to Covid-19 coronavirus infection in the Republic of Uzbekistan (X₃) and the daily number of Covid-19 coronavirus infections in the Republic of Uzbekistan (X₁) and the daily number of people recovering from Covid-19 coronavirus infection in the Republic of Uzbekistan (There is a positive density correlation between X₂). These conclusions are logically correct. However, the correlation coefficients between the volume of daily trade turnover (Y) and the number of Covid-19 coronavirus infections, cures and deaths in the Republic of Uzbekistan at the Republican Stock Exchange "Tashkent" are 0.0635, -0.0034, 0.0290, respectively indicates no connection.

According to Table 2, the significance of the correlation coefficients between the volume of daily trade turnover (Y) on the Republican Stock Exchange "Tashkent" and the number of people infected, cured and died of coronavirus Covid-19 in the Republic of Uzbekistan (p-value) - 0.50, 0.97, 0.75 lag, indicating that the correlation between these factors is not statistically

significant.

Table 2
Correlation matrix of the impact of the Covid-19 virus pandemic on the development of the stock market in the Republic of Uzbekistan

	Y	X ₁	X ₂	X ₃
Y	1.000			
X ₁	0,0635	1.0000		
X ₂	0.5022		1.0000	
X ₃	-0,0034	0,8100	0,7717	1.0000
	0.9710	0.0000	0.0000	
	0,0290	0,89991	0,7717	1.0000
	0.7595	0.0000	0.0000	

To test the hypothesis that the development of the stock market in our country is affected by the Covid-19 coronavirus pandemic, we construct a regression model between immutability and change.

$$Y = 218,23 + 1,01 \cdot X_1 - 0,38 \cdot X_2 - 42,57 \cdot X_3 \quad (1)$$

here:

Y - Volume of daily trade turnover on the Republican Stock Exchange "Tashkent";

X₁ - Daily number of Covid-19 coronavirus infections in the Republic of Uzbekistan;

X₂ - Daily number of cases after coronavirus infection in the Republic of Uzbekistan Covid-19;

X₃ - Daily number of deaths due to Covid-19 coronavirus infection in the Republic of Uzbekistan.

(1) - the reliability and adequacy of the equation should be checked on the basis of criteria. The inspection was performed using the Stata 14 program. The Fisher criterion is F_{stat}=0.639 which is greater than 0.05, which means that the model is not statistically significant. The p-value of each factor in the regression equation of factors x₁, x₂, x₃ is 0.235, 0.377, 0.605, respectively, and no factor is significant.

The coefficient of determination is R = 0.0152, which can explain only 1.5 percent of the total set. It can be concluded that in the context of the Covid-19 coronavirus pandemic, there are other factors that affect the daily turnover of the Republican Stock Exchange "Tashkent".

5 CONCLUSIONS

The volume of daily turnover on the stock exchange of the Republic of Uzbekistan did not affect the number of patients with Covid-19 coronavirus infection in the country, recovered and died.

This means that the development of the stock market in our country is low compared to other stock markets in Asia. Dur-

ing the Covid-19 coronavirus pandemic in the stock markets of Asia, Europe and the United States, we can see a sharp increase in the price of shares of pharmaceuticals, IT programs and sales of companies in this area. However, this situation has not been observed in our country, as in 2019-2020, a number of joint-stock companies issued their shareholders in the IPO. This, in turn, requires the improvement of corporate governance in about 600 joint-stock companies operating in the country.

- It is necessary to further improve the regulations on the state of the stock market in Uzbekistan, its participants, their securities and the preparation and submission of necessary information and reports on financial and economic activities;

- In order to accelerate the effective operation of the stock market, it is necessary to promote the expansion of investment companies, consulting firms, management companies, nominal depositors, underwriters;

- Emphasis should be placed on improving the mechanism of financial risk management of joint stock companies in the stock market, the introduction of modern IT technologies, strengthening human resources.

REFERENCES

- [1] Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis. December 22, 2017.
- [2] Appendix 1 to the Decree of the President of the Republic of Uzbekistan dated February 7, 2017 "On the Strategy of actions for further development of the Republic of Uzbekistan" PF-4947 "Strategy of actions on five priority areas of development of the Republic of Uzbekistan in 2017-2021"
- [3] Ansari Saleh Ahmar and Eva Boj del Val. SutteARIMA: Short-term forecasting method, a case: Covid-19 and stock market in Spain // *Science of the Total Environment* 729 (2020) 138883. (<https://doi.org/10.1016/j.scitotenv.2020.138883>).
- [4] David Iheke Okorie, Boqiang Lin. Stock markets and the COVID-19 fractal contagion effects // *Finance Research Letters*, June 2020. (<https://doi.org/10.1016/j.frl.2020.101640>).
- [5] Abdullah M. Al-Awadhi, Khaled Alsaifi, Ahmad Al-Awadhi, Salah Alhamadi. Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns // *Journal of Behavioral and Experimental Finance*, April 2020. (<https://doi.org/10.1016/j.jbef.2020.100326>).
- [6] Orhan Erdem. Freedom and stock market performance during Covid-19 outbreak // *Finance Research Letters*, June 2020. (<https://doi.org/10.1016/j.frl.2020.101671>).
- [7] Badar Nadeem Ashraf. Economic impact of government interventions during the COVID-19 pandemic: International evidence from financial markets // *Journal of Behavioral and Experimental Finance*, June 2020. (<https://doi.org/10.1016/j.jbef.2020.100371>).
- [8] Qing He, Junyi Liu, Sizhu Wang & Jishuang Yu (2020): The impact of COVID-19 on stock markets, *Economic and Political Studies*, DOI:10.1080/20954816.2020.1757570.
- [9] Kang Hua Cao , Qiqi Li , Yun Liu & Chi-Keung Woo. Covid-19's adverse effects on a stock market index // *Applied Economics Letters* (DOI: 10.1080/13504851.2020.1803481).
- [10] Onali, Enrico. COVID-19 and Stock Market Volatility (May 28, 2020). Available at SSRN: <https://ssrn.com/abstract=3571453> or <http://dx.doi.org/10.2139/ssrn.3571453>.
- [11] Yan, Binxin and Stuart, Logan and Tu, Andy and Zhang, Qingquan, Analysis of the Effect of COVID-19 on the Stock Market and Investing Strategies

- (March 28, 2020). Available at SSRN: <https://ssrn.com/abstract=3563380> or <http://dx.doi.org/10.2139/ssrn.3563380>.
- [12] <https://uza.uz/oz/business/dunye-davlatlari-i-tisodi-koronavirusdan-ay-darazhada-zarar--27-03-2020>.