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Professional paper

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THE RELATIONSHIP BETWEEN STOCK MARKET & ECONOMIC ACTIVITY DURING THE COVID 19 PANDEMIC IN SOUTHEASTERN EUROPE

Abstract: The emergence of the corona virus and its rapid spread has caused a global health crisis, the virus has had a huge negative impact and has deepened fear in all segments of economic activity and financial flows. Experts from the business world, have for a long time highlighted the facts that point to great losses in the world economy. The Organization for Economic Cooperation and Development (OECD) indicated that the corona virus was biggest threat to the world economy in recent history until today. For the needs of this paper, and in the direction of fulfilling the set goals, available data have been used that through statistical processing show the impact of the pandemic on the activities of the stock markets through the overall economic activity. In addition, the American and several world stock markets were selected for this paper as a comparison with the stock markets of Southeast Europe. The purpose of the paper is to show how the emergence of COVID in the Balkan countries at the beginning of 2020 affected stock exchange activities, how fear and state restrictions led to a decline in economic activity and thus a decline in the indices of all stock exchanges.

Keywords: international stock markets, economic activity, COVID Coronavirus statistics.

JEL classification: F15, G15, G41

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Introduction

In the conditions of globalization of the world economy, the inclusion in international financial flows is one of the key prerequisites for economic growth and development, which is especially important for developing countries whose participation in world trade is still relatively modest. This research confirms the existence of a positive influence of openness to financial markets and the economic growth of developing countries. For the countries of the Southeastern Europe, trade exchange and financial incorporation with the Western world is one of the most important aspects of economic cooperation, here we are primarily thinking of the European Union. However, the later start of the process of transition to the market model of the economy of these countries compared to the countries of Central and Western Europe, political instability caused them to still face the problems of insufficient level of economic development and competitiveness and to be highly sensitive to various negative market "externalities".

The Corona virus in a very short period of time has swept the entire world and caused a huge negative impact on all aspects of human life, including financial flows. The economy fell into a crisis of unknown duration and incomprehensible outcome. The pandemic was and is a great challenge due to its unique way of occurrence and the profound consequences it left and still leaves on the economy and finances. There was considerable uncertainty in all aspects of the global economy and society. It is impossible to predict what long-term effects the Covid-19 pandemic will have on the economy, financial markets and innovation. The spread of the virus has kept people away due to the measures introduced and this has affected the closure of offices, businesses, public events, and thus the financial markets and a drop in stock market activity that has negatively affected the entire world economy. Covid-19 spread very quickly and caused concern among consumers who were spending and investing, but in the face of fear and restrictions this changed and they all invested less and less. Countries around the world have introduced various measures to protect the population, from quarantine of the sick, maintaining distance, closing borders, and thus closing countless facilities that had a strong negative impact on the economy.

The purpose of this paper is to show how certain capital markets are reacting to the emerging crisis and how their ability to cope with the aforementioned pandemic is moving. For this research, we observed data on the movement of stock market turnover and the stock index of some regional and world stock exchanges.

The methodology for the purposes of this paper, in order to fulfill the set goals, we used available data that, through statistical processing, show what the impact of the pandemic was on the activities of the stock markets. For example, the American, some of the larger European stock exchanges and the stock exchanges of South-Eastern Europe were chosen. Hence, this paper offers a literature review of relevant research on the same or similar topic and their sublimation in order to make a comparative analysis.

1. SIGNIFICANT DECLINE IN WORLD ECONOMIC ACTIVITY

The emergence of the virus and its rapid spread caused a global health crisis, but the virus also had another negative aspect, deepening fear in all segments of economic activity, investment, stock market trading and stagnation of capital investment worldwide. The OECD also released a report on the situation, which states that the current situation could have a very negative effect on the economy. It should be noted that the report is based on data that has not yet been fully processed given the resurgence of the corona virus now with its subtypes. In the context of the decline in global economic growth, the OECD states that restrictions on the movement of people, goods and services, as well as quarantine measures, have drastically reduced production in domestic demand in the EU and the US, which is consequently having an increasingly negative impact on the rest of the world economy.[1]

It is not surprising given the significant role of Europe, USA and China in global supply chains, especially when it comes to industries such as stock markets, transport and public investment. As the coronavirus initially spread outside of China, it is increasingly likely that the impact of the epidemic on the global economy will be greater than previously expected, and analysts have cut growth estimates, while stock prices in global markets have started to fall sharply.

Global GDP was forecast to grow by just 2.4 percent in 2020, down from 2.9 percent the previous year. The OECD and the IMF have warned that negative growth is possible in the coming years. Global growth fell to

[1] OECD. *Coronavirus (COVID-19): SME Policy Responses*. Retrieved from https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/, 2021.

just 1.5%.[2] That was the economic cost of absenteeism, lower productivity, reduced movement of goods and services, and investment. The recommendations were for governments to provide effective and well-supported public health and financial measures to prevent major consequences and policies to protect the incomes of vulnerable social groups and businesses during the spread of the virus. It was important to ensure the liquidity of small and medium-sized companies and to avoid the bankruptcy of solvent companies that were most affected by the measures to stop the spread of the corona virus. The specificity of this crisis is reflected in the fact that, unlike the world financial crisis that caused a drop in aggregate supply, the crisis caused by the pandemic led to a drastic drop in aggregate demand, which is particularly problematic for developing countries whose economies rely on the export of raw materials and services.

The integration of countries in world trade is directly related to economic growth and development. The research results confirm the causality between the openness of the economy, growth and income distribution.[3] Export-led economic growth is beneficial to countries because it facilitates foreign exchange inflows, increases production, creates new employment opportunities and increases overall commercial value.[4] According to certain studies, the export of high-tech products, the growth of stock markets, high capital investments is particularly important for the economic growth and development of countries. Analyzing the relationship between high-tech exports and economic growth in EU member states in the period 1998-2017.[5] found that it has a significant impact not only on economic growth, but also on gross fixed capital formation and employment. The increased inflow of foreign direct investments, increase in turnover on the stock markets in the short term causes economic growth and confidence in the financial system which contributes to financial development and involvement in international trade which ensures sustainable economic growth.[6]

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2 OECD, *A fragile recovery*, https://www.oecd.org/economic-outlook/march-2023/, 2023.

3 Mazur, M., Dang, M., & Vega, M.: *COVID-19 and the march 2020 stock market crash. Evidence from S&P1500*. Finance research letters, 38,2021, 101690.

4 Zeren, F., & Hizarci, A. (2020). The impact of COVID-19 coronavirus on stock markets: evidence from selected countries. Muhasebe ve Finans İncelemeleri Dergisi, 3(1), 78-84.

5 Okorie, D. I., & Lin, B.:Stock markets and the COVID-19 fractal contagion effects. Finance Research Letters, 38,2021, 101640.

6 Ashraf, B. N.: Stock markets' reaction to COVID-19: Cases or fatalities?. Research in International Business and Finance, 54,2020, 101249.

Experiences from past financial crises have shown that trade in financial markets is the mechanism through which the effects of the crisis are reflected, that is, that trade is the most obvious economic link between countries. The crisis caused by the pandemic of the Covid-19 virus took on the character of a global economic recession because it was caused by a negative exogenous shock whose effect spread throughout the entire economic system, causing economic decline and recession.

The crisis caused by the pandemic affected not only the volume of trade on world stock exchanges, but also the value of the shares themselves and the entire commodity structure of international trade. According to OECD data, in 2020 the decline in the value of international trade in services amounted to 16.7%, which is twice as much as the decline in the value of trade in goods (-8.2%), which is a consequence of the introduction of measures to lock in simultaneously increasing the demand for certain goods.[7]

2. STOCK MARKETS ANALYSTS DURING PERIOD OF COVID – 19

The financial market shock due to Covid-19 has stimulated interest in empirical research. It is interesting that this phenomenon entered the sphere of the stock markets, which were considered one of the most diversified assets in the portfolio of the states' finances. The theory of efficient market hypothesis (EMH) assumes when the stock price fully reflects all relevant market information. However, the theory faced pros and cons. For example, Charfeddine et al. find that stocks, financial derivatives, bonds and cryptocurrencies are resistant to this kind of developments, while other studies find that the cost of capital is not only incorporated by market information, but also the result of psychological and behavioral finance.[8] The discussion of the theory is still ongoing and there is no final conclusion by academic researchers and financial practitioners; therefore, this study contributes to a better understanding of stock market returns and volatility. Preliminary research related to the impact of Covid-19 on the stock market is still being developed.

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[7] EMAN: International trade after the pandemic: New challenges and opportunities. In the international scientific conference on economics and management (EMAN)., 2021, Retrieved from https://doi.org/10.31410/EMAN.2021.9

[8] Charfeddine, L, Karim Ben K, Goodness C. A, and Rangan G: Time-varying efficiency of developed and emerging bond markets: Evidence from long-spans of historical data. Physica A 505, 2018, 632–47

Some studies have found that globally oriented companies with exposure to China have seen their shares decline, while companies in the natural gas, software, food and healthcare sectors in America have performed positively during the Covid-19 pandemic.[9] Another study showed that the South Korean stock market was more resilient than the French stock market during the pandemic.[10]

Charfeddine used GARCH to analyze the volatility of stock indices during the Covid-19 pandemic. Using data for the top 10 countries based on GDP from January 2019 to June 2020, it found that volatility during Covid-19 was higher than the normal period[11]. New evidence from estimates the volume of volatility and open interest in the Nifty Index futures of the National Stock Exchange of India using a GARCH model.[12]

They suggest that trading volume has a stronger impact on volatility than open interest or open contracts in the futures market. A long-term perspective of stock market volatility was conducted by Bai et al., focusing on pandemic infection and stock market volatility in the US, China, UK and Japan from 2005 to 2020 by applying GARCH-MIDA. They find that there is a significant negative impact on the persistent volatility of international stock markets up to a 24-month lag of the pandemic.[13] In fact, in the early days of the pandemic, the US stock market experienced a decline. From Chart 1, we can see that the stock market has been seriously affected by Covid-19. S&P 500 falls by a third in a short period, from 3380 points on February 14, 2020 to 2237 points on March 23, 2020.

Hence, empirical findings further confirm this intuitive conclusion that Covid-19 negatively affects stock market downside risk. We find that the severity of the pandemic, as a proxy for the growth rate of daily new confirmed

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9 Mazur, M, Man D, and Miguel V.: COVID-19 and the march 2020 stock market crash. Evidence from S&P1500. *Finance Research Letters* 38, 2021, 101690.

10 Thorbecke, W.: The Exposure of French and South Korean Firm Stock Returns to Exchange Rates and the COVID-19 Pandemic. *Journal of Risk and Financial Management* 14, 2021, 154.

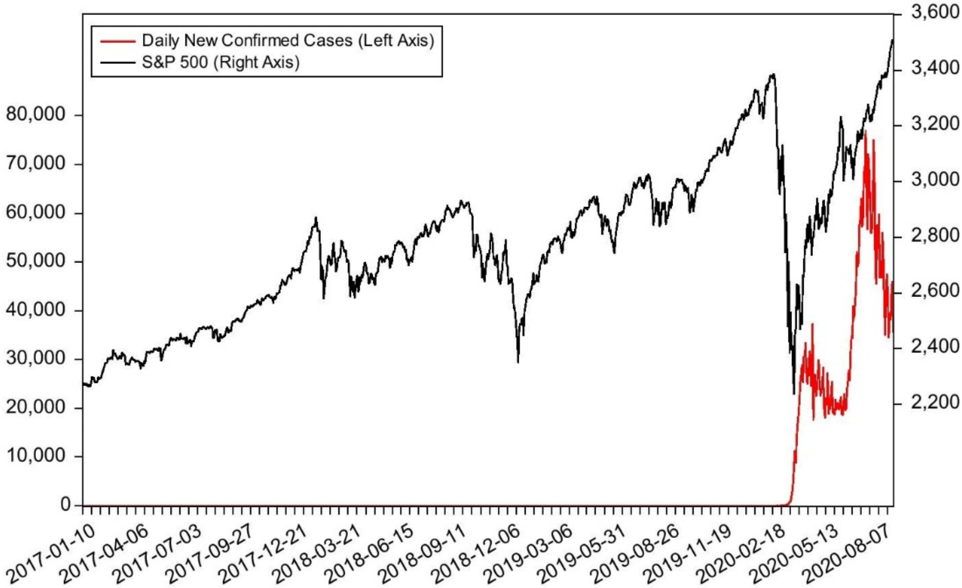
11 Charfeddine, L, Karim Ben K, Goodness C. Aye, and Rangan G. Time-varying efficiency of developed and emerging bond markets: Evidence from long-spans of historical data. *Physica A* 505, 2018, 632–47

12 Dungore, P. P., and Sarosh Hosi P.:Analysis of Volatility Volume and Open Interest for Nifty Index Futures Using GARCH Analysis and VAR Model. *International Journal of Financial Studie* 9, 2021,7.

13 Bai L, Wei Y, Wei G, Li X, Zhang S: Infectious disease pandemic and permanent volatility of international stock markets: a long-term perspective. *Finance Res Lett*, 2020, 101709

cases, has a significant negative impact on the conditional skewness of market returns, i.e. the risk of a stock market crash.[14] It is also consistent with Liu et al, on the Chinese stock market, indicating that the pandemic increases the risk of a stock market crash.[15]

Chart 1. US stock market activity before and during the pandemic



Source: Youssef, M., Mokni, K. & Ajmi, A.N. Dynamic connectedness between stock markets in the presence of the COVID-19 pandemic: does economic policy uncertainty matter?. Financ Innov 7, 13 (2021). https://doi.org/10.1186/s40854-021-00227-3

Luy et al, analyzed the volatility of capital markets during the first wave of Covid-19. The data were analyzed using modified cumulative sum of squares (MICSS), which reveals that structural breaks in volatility in many sectors, except for consumer durables, information technology and property.[16] This section will acknowledge the current literature on the Covid-19 pandemic and its impacts on financial markets. When it comes to the comparison between

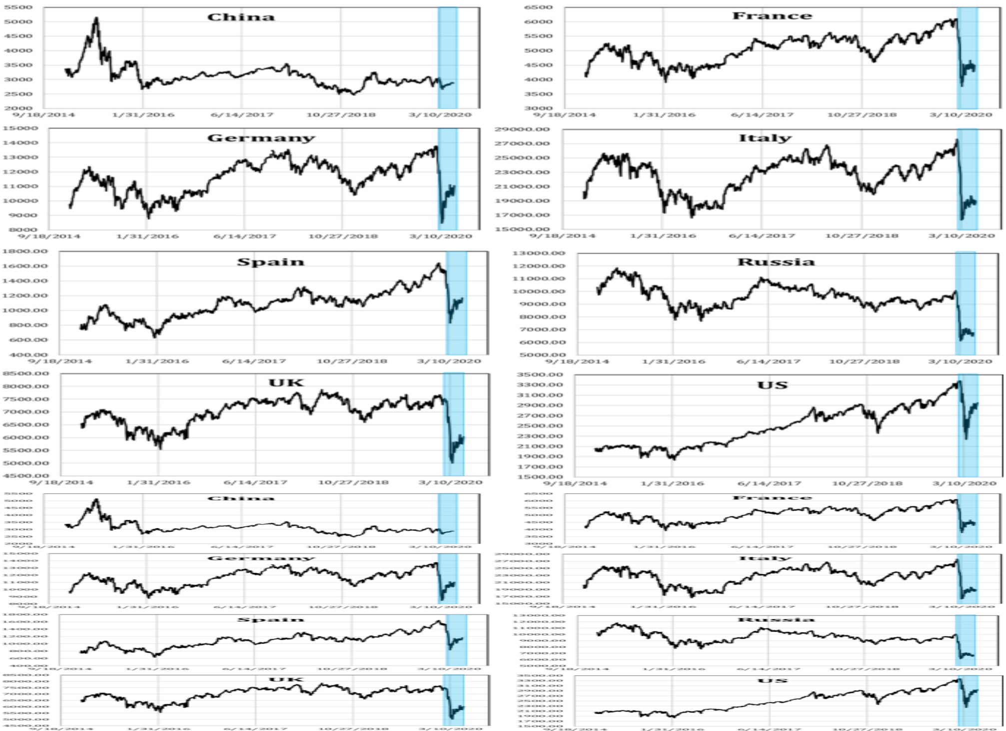
[14] Baker, Scott, Nicholas Bloom, Steven Davis, Kyle Kost, Marco Sammon, and Tasaneeya Viratyosin. 2020. *The Unprecedented Stock Market Impact of COVID-19*. No. w26945. Cambridge: National Bureau of Economic Research.

[15] Liu Z, Huynh TDL, Dai P-F (2021) *The impact of COVID-19 on the stock market crash risk in China*. Res Int Bus Financ 57:101419

[16] Liu Z, Huynh TDL, Dai P-F: *The impact of COVID-19 on the stock market crash risk in China*. Res Int Bus Financ 57, 2021, 101419

the Covid-19 event and other public health crises, Schell et al indicated that the coronavirus outbreak shows significant negative abnormal returns in most stock markets, while this phenomenon does not exist for other events such as Ebola, Zika virus and other viruses.[17] In the same direction, the study of Ambros et al. investigates the role of news on stock market returns and volatility.

Chart 2. Comparison between different



Source: Youssef, M., Mokni, K. & Ajmi, A.N. Dynamic connectedness between stock markets in the presence of the COVID-19 pandemic: does economic policy uncertainty matter?. Financ Innov 7, 13 (2021). https://doi.org/10.1186/s40854-021-00227-3

This existing literature shapes our motivation to use GARCH-S, capturing skewness effects, to measure the possibility of market crashes during these unprecedented events. As shown, all stock market indices examined showed a sudden and abnormal decline near the beginning of the Covid-19 pandemic. The models show that the SE index saw a slight drop from 3000 to around

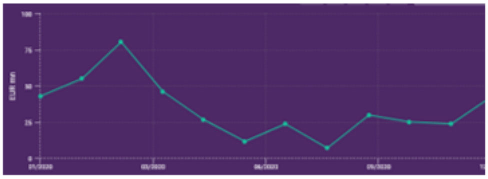
[17] Schell D, Wang M, Huynh TLD: *This time is indeed different: a study on global market reactions to public health crisis*. J Behav Exp Finance , 2020, 100349

2500 points. However, European stock markets and US stock markets were the most affected by the spread of the new contagion shock and saw unprecedented closes in the spot prices of their indices. In Italy, just before the outbreak of the pandemic, the index was above 27,000 points, but fell to below 17,000 points with the start of the pandemic. (Chart 2)

3. STOCK MARKETS ANALYSIS DURING THE PANDEMIC IN SOUTHEASTERN EUROPE - BALKAN COUNTRIES

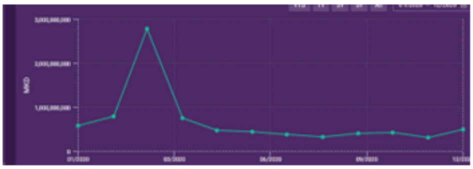
In this section, an analysis will be made of the stock markets of some of the Balkan countries and those stock market activities and achieved sales during the time when the pandemic was reaching its peak at the global level. In doing so, the stock exchanges of Serbia, Greece, North Macedonia, Bulgaria, Slovenia and Croatia will be included.

Chart 3. Financial Market - Equity Market -Turnover Value/Volume/ Ratio

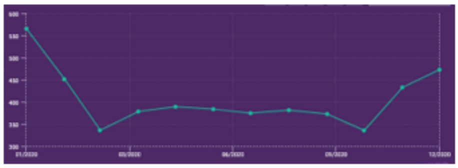


Serbia Stock Exchange- Belgrade (BELEX)

Zagreb Stock Exchange (ZSE)



Macedonian Stock Exchange (MSE)



Athina Market Index (Athex)

Ljubljana Stock Exchange (LJSE)

Bulgarian stock exchange-Sofia (BSE)

Source: insights.ceicdata,2023.Available at: https://insights.ceicdata.com/Untitled-insight/views

The above Chart 3 shows the activities of several Balkan stock exchanges. From the data, it is clearly seen that there is a significant difference in activities compared to the time period, and the same applies to as many as five of the six analyzed stock exchanges. Namely, the five stock markets have seen a significant drop since the third month of 2020, when the first cases and restrictions that significantly contributed to reduced economic activities in the states began to appear, as well as travel bans from one state to another that applied to almost every state country from the Balkans.

The Southeast Europe relies heavily on a steady flow of remittances, financing domestic demand and investment. Remittances, which account for 10% of GDP in the Southeast Europe, are likely to decline due to travel restrictions and rising unemployment linked to an expected economic contraction in the EU.[18] As for the fear and anxiety caused by the coronavirus infection, we have seen that the financial markets are affected by every news and announcement they receive. The financial markets of the Balkan countries, which are included in our research, are the leading countries and stock exchanges affected by this situation. The increase in deaths and events from COVID-19 and the increase in the number of affected countries have led to an increase in investment considerations and volatility in these financial markets. Although China was the first country where the coronavirus epidemic began, it emphasized that its financial market is more stable than other markets.[19]

Verikios et al discussed the effects of the epidemic on the economy at the regional level, regions with a lower level of world economic integration will be more strongly affected than more integrated regions.[20]

The fall of the stock markets in the observed countries of the Balkans had negative effects on large professional investors, such as pension and insurance companies, which traditionally invested huge sums of money in instruments that are traded on the stock market, and of course the same conclusion applies to all analyzed countries, that is that in the period of analysis starting in March when the pandemia had the biggest momentum in our region, all stock market indices dropped dramatically.

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[18] Xin H. China Daily-Hong Kong; China Financial Market Remains Stable Amid COVID-19 Impact., 2020.

[19] Idem.

[20] Verikios G., Sullivan M., Stojanovski P., Giesecke J.A., Woo G. Centre of Policy Studies (CoPS); 2011. The Global Economic Effects of Pandemic Influenza.https://static.rms.com/email/documents/liferisks/papers/the-global-economic-effects-of-pandemic-influenza.pdf

Considering the high degree of unpredictability of the pandemic, we believe that decision-makers in the observed countries of the Southeast Europe should be very careful when choosing future measures, especially considering the fact that now the space for countercyclical fiscal policy is narrowing in many countries.

Conclusion

Integration in international financial flows contributes to improving competitiveness and encourages economic growth and development. For developing countries, greater involvement in financial markets enables the realization of the effects of economies of scale, a higher degree of capacity utilization and the attraction of foreign direct investments. For the region of the Southeast Europe, the role of stock markets is evident in many fields, so the increase in economic movements also means an increase in the activities of the stock market and potentially indicates the general well-being of the economy of a certain country. We have proven that the activity of all stakeholders in economic and financial movements is the most important from the point of view of continuous investment in financial products and capital investments. If people and economic entities are prevented from any occurrence and abstain from their economic activities, in this case the fear of the unknown from the Covid pandemic, then there will be a chain disruption of all financial and economic markets. The stock markets in the Balkan countries are relatively highly incorporated in the world financial markets in such a way that in a short period of time the fall from the leading countries EU, USA and others was transferred to these stock market indexes as well.

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