COVID-19 and a World in Chaos

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INTRODUCTION

SERDAR YURTSEVER

The process of combating the COVID-19 virus, which spread rapidly after it emerged in Wuhan, China and deeply affected all countries of the world, has completed almost two years. The COVID-19 pandemic is the second large-scale pandemic in modern world history, after the Spanish flu pandemic that broke out in 1918 and had a devastating effect on all countries of the world. The Spanish flu stands out with the number of deaths it caused. Although the number of deaths caused by the COVID-19 pandemic has not been as much as the Spanish flu so far, the effects it has created have entered the homes of almost every individual in the world.

Many conspiracy theories have been put forward regarding the emergence of the COVID-19 virus. Although more than two years have passed since the virus appeared in Wuhan, China, there is no clear determination that the health authorities of the countries involved, or even the World Health Organization, could make about its emergence. It was not possible to determine a clear and definite starting point from the examinations carried out by the World Health Organization in China. Claims that the virus may have been produced in an artificial environment still continue to be on the agenda.

Although the negative effects of the COVID-19 pandemic create problems in many areas, the first test against the pandemic has been the health systems of the countries. First of all, the lack of a known treatment method against this previously unknown virus has created a confusion in health systems. The world witnessed the rapidly spread capacity of the virus to cause deadly results, until the first applications regarding the treatment were successful. The rapid spread of the virus caused abnormal increases in the number of patients applying to health systems. While some of the patients survived the disease, many patients had to go through a process that required intensive care treatment, and large numbers of those with weak immune systems or in old age could not respond to the treatments being applied and deaths occurred. There were not enough beds in intensive

care units, patients were hospitalized in hospital corridors or hospital gardens, and there were difficulties in finding places to bury the deceased.

With this critical picture in health systems, state governments have taken action to prevent the spread of the virus and to produce a vaccine against this virus with treatment. Treating the illness is far from being a solution, because much more than the number of treated patients continued to apply to hospitals. It was understood by all countries of the world at the very beginning of the epidemic that the solution was to prevent the spread of the virus and ensure the immunity of people against this virus, and measures and studies in this direction were rapidly implemented.

The main method to prevent transmission has been to take physical measures. Intensive information activities were carried out to raise awareness of people on masks, distance and hygiene. However, the inability to prevent transmission due to the emerging deficiencies in compliance with these measures, which remain at the individual level, prompted the state administrations to take more drastic measures. Thus, the period of bans, which restricted people from going out on the streets and included full closures according to the course of the number of cases began. Due to the inadequacy of the restriction measures taken only within the country, the entries and exits between the countries by air-land-sea routes were stopped from time to time.

Closing international borders and taking strict measures inside countries helped prevent the spread of the pandemic, but in the short term, it caused major problems in both global and national trade. It is expected that the measures taken by the states during the pandemic period will cause an excessive increase in the unemployment rate, a collapse in the business world and a stagnation in the global economy in the long run. In times of great uncertainty in the economy and stress in the markets, the prices of financial products react negatively to news about the economy and market conditions. The COVID-19 pandemic brought along economic uncertainties and caused very sharp declines in the markets. In the first chapter, Erdem Öncü tries to clarify the relationship between the Infectious Disease Stock Market Volatility Monitor (EMV-ID), which is the COVID-19 index created from newspaper reports and stock market indices, with the SP 500 (USA), FTSE 100 (England), DAX 30 (Germany), SSE 50 (China), JPX 400 (Japan), RTS 50 (Russia), and BIST 100 (Turkey) indices.

The COVID-19 pandemic process has radically changed the understanding of digital marketing and e-commerce, which has already become widespread

with globalization, and has opened a new era in marketing strategies. The marketing approach in this process has created new trends by differentiating in parallel with the conscious and constantly researching consumer behaviors. Şükrü Umarbeyli discusses the processes of marketing strategies, new marketing trends and strategies, technological developments and new marketing innovations, developing synergy, neuro marketing, and consumer behaviors in the world in his work in the second chapter.

In the efforts to prevent the spread of the COVID-19 virus, all countries are stuck in the dilemma of 'economy or health?'. In order for the measures taken in the field of health not to affect the economy, the states have taken various measures, but the health issue has been more dominant, and the economy has been kept alive with state supports. In the work of Isah Wada in the third chapter, the economic policy measures and successes followed around the world are investigated. An advanced basic policy perspective is proposed by using dynamic estimation techniques used to obtain data on global economic output and economic policy uncertainty due to the global pandemic.

The COVID-19 pandemic has caused great damage to the global economy and led to the existence of great uncertainties in economic policies. This great shock that the pandemic has created in the economy has caused people in various income groups and companies of all sizes, especially in developing countries, to face an unsustainable debt burden. In the long run, a serious economic recession has become inevitable. Wagdi Khalifa, in his work in the fourth chapter, argues that the issues of an integrated economy direction map which includes issues such as prioritizing companies' critical activities, determining emergency plans for surprise disruptions, making long-term plans, implementing long-term support plans by governments to companies, and increasing cooperation between all organs related to the economy will be the key measures to reduce its impact on the economy.

The COVID-19 pandemic has undoubtedly deteriorated the economic and financial situation in many countries, and has also affected working life. There have been closures for months in many countries, and some of the working population has tried to run their businesses by working from home. It can be said that this segment is more fortunate than the segment that does not have the opportunity to work from home due to the nature of their jobs. It is clear that the working population is affected not only economically but also mentally by these changes. In her work in the fifth chapter, Ayşen Berberoğlu discusses how the COVID-19 pandemic has

affected the working life and working population around the world from a psychological perspective.

It is noteworthy that the COVID-19 virus, which emerged in such a remote part of the planet as a city market in China, spread to five continents in nine days. This is because of the high rate of transmission of the virus, as well as the weighty role China plays in the worldwide production and supply chain. The contribution of the air, sea and land transportation of China's intense trade with Europe, America, Asia, Oceania and Africa in the rapid spread of the virus cannot be ignored. In this process, all countries have faced serious challenges in the pandemic risk management process, not only in terms of public health, but also in terms of logistics operations capabilities to sustain their economies and employment levels. Since the onset of the COVID-19 pandemic, supply chain managers have faced massive demand spikes and supply fluctuations. While all life dynamics in the world are in a great recession, it has once again emerged how important supply chain and logistics operations are for humanity. In the sixth chapter, Tolga Öz evaluated the new normal of the logistics industry within the framework of risk management approach during the COVID-19 pandemic and the post-pandemic period.

Key concerns in the sustainability paradigm should be initiated by clarifying appropriate policies during the pandemic period. However, the silo-based approach to path-dependent sustainable tourism has resulted in various social, health, environmental and economic hazards in the event of a pandemic. However, incorporating sustainability into tourism requires a governance process framework where inclusion is fundamental to its success. In his work in the seventh chapter, Amir Hossein Khadem Olomoom discusses the effects of the pandemic on the tourism sector of Northern Cyprus, taking into account the policy-making process, stakeholder engagement and governance process structures.

During the COVID-19 pandemic process, similar to other humanitarian emergencies, education has been one of the fastest and most affected sectors. Meryem Öksüzoğlu, in her work in the eighth chapter, discusses the importance of education during pandemics, as well as providing a critical analysis of the problems and measures taken in the context of education, especially the problems caused by COVID-19 and the losses experienced. In that study, she also suggests measures that can be taken to minimize or eliminate educational losses caused by the COVID-19 epidemic in schools, how practitioners can keep face-to-face education in

schools during the COVID-19 epidemic, and new measures based on experience gained so far.

One of the areas deeply affected by the COVID-19 pandemic is education. Although e-learning emerged as the only solution to maintain the education system, many difficulties were encountered in practice. States have approached e-learning in order to prevent their children and young people from losing out on their education. However, e-learning, which is the only method in the process, has turned out to be more complex than it seems. Ahmad Alzubi, in his work in chapter nine, discusses the main challenges faced in e-learning, such as that e-learning requires equipment and internet access as integrative tools to begin with, and not every student and teacher has this kind of convenience.

The World Health Organization (WHO) has undertaken the most important mission during the COVID-19 pandemic process. The WHO has a special program called 'Health Emergencies Program' to combat epidemics. Emergency prevention services include vaccination for pandemics and epidemics. There is serious debate as to whether this program is sufficient or not. The WHO's management of the pandemic appears problematic, even for countries with small populations. In his work in the tenth chapter, Hüseyin Karşılı examines the successes and failures of the WHO in the management of the pandemic process.

At the time of the preparation of this book, a single vaccine has not yet reached 30 countries. Poor countries, resigned to their fate, are waiting for vaccines to reach them. Activists have called this inequality a "vaccine apartheid" and urged the world's largest pharmaceutical companies to share their know-how to accelerate the global vaccination project. However, these calls have not received a response so far. In the eleventh chapter, Walid Menesi examines the process that led to the emergence of the concept of a vaccine apartheid and draws attention to the importance of increasing the ability and capacity to produce vaccines in the world.

The environment created by the COVID-19 pandemic has forced states to take drastic measures, often at the expense of basic human rights. In order to prevent the transmission of the virus, individual, social and economic rights and personal freedoms have been limited. These limitations had serious effects on individual, social and institutional levels. Often referred to as the 'new normal', this period has become the scene of conflicting interests such as a spectrum of anti-vaxxers on the one hand and anti-democratic governments on the other. In his work in the twelfth chapter,

Hakan Şonya seeks answers to the questions of whether comprehensive restrictions on human rights applied in exceptional circumstances can be justified and whether states can design a solution without compromising human rights principles.

With the change in the perception of security in the last century, new threats have started to emerge as new security concerns in international and global relations. While traditional and conventional threats are the main elements in the threat assessments of states, unusual threats such as terrorism have begun to be the focus of attention. In addition to these, ecological disasters and epidemics such as global warming appear as factors affecting the field of international relations. In this context, the COVID-19 pandemic has changed and affected the political, economic, security and social relations between states. Discussions on the COVID-19 vaccine pandemic passport and travel restrictions seem to be involved as a factor in the balance of power in international relations. Mehmet Nesip Öğün, in his work in the thirteenth chapter, examines the effects of COVID-19 on terrorism from a global perspective.

During the emergence and spread of the COVID-19 pandemic, many conspiracy theories have been produced by various sources that the virus was produced in an artificial environment. As long as the Biological War-type exists in the literature, it is possible for such scenarios to occur all the time. Up to the present, a state's 'Political, Military, Economic, Socio-Cultural, Demographic, Geographical, Geopolitical, Scientific, Technological, and Psychological' powers were considered as 'National Power' elements. In the fourteenth chapter, Serdar Yurtsever claims that the possibility of using a situation similar to the pandemic process we are experiencing as a means of war should be taken into account, that there is a need to include the "Health Systems, Personnel and Equipment" in the elements of national power, and that the pandemic has caused serious changes in the security perceptions of the states.

Due to the effects of the COVID-19 pandemic, neither the economy nor society is far from being as we knew it. This new type of coronavirus, which is transmitted at an unprecedented rate, can be considered as the last (we hope to be the last) of the series of diseases caused by HIV, Ebola and other SARS type viruses, or as diseases that have emerged in recent years such as bird flu and swine flu. When all these diseases are considered separately, they all have a common feature. All are zoonotic diseases originating from animals. People who think of nature as a never-ending resource are far from using nature's blessings in a sustainable way. The

scientists, who have constantly stated that environmental awareness should be increased, have also constantly brought onto the agenda that the solution to the destruction of nature is environmental education. The only way for nature and the world to breathe is with environmentally sensitive societies. The pressure on wildlife has decreased as a result of the decrease in carbon emissions and consumption due to the shutdown for the pandemic. In his work in the fifteenth chapter, Nazım Kaşot examines the effects of the COVID-19 pandemic on the wildlife of our planet and states that environmental education-based studies should be increased in order to build a world where nature will not be harmed by the increase of conscious societies in the next period.

With the chapters in this book, it is aimed to examine the effects of the COVID-19 pandemic in various fields. As in the field of health, various effects have occurred at different levels in education, the economy, international capital markets, banking, marketing, tourism, aviation, work life and international relations. Although there are early studies that have addressed these issues, we are in a period when the details of the process that has been experienced since the beginning of the pandemic are settled and begin to become clear, considering the evaluations that the pandemic will be largely under control in the autumn of 2021, as vaccination is progressing. Therefore, it is considered that this study will have addressed a broader process than other early studies.

CHAPTER I

IMPACT OF COVID-19 ON INTERNATIONAL CAPITAL MARKETS

ERDEM ÖNCÜ

Introduction

Novel Coronavirus Disease (COVID-19) is a highly contagious disease, which was first seen in Wuhan Province of China on December 1, 2019, and which causes respiratory problems (fever, cough, and shortness of breath) and can turn into pneumonia and cause deaths (T.R. Ministry of Health, 2020). Due to the high rate of transmission, COVID-19 quickly spread to the whole of China and then to the whole world. It was declared a pandemic by the World Health Organization on March 11, 2020, as the number of cases and deaths caused by it increased rapidly in the countries where COVID-19 spread.

Through the measures taken to combat COVID-19, the economy has suffered a great loss with the cessation of educational activities, the transition to working from home and the introduction of curfews. In order to meet the short-term needs of the real economy sector in the COVID-19 process and to continue its activities in a healthy way in the long term, special support packages are needed for the sectors.

It is not yet clear how long the coronavirus will last, but it has already dealt a great blow to the economies of many countries, especially the Chinese economy. China is an important production center for the world's leading companies.

All of the countries at the global level had to take some protective measures in order to control the COVID-19 pandemic and the rapidly increasing spread, which affected the whole world. During the process, the closure of workplaces, the introduction of curfews in order to ensure social isolation, the introduction of travel restrictions, and many other measures

adversely affected many sectors of the economic structure, and some sectors were hit hard. Sectors covering transportation, education, sports and trade, and all other activities which are carried out at the global and national level, have faced the negative effects of the COVID-19 pandemic. For example, increases in death rates, curfews and restrictions, and concerns about disease transmission, adversely affect the work of the workforce. This situation has some negative effects on supply in general. Furthermore, as a result of the epidemic, global activity has decreased significantly. When looked at, as a result of the restrictions on the areas where people are concentrated, closures and similar results occur in some of the business lines that continue their activities in these areas. The restriction of social activities, on the other hand, leads to a significant contraction period in the manufacturing and service sectors. When it comes to the demand side, the way of reducing consumption by households can be shown as an example. Worry about losing income due to future uncertainties causes a general decline in demand, especially for durable consumer goods.

If economic agents (consumers, producers, and company executives) expect bad things to happen, bad things will happen, and if they expect good things to happen, good things will happen. Units act according to expectations. For example, if they expect inflation to rise, they will increase the prices of goods and services. As a result, inflation has risen. The COVID-19 pandemic is also damaging the economy by driving expectations in a negative direction.

Table 1. Effects of the Pandemic on the Economy

Indicator	**How does it change?**
Gross Domestic Product	The economy shrinks as demand and exports fall.
Unemployment	Companies with reduced earnings will have to lay off workers.
Public Debts	As public expenditures will increase and taxes will decrease to support the economy, public borrowing will increase.
Budget Deficit	The budget deficit has increased for the following reasons.
Imports	Since there will be a decrease in production and exports, the demand for imported inputs will decrease and, therefore, imports will decrease.

Exports	As production and imports will decrease in all other countries, our exports will also decrease.
Tourism Income	As the number of incoming tourists will decrease significantly, tourism revenues will decrease.
External Borrowing	Due to the desire to avoid risk, the possibility of external borrowing is very low.

Source: Eğilmez (2020)

Countries have to take precautions to stop the collapse of the economy. Precautions to be taken can be classified under the headings of monetary policy, fiscal policy, and other policies.

Table 2. Expected Precautions

Monetary Policy	Fiscal Policy	Other Policies
Interest rate cuts	Increases in public spending	Unemployment prevention incentives
Monetary expansion	Discounts on taxes	Price control applications
Discounts on required reserves	Tax and debt deferrals	

Source: Eğilmez (2020)

As a result of the precautions taken:

- Due to the expectation that trade will remain at a low level during the pandemic period, an increase in inflation will be observed in the next period.
- Budget deficit will increase and there will be an increase in public debt.
- Abnormal increases in unemployment can be curbed. If price controls are exaggerated, a black market may arise due to a lack of supply.

Economic contraction also affected the financial sector, and countries had to develop measures to face various risks. The financial sector is very important in terms of increasing demand and production capacity in the process. Considering that the pandemic process will be temporary, the liquidity requirement is expected to increase over time. Meeting such a need will only be possible with a strong financial system. However, the tendency for most loans to go unpaid as a result of the shock may put banks in jeopardy in the lending process. At this point, the increase in

bank losses will be viewed as an important indicator of whether new loans will be made. If the stagnant structure of the economy becomes permanent, it is possible that households and the real sector will not demand credit, rather than a restriction on credit supply. The weakening of the financial system primarily disrupts the flow of funds in the domestic markets. Then it causes international problems.

Literature

The 1918 flu pandemic lasted from January 1918 to December 1922. According to estimates, approximately 500 million people, corresponding to one-third of the world's population at that time, were infected with this virus. Around the world, approximately 50 million people lost their lives, and around 550-675 thousand of these deaths occurred in the US. In other words, 66 per ten thousand of the American population died due to the pandemic at that time, and the death rates for the healthy and young population between the ages of 18 and 44 remained high (Brainerd & Siegler, 2003).

Because the microbiological structure of the pathogen that caused the 1918 Influenza epidemic could not be determined exactly, doctors offered different and contradictory recommendations for treatment and prevention. The disease was contagious and one of the best ways to control it was to isolate the infected person. However, it was not possible to implement a large mass quarantine at a time when the war conditions were still felt. Due to both war and epidemic conditions, the socio-economic structure faced major problems. Velde (2020) draws on an assortment of high-recurrence information to evaluate the momentary financial effect of the 1918 flu in the United States. Although the measures for the 1918 flu show similarities with the current situation in many respects, they do not include the closure of workplaces in non-essential sectors. Ultimately, non-drug methods such as social distancing, isolation, and mass hygiene are encouraged in all major cities. However, there were differences between cities and regions in terms of the speed of taking measures and the severity of their implementation. In the literature on the 1918 flu, it is seen that measures other than drug treatment contributed significantly to preventing death rates from peaking and that they also provided a moderate benefit to total death rates by preventing excessive deaths. Measures bring economic consequences. The spread of the new Coronavirus (COVID-19) has resulted in stock market crashes, monetary instability, a decrease in apparent loan costs, and withdrawals of genuine

financial action. Now, there is considerable vulnerability around the inevitable size of the pandemic and its financial ramifications, particularly as far as what the direst outcome imaginable could resemble. The Great Influenza Pandemic of 1918 gives a sensible upper bound as far as mortality and financial impacts (Barro et al., 2020).

When previous studies on coronavirus were examined, it was seen that many studies revealed the economic and financial effects of the virus with empirical findings. The most likely reason for this is thought to be due to the very recent occurrence of this condition, and because in previous years, there have been many studies investigating the economic effects of many epidemic diseases from this and similar roots.

When all of the studies were examined, the findings obtained from almost all of them were in the same direction, and it was observed that the economic effects of epidemics changed in direct proportion to the spread of the epidemic. Accordingly, the research was expanded and the most recent study summaries are presented in Supplementary Table 1.

Studies on COVID-19 can be summarized under three headings. First, researchers use econometric methods to argue that the COVID-19 period has adversely affected the stock markets (Ahmed, 2020; Al-Awadhi et al., 2020; Arafa and Alber, 2020; Ashraf, 2020; Atassi and Yusuf, 2021; Baek et al., 2020; Chebbi et al., 2021; Conturk, 2021; Del-Lo et al., 2021; D'orazio and Dirks, 2020; Erdem, 2020; Sherif, 2020; Smales, 2020; Tuna, 2021; Zoungrana et al., 2021). The negative impact spreads to other countries over time (Gharib et al., 2020). In a different finding, Vietnam is outside of the negative impact (Anh and Gan, 2020). Secondly, the popular field of study for researchers has been abnormal returns. In studies, it has been found that the pandemic period produces abnormal negative returns (Alali, 2020; Bannigidadmath et al., 2021; Dian and Kristawati, 2021; Liu et al., 2020; Öncü, 2021a; Orhun, 2020; Rahman et al., 2021). Finally, causality studies stand out. There is a causal relationship between the output of the pandemic period (cases and deaths) and stock returns (Adeokaya & Oliyide, 2021; Belaid et al., 2020; Bing & Ma, 2021; Ilgın & Sarı, 2020; Gürsoy, 2020; Özdemir, 2020; Wang & Emilov, 2020).

COVID-19 and Financial Markets

The New Coronavirus (COVID-19) damagingly affects the worldwide business sector. Governments' exacting arrangements, such as total lockdowns and harsh isolation policies, have significantly reduced monetary

activities all over the world. The unfavorable impacts of COVID-19 and its related monetary problems have caused high unpredictability in worldwide monetary business sectors (Zhang et al., 2020).

The sudden increase in COVID-19 cases worldwide in 2020 has had macroeconomic effects as many countries have entered a second quarantine. In the third quarter of 2020, multiple price bubbles were observed in the commodity markets due to the impact of COVID-19. Given the ongoing political and economic uncertainty due to COVID-19, it seems likely that investors will continue to buy the precious metal silver as a safe haven by supporting silver prices (Öncü, 2021b).

In the research of Kanizi and Öncü (2021), it is evaluated whether there is a statistically significant difference between the averages of basic banking indicators before and after the COVID-19 outbreak. It is foreseen that the effects of the practices implemented against the pandemic in the banking system on the financial statements will be clearly transferred in the following periods. In this case, it is understood that together with domestic public and private banks, the financial system provides liquidity supports, loan disbursements and delays to the maturity of loans so that the real sector and households are not adversely affected by the pandemic. The averages determined for foreign exchange positions in deposit banks differ between the off-balance sheet assets and liabilities in the off-balance sheet foreign exchange positions when compared to before and after the pandemic. When the results of the averages of loans before and after the COVID-19 epidemic are evaluated, a significant difference emerges in the averages of loans, depending on the data of the TRNC Central Bank. In general, it is seen that the average of credits has increased compared to the pre-epidemic period.

African financial markets have been portrayed as becoming more volatile during the pandemic; business sectors appear to have reacted to outside shocks caused by the health crisis. The fear of COVID-19 is related to an increment in African financial market volatility of about 7%. Increases in confirmed cases appear to affect the dependability of African financial markets. However, the death rate has had no impact on market dynamics (Del-Lo et al., 2021).

The COVID-19 pandemic has had a diverse impact on various financial exchanges, according to Ngwakwe (2020). The Dow Jones Industrial Average experienced a significant decrease in mean stock worth during the COVID-19 period, while the China Stock Exchange Composite Index

experienced a significant increase, higher than it had been before the pandemic. In terms of mean stock prices, the Euronext 100 and the SP 500 indices showed a weak contrast. Liu et al. (2020) examined the short-term impact of the COVID-19 pandemic on 21 leading securities exchange lists in major affected countries, including Japan, Korea, Singapore, the United States, Germany, Italy, and the United Kingdom. Furthermore, the financial markets of Asia have experienced more abnormal returns than other ones.

Strangely, during the COVID-19 period, the European and North American stock exchange markets were the essential beneficiaries and transmitters of the overflow. These findings suggest that, during the COVID-19 period, European and North American financial exchanges drove a significant portion of the return volatility on the world's leading local securities exchanges. To summarize, the extent of connections between local financial exchanges has changed fundamentally between the two sub-periods, with significantly more extreme interdependencies during the emergency time frame, which recommends that the movements noticed are expected in the pandemic period. Without a doubt, the drop in the Chinese stock market during the COVID-19 period did not cause a drop in the other foreign markets. Nevertheless, after January 2020, when Chinese health specialists were alarmed that the infection could be communicated individual-to-individual, consideration regarding the new sickness expanded drastically, and the European stock exchanges started to get affected first (Belaid et al., 2021).

Data and Method

This study clarifies that the relationship between the EMV-ID (Infectious Disease Equity Market Volatility Tracker), which is the COVID-19 index created from newspaper reports, and stock market indices is being investigated. The SP 500 (USA), FTSE 100 (UK), DAX 30 (Germany), SSE 50 (China), JPX 400 (Japan), RTS 50 (Russia), and BIST 100 (Turkey) indices are selected as stock market indices. Indices and the EMV-ID are obtained from investing.com and the Fred Data Pool, respectively.

Method

The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests and the Pearson Correlation test were used to carry out the research.

The Dickey-Fuller test is a test used to determine whether there is a unit root in the observed series. The equation for the Dickey-Fuller test is shown below:

$$y_t = \Phi y_{t-1} + \varepsilon_t$$

The Dickey-Fuller test may give biased results when autocorrelation is observed. For this reason, the Augmented Dickey-Fuller test is applied by developing the Dickey-Fuller test.

$$y_t = \Phi y_{t-1} + \sum_{i=1}^{p} \alpha i \Delta y_{t-1} + \varepsilon_t$$

The Phillips-Perron test was obtained by extending the ADF test. Weak dependence and heterogeneous distribution of error terms abandoned in the test are accepted. It is believed that the Phillips-Perron test can show stronger results than the ADF test (Yavuz, 2005).

Correlation analysis is a statistical method that reveals the direction, degree, and importance of the relationship between variables. The coefficient that indicates the direction and degree of the relationship is called the correlation coefficient.

$$r = \frac{n(\sum x\, y) - (\sum x)\,(\sum y)}{\sqrt{[\sum x^2 - (\sum x)^2]\,[\sum y^2 - (\sum y)^2]}}$$

Findings

Unit root tests investigate stationarity in a time series. A time series is stationary if a shift in time does not cause a change in the shape of the distribution. According to the unit root test results, all variables are stationary in their current form. In other words, since the first differences in the time series are stationary, the initial series is integrated into the first level.

Table 3. Unit Root Test

Variables	ADF	PP
DAX 30	-17,0908*	-17,0578*
SP 500	-23,1534*	-23,2962*
FTSE 100	-17,5038*	-17,6585*
SSE 50	-14,5196*	-14,4746*
JPX 400	-14,9887*	-15,5367*
RTS 50	-17,6464*	-17,6227*
BIST 100	-17,2350*	-17,1930*
EMV-ID	-1,8500	-6,1218*

*represents significance at a 1% level.

When performing any statistical test between two variables, it is always a good idea for the analyst to calculate the value of the correlation coefficient to know how strong the relationship between the two variables is. If the correlation coefficient is in the positive range, it indicates that the relationship between the variables is positively related and both values decrease or increase together. On the other hand, if the value is in the negative range, it indicates that the relationship between the variables is negatively correlated and both values will go in the opposite direction.

Table 4. Correlation Coefficients

	EMV-ID
DAX 30	-0.013997
SP 500	0.001584
FTSE 100	0.008547
SSE 50	-0.051631
JPX 400	-0.100061
RTS 50	0.011072
BIST 100	0.042836

The Pearson correlation test shows that EMV-ID is negatively correlated with the DAX 30, SSE 50, and JPX 400, and positively correlated with the SP 500, FTSE 100, RTS 50, and BIST 100. However, all correlation relationships are weak and statistically insignificant.

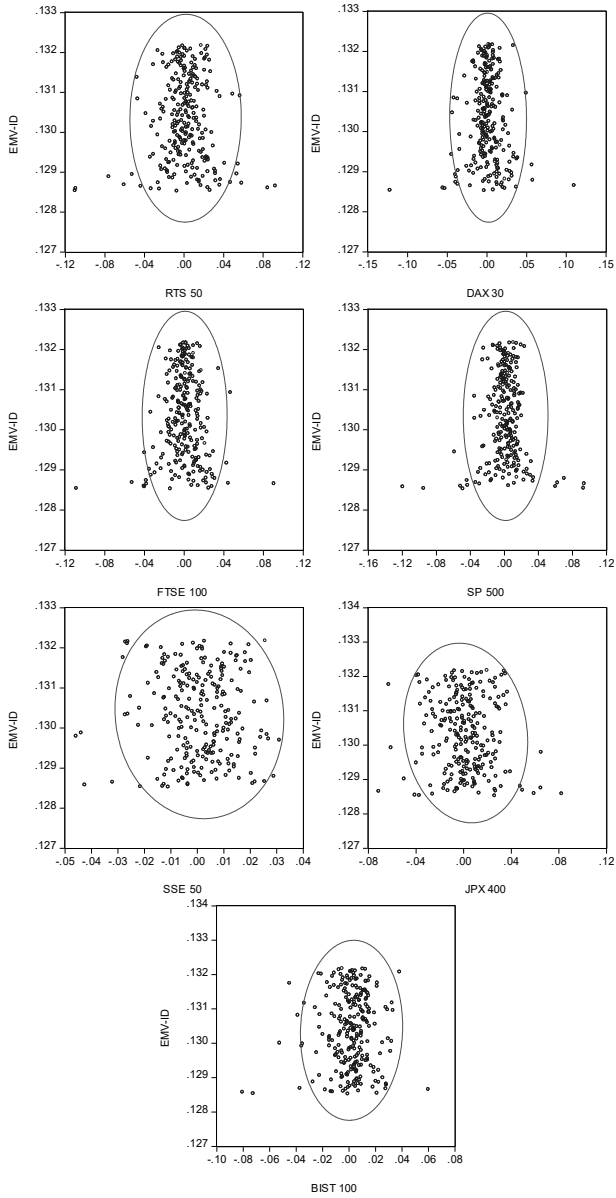

Figure 1. Confidence Elips Correlation Figures

The rejection of the existence of a statistically significant correlation relationship depends on the distribution between the variables. The distribution can be seen in the figure above.

In addition, a correlation relationship between the SP 500, FTSE 100, and DAX 30 indices is also observed. Unlike the previous findings, a statistically significant and positive relationship was found. The strongest correlation relationship is between the FTSE 100 and the DAX 30. Another strong relationship is between the DAX 30 and SP 500.

Table 5. Indices Correlation Coefficients

	DAX 30	SP 500
SP 500	0.525354*	-
FTSE 100	0.748790*	0.483710*

*represents significance at a 1% level.

Conclusion

The measures taken for the pandemic in 1918 are very similar to today. When looked at, decisions were taken to close the workplaces, except for those that were considered to be required to continue their activities at that time. In addition, especially in metropolitan cities, people were directed to pay attention to social distancing, to be isolated and to comply with hygiene rules. In addition, it is seen that there are differences between regions and cities in terms of the speed of taking some measures or the determination to put them into practice. In this context, it is expected that the economic problems experienced in 1918 and after will be repeated today. Today, unlike in the past, countries have taken certain measures and a significant improvement has been observed, especially in China. However, the official announcement of the rapid spread of the disease all over the world by the World Health Organization and the great uncertainty that economic actors suddenly faced put the markets into a very unstable process. COVID-19 has devastatingly affected the world's economy. Other than the economic effects, the pandemic fundamentally affected the stock exchange market. The motivation behind this investigation is to give a point of view of worldwide financial exchanges during the pandemic period.

The EMV-ID depends on the US media sector and uses stock exchange prices. Thus, the index doesn't represent the multi-dimensional effect of

pandemics, but stock exchange instability, because of pandemics, is undoubtedly known to adversely affect the general macroeconomy. Clearly, the EMV-ID index isn't liberated from limits, yet apparently, the EMV-ID index is the only one that shows the damage of pandemics to capital markets. In this study, it was found that the EMV-ID is negatively correlated with the DAX 30, SSE 50, and JPX 400, and positively correlated with the SP 500, FTSE 100, RTS 50, and BIST 100. But all correlation relationships are weak and statistically insignificant. Due to the use of daily values in the study, a statistically insignificant relationship was found. The impact of news in the media sector can occur over a longer period of time, rather than daily. In this case, the data acquisition period can be considered as a factor affecting the correlation analysis.

When the correlation between stock market indices is examined, a statistically significant and positive correlation is found. Many researchers state that the pandemic period has had a contagious effect on the stock markets (Buğan, 2021; Gharib et al., 2020). With the effect of contagion, stock markets in different parts of the world follow similar trends to each other (Aslam et al., 2020). This study's findings are similar to this situation.

We can shape the measures to be taken to reduce the effects of COVID-19 on the capital markets and the support of the states for companies in general. To improve enterprise cash flow, governments should choose a method of loosening financial conditions, and steps should be taken to increase enterprise demand for goods and services. While some states announce support packages for employment and salaries, they need to reduce or cancel payments to the state (Lorié & Ciobica, 2021).

32% of the retail and entertainment sectors, 29% of the tourism sector, 24% of the banking sector, 15% of the food and agriculture sectors, and 12% of the manufacturing sector are in bankruptcy. Financial support, which will be put forward in line with the joint decisions to be taken with the banking sector, should be encouraged by the government (Lorié & Ciobica, 2021).

The functioning of a healthy financial system for capital markets will increase the mobility of all financial markets and non-financial stakeholders, investors, and the value of bonds and stocks. On the other hand, there is a need to take steps supported by the state to help manufacturing industry enterprises that are adversely affected in developing countries.

The increase in risks and vulnerabilities from the COVID-19 pandemic directly affects the financial sector. As a result, it is clear that pandemics have had a significant negative impact on the economies of many countries. In the long term, the pandemic will affect income distribution and financially affect many companies in the real sector. Thus, unpaid debts and financial crisis will arise. The financial crisis, on the other hand, will affect the entire economy over time. Sectors such as agriculture, which concern the needs of the society, should be financially supported by special macro programs (Demir & Esen 2021, 90).

However, the measures taken or to be taken to combat the epidemic could be far more beneficial in overcoming economic problems. Financial markets are considered one of the most important actors in the economy. The financial system is described as the most important subsystem of the economic system. Financial markets provide the much needed fund transfers for modern economies. It is thought that capital markets will accelerate economic growth through functions such as providing liquidity increases in the market, increasing savings, differentiating risk types, providing easy access to information, and auditing companies (Muslumov & Aras, 2002). Capital markets meet the needs of both parties by collecting savings from units with surplus funds and distributing funds to units that need funds. With this fund transfer function, savings are channeled into investments and thus the capital stock grows. Financial systems also help move capital towards higher-yielding investments. In addition, financial systems facilitate more efficient use of resources, affect savings and investment decisions, and thus increase economic activities. In this context, the relationship between pandemic news in the media and stock indices was investigated in the study. The daily data in the news did not draw any meaningful conclusions from it. With the new indices covering the whole world that will be revealed in the future, the analysis of daily data will be possible again.

With the emergence of the pandemic, many academic studies have been carried out in a very short time. Studies on international capital markets have been meticulously collected and examined. The summary table can be seen in the appendix of the study. The pandemic will be the field of study of scientists not only today but also in the future with its long-term effects. After saying that epidemics were one of the three problems that occupied humanity the most, besides famine and wars in history, Hararri (2016) claimed in Homo Deus that humanity now has the potential to cope with them. Based on past experiences, the majority believe that the epidemic can be overcome by the possibilities of modern science.

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