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Consequences of the Pandemic on the World Economy

Abstract. Introduction. *The authors substantiated the relevance of the study of the consequences of the pandemic in a globalized economy, which always responds to unexpected challenges in the world community, despite the country's geographical and territorial location.*

Purpose. *The main purpose of the research is to study the consequences of the pandemic for the economies of different countries of the world, reviewing the forecasts of experts and the post-crisis world economy.*

Results. *The measures used and applied by different countries of the world to prevent the spread of the infectious disease COVID-19 were considered. The analytical estimation of the main macroeconomic indicators of the leading countries of the world during the pandemic is performed, among which are per capita expenses on the pandemic, the GDP growth rate in 2019-2020 and forecasts for 2021-2022, quarantine restrictions, introduced in the world countries, and Ukraine in particular, including the analysis of the economic condition of separate spheres of life and economic branches as a result of the introduction of rigid quarantine restrictions. The world practice of preventing the spread of the disease is considered, the basic approaches used to overcome COVID-19 are outlined.*

Conclusions. *Real and projected data on the pace of development of the global post-pandemic economy are summarized. It has been proven that the effects of the pandemic have affected and will continue to exacerbate not only economic issues, they will manifest themselves in medical, social, psycho-emotional burden, which, in turn, requires the state to develop a comprehensive approach in addressing these issues.*

Keywords: *pandemic; economy; GDP; quarantine restrictions; sectors of the economy; protective measures; consequences of the pandemic.*

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Наслідки пандемії для світової економіки

У статті проведено аналітичну оцінку впливу пандемії та її наслідків для економік різних країн світу. Об'єктом дослідження стали реальні та прогнозовані дані щодо темпів розвитку світової економіки, макроекономічних показників, зокрема витрат на боротьбу з пандемією на душу населення, темпи приросту ВВП, карантинних обмежень, запроваджених у різних країнах світу та в Україні зокрема, як запобіжників у боротьбі з епідемією.

Метою дослідження є вивчення наслідків пандемії для економік різних країн світу, огляд прогнозів експертів на післякризову світову економіку.

Авторами було обґрунтовано актуальність дослідження наслідків пандемії в умовах глобалізації економіки, яка завжди реагує на несподівані виклики в житті світової спільноти, незважаючи на географічно-територіальне розташування країн. Теоретичною основою дослідження авторів є нормативні документи, статистичні дані щодо розвитку економічних показників в порівнюваних країнах світу, спеціальна література тощо. При дослідженні в предметній області авторами застосовувалися аналітичний, статистичний та графічний методи. Проведено аналітичну оцінку основних макроекономічних показників провідних країн світу в період пандемії, серед яких - витрати на боротьбу з пандемією на душу населення порівнюваних країн, темпи приросту ВВП у 2019-2020 рр. та прогнозовані дані на 2021-2022 роки. Розглянуто заходи, які застосовувались різними країнами світу для запобігання поширенню інфекційної хвороби COVID-19. Розглянуто світову практику щодо запобігання поширенню захворювання, окреслено основні підходи, які використовувалися для подолання COVID-19.

Доведено, що наслідки пандемії вплинули і надалі загострюватимуть питання не тільки економічної сфери, вони проявлятимуться в медичному, соціальному, психоемоційному навантаженні, що своєю чергою потребує від держави розробки комплексного підходу у розв'язанні цих питань.

Ключові слова: пандемія; економіка; ВВП; карантинні обмеження; сектори економіки; захисні заходи; наслідки пандемії.

Formulation of the problem. In the context of globalization, the economy always reacts to unexpected challenges in the life of the world community, despite the territorial remoteness of the regions. The outbreak of a new, unknown to mankind disease, which was later recognized as a pandemic because of its rapid spread worldwide, was no exception. In one way or another, the measures taken by countries in different continents about the COVID-19 coronavirus infection have affected all areas of public activity. Severe quarantine restrictions for small businesses, education, medical care, science, culture, leisure, tourism, service industries, transportation, international trade, etc., became palpable.

Analysis of recent research and publications. Almost all scientists, statesmen, ministers, economists, and financiers pay attention to the economy during a pandemic. They study the impact on economic indicators of the anti-epidemic measures and try to find ways out of the current economic situation. In our study, we will analyze selected macroeconomic indicators to see how they have changed around the world. We also note that almost everyone felt the psychological pressure of the pandemic caused by COVID-19, which took lives and manifested itself in various forms of harassment: restriction of movement, lack of medical drugs and protective equipment, lack of "airbag", inadequate medical care, loss of employment or business; lack of computer equipment, skills, and abilities to work online.

Adu-Gyamfi et al. (2021) and others believe that the various measures taken by governments have largely been aimed at preventing the spread of the disease both locally and globally. This has also been partly due to the concept that in an outbreak the poor are rendered

powerless and weak and continue to suffer disproportionately [1].

According to Zu et al. (2021), the COVID-19 pandemic has led to enormous strains on public health and economies worldwide. Although most countries have reopened their industries after previous closures, it is unclear how the extent to which various control measures, among them the use of masks and social distancing, may affect the timing of economic recovery [2].

The Covid-19 pandemic is causing the greatest economic and social disruption since the Great Depression of the 1930s. The epidemic will cause significant changes in the way we live, work, do business, and trade [3].

By the end of December (Worldometers, December 23, 2021) the number of deaths among 224 countries was about 5.4 million. The number of Covid-19 deaths in the United States was 833869; in Great Britain, 147720; in France, 122295; in Italy, 139245; and in China, 4636. In Ukraine, 94,184 people died, and from August to December 2021, the number of deaths rose sharply from 54,000 to 94,000 [4].

According to the above data, it is obvious that among the compared countries of the world, more deaths from the pandemic were recorded in the United States, while China, the epicenter of the emergence of the disease, has the least number of such cases.

Formulation of research goals. The main purpose of the study is to analyze the consequences for the world economy caused by COVID-19, forming forecasts of further development in the post-epidemic period.

Outline of the main research material. At the end of 2019, there was an outbreak of a new infectious disease

called COVID-19. The first manifestations of the viral infection were recorded in China; subsequently, the virus spread to all countries of the world. In early 2020, the rapid pace and consequences of the disease forced the World Health Organization to declare a pandemic. By the end of 2021, the coronavirus disease, which has killed millions of people, is not completely contained, despite the precautions taken. The anti-epidemic fight against the spread of COVID-19 over the period 2019-2021 has negatively affected economies and the world economy in particular, which according to leading experts will feel the effects of the pandemic for a long time to come, and will proceed from the situation created.

The economic turmoil in China, the country with the second-largest economy in the world, due to the pandemic has been felt in many countries around the world. The crisis has highlighted the importance of China in the global economy. Many goods supplied from China

became unaffordable, contributing to shortages, which, with the increasing duration of restrictions, formed even greater shortages and, as a consequence, prompted higher prices.

Because of the pandemic, supply chains were disrupted and people began to lose their jobs. As a result, there was a significant imbalance in both supply and demand. After severe quarantine restrictions were lifted, some businesses continued to operate remotely, some of them never being able to resume operations.

In the fight against COVID-19, each country developed its strategy to preserve human life, support the economy and protect businesses. Here are some examples of precautionary measures applied by the compared countries of the world. For example, all of the countries we studied introduced a masked regime with social distance, and the governments of the countries paid allowances to medical personnel (Table 1).

Table 1. Precaution for Controlling COVID-19

Events	Countries					
	USA	United Kingdom	France	Italy	China	Ukraine
Masking regimen, distance	+	+	+	+	+	+
Additional support for medical personnel	+	+	+	+	+	+/-
Free COVID-19 tests	+	+	+	+	+	+/-
Closing the borders	+/-	+	+	+	+	-
Hard lockdown	+/-	+	+/-	+	+	+/-
Mandatory vaccination	+/-	+/-	+/-	+/-	+/-	+/-
Payment for vaccination, UAH	+	-	-	-	-	+
Fully vaccinated, %	60.9	69.1	75.0	73.9	82.9	32.4

Source: compiled by the authors based on [5-8]

In Ukraine, although payments to medical personnel were made, they were periodical. They were introduced in supercritical times, associated with a high degree of risk for medics when working with COVID-19 patients. Because of low wages, lack of protective clothing, antiseptic agents, insufficient number of beds, special equipment for artificial lung ventilation, there was an increase of psychological stress and created the preconditions which required a constructive solution. Antibody, antigen, and PCR tests were not available in Ukraine for a long time, and even when they did appear, they remained inaccessible to everyone who wanted to get them. In private medical centers, the necessary drugs, tests, equipment and other wide range of paid services for contact and COVID-19 patients appeared earlier than in public institutions. It can be noted that in this case, the business responded more quickly to the demand, satisfying it.

In certain periods of worsening epidemiological situations, countries closed their borders to avoid the rapid spread of the disease and imposed strict

lockdowns. Of the countries studied, border crossing restrictions were less severe in Ukraine. China was the hardest hit at the beginning of the pandemic, but strict quarantine restrictions prevented the further mass spread of the disease. Until recently, none of the countries we compared had introduced compulsory vaccination of the entire population, but this has since begun to change. For example, the U.S. has passed a law on compulsory vaccination of employees of enterprises with more than 100 employees, for those who work in hospitals, nursing homes, and other medical institutions, educational institutions, military personnel, etc. [9]. In other words, we can say that the law applies mainly to the active working-age population, although state leaders also encourage parents to vaccinate adolescents 12-17 years old.

In Ukraine, the Ministry of Health Order No. 2153 of 04.10.2021 [10] defined the list of occupations subject to compulsory preventive vaccination. This document extends the authority of employers, and it is allowed to suspend unvaccinated persons if they do not have

contraindications for this, confirmed by a doctor's certificate. The issue raises a lot of discussions, since there is no prevention of diseases in Ukraine, no planned or other kinds of examination of the health of citizens, it is impossible to assert with certainty that there are no contraindications to vaccination for the absolute majority.

As an incentive to vaccinate, some governments offer a one-time payment to vaccinated citizens. For example, in the U.S. they pay \$100 as an incentive, while in Ukraine they pay an electronic 1000 UAH, or \$35.

To support the sectors of the economy most affected by the pandemic, the Ukrainian government has announced the payment of 1000 UAH to vaccinated persons starting from December 19, 2021. Who previously received internal certificates of vaccination, registered in the electronic application "Action" and issued an electronic card through the service "e-Support". The state itself also determined the goods and services on which the assistance provided could be spent, including tickets to theaters, museums, movies, concerts; books; sports halls; tickets for domestic flights; and restaurants. Subsequently, the list of expenditures was added to the list of drugs that can be purchased by people

over the age of 60, starting in January 2022. The period of use of these funds is limited to 4 months, from the moment they are credited, unused funds will return to the state budget. Despite the initiative, it should be noted that the most vulnerable layer in Ukraine, which dominates the population (elderly people, pensioners), does not have modern phones, access to electronic networks, and registration on electronic platforms will remain without payments. Those who have registered and received electronic payments will not be able to use them for more pressing needs, including utility payments. For example, the average monthly heating bill in Ukraine in December 2021 is 1200 UAH. In our opinion, support measures should be carried out taking into account national, age, economic and other peculiarities, without limiting the rights of the most vulnerable segments of the population.

Despite several measures taken, Ukraine remains the country with the lowest number of fully vaccinated populations among the countries we compared.

Let us consider the size of the costs incurred by the governments of the studied countries of the world that have been affected by the pandemic (Table 2).

Table 2. COVID-19 control costs

Countries	Costs, USD.
USA	1 trillion
United Kingdom	466 billion
France	396 billion
Italy	28 billion
China	10 billion
Ukraine	3 billion

Source: compiled by the authors based on [11-13]

Based on these data, we can conclude that the U.S. government spent the most on preventing the spread of the coronavirus. In China, \$10 billion was spent. This is 100 times less than in the United States. Ukraine, among comparable countries, has spent less, spending \$3 billion.

These figures will differ significantly if we compare expenditures per person. In Ukraine, the average expenses

were \$68. In Ukraine, the average expenses were \$68, in China - \$7.13, in Italy - \$423. In Italy - \$423, in France - \$5,876. In France - \$5,876. In the United Kingdom - \$6,932, in the United States - \$3,035. In the United Kingdom - \$6,932, in the United States - \$3,035. In the United Kingdom, it is USD 3,035 per capita (Fig. 1).

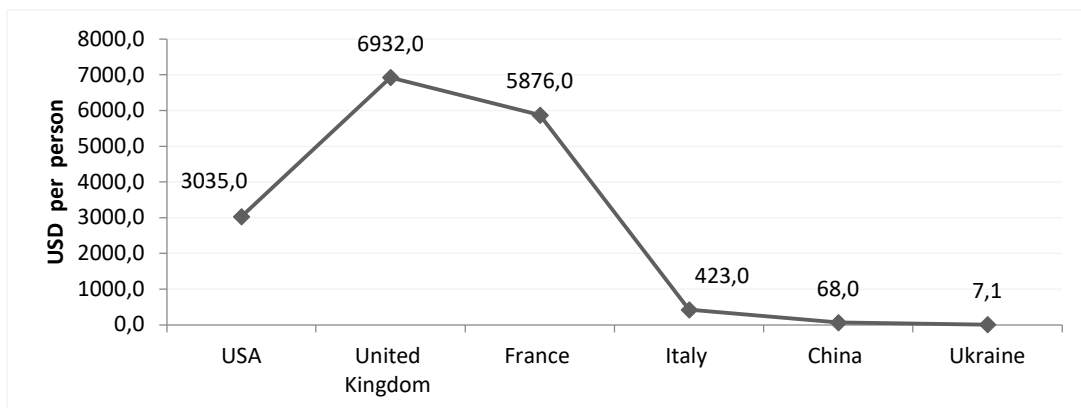


Figure 1 – Costs of fighting COVID-19, per person (USD)

Source: built by authors behind data [11-13]

Among the countries compared, the highest costs per person were in the United Kingdom, the lowest costs in China. It can be assumed that the rapid mobilization of efforts to combat the spread of COVID-19 in China allowed for local influence and cost containment. As a result of the rapid spread of the global pandemic, each country was forced to take measures, including closing borders, restricting movement, etc. This in turn directly affected the economic performance of each country.

The world economy was most affected by COVID-19 in the first half of 2020. According to the International Monetary Fund in April 2020 the world real GDP index decreased by 3.1% [4].

According to the given data in 2020 the biggest decrease in real GDP indicator was in the UK, Italy, and France. Among the compared countries all have a negative value of the index of real GDP, except China, the economy of which, although it has reduced the rate of growth, has remained positive (Table 3).

Table 3. Real GDP growth rate, %

Countries	Real GDP		Forecast	
	2019	2020	2021	2022
World economy	2,8	-3,1	5,9	4,9
USA	2,3	-3,4	6,0	5,2
United Kingdom	1,4	-9,8	6,8	5,0
France	1,8	-8,0	6,3	3,9
Italy	0,3	-8,9	5,8	4,2
Ukraine	3,2	-4,0	3,5	3,6
China	5,8	2,3	8,0	5,6

Source: summarized by the authors using [14]

China's economy in 2021-2022 is projected to have the highest real GDP growth rates among comparable countries in the world, despite the effects of the pandemic.

Because of the pandemic in Ukraine, there was a sharp slowdown in economic development, investment activity declined, imports of goods declined, and unemployment rates rose. In 2020 there was a fall in almost all spheres of the national economy of the countries of the world. Due to quarantine restrictions, such sectors as tourism, recreation, and leisure, which are the leading ones for many countries of the world, suffered significant losses.

Studying the development of the tourism business, researchers [15] note the slowdown of its pace due to the lack of developed infrastructure, but under quarantine restrictions, the situation for the tourism sector has become even more complicated. The consequence of the loss of demand was the loss of income, so the most difficult situation was in such countries, in which tourism was the main source of filling the budget, dependent on exports and external financing, countries with a weak health care system. According to experts, recovery of economic indicators to epidemic levels will be a difficult test for many countries.

Along with this, positive changes associated with the reformatting of businesses to Internet resources are noted. Studying the experience of Ukraine and Moldova [16], the authors emphasize that the global pandemic contributed to the reorientation of trade to the Internet sites and accelerated the pace of their development.

Through COVID-19 the entire non-productive sphere was forced to adapt. While remote meetings via online platforms were not quite common before, today this

type of holding seminars, conferences, etc., remains very common. Medical institutions have electronic pages and offices through which one can make an appointment with a family physician online.

As noted by the authors of [17], the global pandemic caused by COVID-19 has greatly affected the labor market. Today the most popular professions in Ukraine and the world are IT, specialists. Soon, interest in workers with systems thinking, multidisciplinary and versatility will only grow.

According to the authors [18], Europe may face a serious economic shock similar to the global financial crisis of 2008 if the leaders of the countries do not take urgent measures to get out of the pandemic.

Conclusions. The authors' analytical assessment of the impact of the pandemic on the economy revealed several disagreements among comparable countries. At the same time that the global economy in 2020 reduced its growth rate by 3.1%, real GDP in the UK, France, and Italy declined during this period by 8.0%, 8.9%, and 9.8% respectively. According to forecasted data, in 2021 China will recover the growth rate of real GDP faster, having reached +8.0%, the lowest indicator will be in Ukraine, which will amount to 3.5%. Among the other countries considered by the authors, the growth rate will be 6-7%.

The expenditures of the countries affected by the pandemic, highlighted by the governments, characterize the state of economic development of these countries, the ability to mobilize efforts to neutralize the negative consequences.

By the end of 2021, it cannot yet be asserted with certainty that COVID-19 and other strains of the disease are a thing of the past. The multidimensional nature of the consequences of the pandemic makes it impossible

to call the economic outlook optimistic, since negative consequences of the pandemic that require a response. unemployment, the decline in production are the comprehensive

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