CRISIS VACCINE: WILL COVID VACCINES SAVE THE WORLD ECONOMY? DOI: 10.52174/2579-2989_2021_6_87

Keywords: COVID-19, vaccination, vaccine, world economy, economic recovery, vaccine interchangeability, vaccine disproportion

In the fight against COVID-19, vaccines are the key to overcoming health and economic crisis. Availability of vaccines for countries is one of the first steps in solving this problem. When vaccines became popular within the countries, the latter will lead to the facilitation or elimination of restrictions, which will result in the promotion of economic activity at the level of each individual country and the restoration of trade relations. All this will lead to the step-by-step overcoming of global economic crisis caused by COVID-19, and finally the "recovery" of the world economy. It is noteworthy that economic losses caused by insufficient vaccination rates are four times higher than the cost of vaccines.

he second year we "live" with COVID-19 is coming to an end, it is on the top of the list of major business issues, ahead of the exchange rate, political situation, sanctions and other issues that are always present. The epidemic is the main threat to the "health" of the current economy; in many countries, poverty, hunger, inflation, and debt have risen dramatically. Many developing countries now face a scarcity of resources needed for recovery. The imperative of the time is now to take decisive actions within each country, just as it is topical to help developing countries overcome the crisis. Entrepreneurs have lost confidence in the future, people have begun to spend less due to the feeling of uncertainty.¹

The only way out of this situation is to work together resolutely to build a better future.



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¹⁵ How vaccination affects the economic recovery of the USSR and Russia, Sergei Kostyev, 2021, https://novayagazeta.ru/articles/2021/06/27/tsena-nedoveriia



Not so long ago, the rumors about the creation of a vaccine sounded like good news, showing light at the end of the tunnel ...

From March 20, 2020, primary restrictions were imposed in more than 100 countries: first, educational institutions were closed, public events, travel were banned, and then restrictions have even deepened. Restrictions were implemented spontaneously, strengthening or weakening the situation. Restrictions are based on the fear of the uncontrolled spread of the infection. After a long period of restrictions, the vaccines promised a return to normal life. But it would be possible if vaccines were perceived as a lifeline that would allow us to get rid of restrictions and return to normal life without such restrictions. Business activity will start again, investments will be stimulated.

According to some analyses, the higher the incidence of illness and death, the greater the instability in the financial markets.

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The vaccine is cost-effective because it reduces the risk of hospitalization if infected with the coronavirus. In the presence of comorbidities, vaccination reduces the average cost of treatment. All of this indicates the positive economic impact of vaccines (based on the Charlson Comorbidity Index (CCI)*).²

Countries that make up 81% of GDP and make up 62% of the world's population* The GDP has shrunk by an average of 7.1% due to restrictions, depending on the structure of the countries' economies and the severity of quarantine measures. In countries with stricter restrictions, trade fell by almost 50% and the average - by 10%. In other words, the decline in countries' GDP is directly proportional to the severity of anti-epidemic measures. Examples of severe restrictions are India (-14.8%), the Philippines (-15.7%), Spain (-12.7%), and the United Kingdom (-11.5%) (Figure 1).³



² Zhidkova E.A., Gutor E.M., Tkachenko Yu.A., Rogova I.V., Popova I.A., Gurevich K.G. COVID-19: economic aspects of influenza vaccine prevention. Kachestvennaya Klinicheskaya Praktika = Good Clinical Practice. 2021;(2):16-21. (In Russ.) https://doi. org/10.37489/2588-0519-2021-1-16-21.

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^{* 10} EU, 10 BRICS Asia npn2 Some CIS countries.

³ Vaccination as a factor of uneven recovery: 21.04.2021, https://www.acra-ratings.ru/upload/iblock/741/6nkeu8l0rl4g02fcga6755gjj74itein.pdf



and the decline in GDP⁴

Studies show that there are exceptions when the country applied very strict restrictions and at the same time did not suffer losses commensurate with the severity. Moreover, it provided some economic growth. Exceptional countries are China (2.3%), Turkey (1.8%) and Vietnam (2.9%), which had far fewer casualties than others. The opposite scenario was observed, for example, in Switzerland, a disproportionate decrease in the degree of severity (weak restrictions large losses). At the heart of the Chinese phenomenon of avoiding economic downturn, along with strong measures to curb COVID-19, is external demand for some Chinese goods, such as fiscal stimulus to invest in infrastructure, and most importantly, the already developed e-commerce market.

Here, in the fight against the epidemic, it is estimated that in the process of creating free vaccines for more than 1.4 billion people a year, more than 600 billion yuan will be demanded, which can be reduced based on the economies of scale. Only in 2020, the loss of GDP during a year amounted to 800 billion yuan. Annual direct economic losses can exceed 6 trillion yuan. Budget and tax losses, tax cuts and tax benefits to help the population can exceed 3 trillion yuan. Thus, compared to these figures, the cost of vaccinations is quite justified.

In China, gross domestic product (GDP) per capita is about \$ 11,000 a year, followed by mass vaccination of 400 yuan at 0.6% a year, which is equal to 2 days of GDP. Thus, the cost of COVID-19 vaccine is only 4 (approximately 15 USD) yuan, while the meningococcal vaccine is 10 yuan.⁵

The phenomenon of Vietnam was based on the growth of industrial production, as a free trade agreement with the EU had a significant impact.⁶

As for the EU, each week of long-term restrictions (Figure 2) reduces the nominal quarterly GDP growth of the EU by 0.4%, and the current delay is equivalent to 2.0%

⁴ Vaccination as a factor of uneven recovery: 21.04.2021, https://www.acra-ratings.ru/upload/iblock/741/6nkeu8l0rl4g02fcga6755gjj74itein.pdf

⁵ In Kitae read the economic aspects of free vaccinations from COVID-19, 8.01.2021. Dan Bodjun: https://rossaprimavera.ru/ news/3dd5ccbd

⁶ Vaccination as a factor of uneven recovery: 21.04.2021, https://www.acra-ratings.ru/upload/iblock/741/6nkeu8l0rl4g02fcga6755gjj74itein.pdf,



more than four times the value of contracts worth 2.5 billion doses of vaccine between European "vaccine manufacturers".8

According to experts, in the case of the current rate of vaccination, collective immunity will be obtained only by the end of 2022. The priority for EU countries is to first vaccinate at-risk groups, which make up 20-30% of the world population, which will allow the facilitation of the restrictions without endangering the healthcare system. But all this is possible if the current rate is at least doubled. In terms of economic falling behind the weekly recovery, vaccination schedule in monetary terms equals a loss of 21 billion euros. It should be noted that these costs will continue to rise as long as vaccination levels are below the optimal range. But it also means that this gap can be filled quickly if vaccination rates are much higher than optimal vaccination rates.9

At present, recovery of the world economy is based on the vaccines against COVID-19, in this case act as "Vaccine which economics"10, which will lead to the elimination of restrictions, with its fruitful effects will increase consumer confidence and business activity will be restored. Savings will be used, service economy will be revived and investments will gain new momentum.

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As for the approaches of experts on the "economy vaccine", they are different. But most are inclined to say that the impact of the latter is medium-term, the ability to "cure" the economy depends on some conditions: the incidence of the disease at the beginning of active vaccination, the current level of vaccinations, the severity of restrictive measures adopted by the authorities. ¹¹ Vaccination rates affect many economic indicators at once. from employment to productivity to fiscal stability. In May 2021, IMF economists predicted that if 60% of the world population were

Vaccination delay to cost Europe eur 90bn in 2021, 2021, Ludovic Subran, Ana Boata, Patrick krizan, Katharina Utermöhl, CFA, https://www.eulerhermes.com/content/dam/onemarketing/ehndbx/eulerhermes_com/en_gl/erd/publications/thewatch/2021_02_03_Eurozone-vaccine-fallout.pdf

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Non-recognition of the vaccine thrombosis investment contacts, 09.11.2021, Anastasia Bashkatova https://www.ng.ru/economics/2021-11-09/1_8296_vaccines.html

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vaccinated by mid-2022, additional tax revenues in developed economies alone would reach \$ 1 trillion, and world GDP would increase by an additional \$ 9 trillion by 2024, while an actual cost of vaccinations is \$ 50 billion. UN experts estimate that for every 1 million people vaccinated, the average world GDP increases by almost \$ 8 billion.12

However, to calculate the economic impact of vaccinations on a particular population, it is necessary to take into account many factors (for example, the severity of restrictive measures in one country, the vaccination of one country affecting another, etc.).

It is now estimated that the cost of insufficient vaccination rates is four times higher than the cost of purchasing the vaccine itself. More figuratively, spending \$ 1 on speeding up the vaccination process can prevent a loss of \$ 4 due to reduced production rates. There is a problem of unequal availability of vaccines. Many developing countries face this problem.

In numerical terms, the current global average per capita vaccination rate is only 10 inhabitants, which is not enough to cease the practice of regular restrictions in countries.¹³

If COVID-19 had a negative impact, it could lead to cumulative declines in global GDP of \$ 5.3 trillion over the next five years, according to the current forecast.¹⁴

Differences in vaccination rates around the world may slow the development of collective immunity to COVID-19 in several countries, the logical consequence of which would be a severe disproportion to the economic recovery and fiscal stabilization process.

As countries show varying degrees of resistance to the epidemic, it can be expected that quarantine level constraints will vary considerably from country to country, and by 2021 the implementation process as a whole will be less systematic worldwide. All this will lead to unequal

economic recovery. In the future, the situation will depend on how quickly most countries will be able to vaccinate the population, thereby reducing the impact of the coronavirus on national economies.

One of the solutions to the problem is to make vaccines available in all countries. Unequal implementation of the vaccination program can have a negative impact on the economies of different countries, causing damage to countries where vaccination rates are low and the collective immunity of the population has not yet been established. This problem is mainly faced by developing countries; vaccination of the latter is possible by changing the delivery schedule for those doses. In other words, countries that have achieved high vaccine coverage should agree to reschedule the delivery schedule to speed up the delivery of vaccines to vulnerable countries where they have not been vaccinated at all due to lack of vaccines or vaccination rate is rather low. These steps will save lives, otherwise, there will be no need for restrictions, which will lead to economic recovery.

According to the scenario aimed at economic recovery, it is necessary to vaccinate at least 40% of the population of all countries by the end of 2021, and 70% by the middle of 2022. But now the pace is not as planned, as about 75 countries, mostly in



Vaccination Economics, November 9, 2021, Vlasta Demyanenko https://econs.online/articles/ekonomika/vaktsinatsiya-ekonomiki/ ¹³ Vaccination as a factor in uneven recovery 04/21/2021,

https://www.acra-ratings.ru/upload/iblock/741/6nkeu8l0rl4g02fcga6755gjj74itein.pdf, ¹⁴ To ensure economic recovery, joint action is needed, 10/27/2021, Kristalina Georgieva,

https://econs.online/articles/ekonomika/vaktsinatsiya-ekonomiki/



Africa, are deviating from the goal of 2021.¹⁵ As of the end of November 2021, 69% of the US population had been vaccinated, compared with 44% in Russia. Studies show that in countries where the number of vaccines is high, the restrictions have been lifted (for example, China, India), and in countries where the number of vaccines is low, the restrictions are being lifted again. A vivid example is the United States, which has completely removed and returned to normal economic activity, while Russia, on the contrary, regularly introduces and is unable to return to normal economic activity. An obvious example of the positive impact of the vaccine is China, which is one of the leaders in the number of vaccines. The United Arab Emirates and Chile became the absolute leader in terms of population vaccination (Figure 3).

The difference between the indicators of the leading "average" vaccines is based on the speed of vaccinations, the factors that affect them, from psychological to the level of people's trust in the vaccine or vaccines, population, incorrect information flows, insufficient number of vaccines, etc. activity are negatively affected by the countries' refusal to recognize vaccines, which may affect the rate of vaccination. In many cases, vaccination by local vaccines is restricted (for example, in case of local vaccines in Russia) because it is not mutually recognized in another country and two different vaccines cannot be given at the same time.

The introduction of the vaccination process has also affected tourism, with some restrictions being lifted; many vaccine-based countries have opened their borders to tourists, businesses and students, but the issue of reciprocity plays a significant role here, limiting the movement of tourists. Russian tourists have a significant role to play in world tourism due to the issue of mutual recognition. Many public places may require a 72-hour PCR test from Russian tourists who have been vaccinated with the Russian vaccine without recognizing the vaccine. In the same process as in Russia, international business forums can be held without foreign guests, as the system of QR codes introduced for conferences and exhibitions does not recognize the QR codes of foreigners.

The investment climate and business

In other words, the mutual recognition of

¹⁵ How to end the COVID-19 pandemic proposal, 05.24.2021, Kristalina Georgieva, Gita Gopinat and Ruchir Agarwal https://www. imf.org/ru/News/Articles/2021/05/21/blog052121-a-proposal-to-end-covid19-pandemic

¹⁶ Official data collated by Our World in Data-

vaccines is a major issue in terms of reviving international tourism.

International organizations, from the WTO to the UN and IMF, now face the problem of "inequality of honor", the overcoming of which will lead to overcoming the postcrisis disputes of the world economy. The elimination of disproportion will allow it to regulate the rapid growth rates of developed countries and the slowdown of growth rates of other countries. For example, in July, the IMF raised its economic growth forecast for developed countries, lowered its forecast for developing low-income countries, and explained this by the difference in vaccination rates.17

The world's population has received 7.78 billion doses of COVID-19 vaccine, but the vast majority are developed countries. 65% of the population in developed countries are now vaccinated, while only 5.2% of the poorest people have received one dose of the vaccine.

In total, at the beginning of November 2021, number of people vaccinated with at least one dose of coronavirus exceeded half of the world's population.

According to experts, by donating, providing grants, 40% of the population can be vaccinated by the end of the year and 60% by 2022, in the first half (Figure 4).

The above scenario of eliminating vaccine disparities can be achieved by providing at least \$ 4 billion in grants to fund orders and launch non-operational vaccine production capacity. The next important step is to ensure the free movement of raw materials and ready-made vaccines. Such restrictions threaten the access of vaccines to billions of people in developing countries. importantly, donate unused And most Vaccine donation distribution vaccines. should be done through a centralized structure, ensuring the elimination of disparities.

To calculate how the increase in the



¹⁷ Vaccination Economics, November 9, 2021, Vlasta Demyanenko https://econs.online/articles/ekonomika/vaktsinatsiya-ekonomi-ki/

¹⁸ How to end the COVID-19 pandemic proposal, 05.24.2021, Kristalina Georgieva, Gita Gopinat and Ruchir Agarwal https://www. imf.org/ru/News/Articles/2021/05/21/blog052121-a-proposal-to-end-covid19-pandemic

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proportion of vaccinated people affects the proxy indicators of the economic activity, the researchers looked at situations where the increase in the number of vaccinated people in a particular country exceeded the rate produced or purchased by the government. The most significant "surprise" recorded by researchers was recorded in Israel, where the number of vaccinated people from February to May 2021 consistently exceeded forecasts. The spring of 2021 brought the same "surprise" to the United States, while in many countries, such as India, the level of vaccinations fell significantly short of government expectations, i.e. the "vaccination surprise" rate has a significant economic impact if the number of vaccines exceeds the forecast if the rate is 10%. then people's mobility almost immediately increases by an average of 5%.

These effects are comparable to the transition from total closure (closing everything: schools, offices, public transport, borders) to mild restraints.

For example, higher vaccination rates improve the expectations of businesses, which have a positive effect on the economic activity.¹⁹

In the current situation, when the vaccine is available, the following can be concluded: high disease rate, severe limitation is based on low vaccination rate. However, one should not expect an immediate increase in economic activity as the number of vaccines increases rapidly, as the latter is already based on severe restrictions that prevent increased mobility, hence the focus of the vaccine on the economy is to exclude or minimize restrictions.

It should also be noted that when an outbreak occurs in the country, even vaccinated will be restricted in their mobility until the incidence of the disease decreases. However, in calm conditions, vaccinated people tend not to avoid contact with others. The increase in the number of vaccines is directly proportional to the decrease in the risk of infection. As the economy of any country is not isolated in itself, therefore, even if that country accelerates vaccination rates, or at the same time facilitates or removes restrictions altogether, it will not be able to achieve economic efficiency alone without neighboring or trading partner countries with which it has trade relations. In other words, positive results can be achieved only with a systemic approach to this problem. The opposite effect can be achieved even when vaccination is high in one's own country, restrictions are minimized, but in its partner country the disease is high, the opposite is true.

The whole world has learned to live in line with the epidemic, which also has its advantages. For example, in terms of the business environment, the only positive thing in this situation is that the culture of long-distance business has taken root among entrepreneurs. The use of these technologies gives flexibility in organizing the discussions of urgent issues remotely. Significant improvements in online discussion technology have reduced the need for face-to-face communication in a situation where urgent issues can be discussed. Of course, getting the vaccine will facilitate cooperation and may increase cooperation.

The industry has adapted itself to the conditions of the past. It should be noted that the countries whose economies are dominated by production (for example, Germany) are recovering faster from the crisis than those based on the service sector (for example, Spain). The worst situation is in the countries dependent on tourism, when the level of dependence on foreign tourism is above average (for example, Greece, Spain).

Countries with a higher share of investment-oriented goods in the country's industry (for example, Switzerland) are not in favorable conditions under the epidemic.

Finally, the economic side of vaccines is as follows: countries that complete the first round of vaccinations in the first half of the

 ¹⁹ Vaccination Economics, November 9, 2021, Vlasta Demyanenko https://econs.online/articles/ekonomika/vaktsinatsiya-ekonomiki/
 ²⁰ New lockdowns in Europe: even longer, even tougher, Elena Karaeva: https://ru.euronews.com/2021/01/06/covid-wed-wrap

year will receive a positive multiplier effect in the second half of 2021 in the form of consumption growth, investment activity; on the contrary, countries lagging behind vaccines will result in a crisis, they will face significant "economic" and political costs.²⁰

Increasing the rate of vaccination is possible by removing barriers to vaccine production, expanding new production sites to avoid a shortage of vaccines, or circulating new types of vaccines that will protect against a single dose.

For example, the goal of the German government has been quite ambitious, but so productive. According to the latter, it would be effective if the daily vaccinated population was 1% of the population, approximately 715,000 people.

This ambitious but realistic vaccination demo will allow a return to pre-crisis levels of consumption and investment by mid-2022.

Vaccination rates have prevented the EU from being completely restricted in its efforts to prevent a third wave, the logical consequence of which is a third economic downturn. An obvious, contagious example for everyone can be Israel, Great Britain, the United States when they start to show rapid economic growth based on consumption, based on high rates of vaccination of the country's population.

The most economically advantageous countries are those where, before the

epidemic, online business was already ingrained, with a high share of retail, as well as financial services.

Even with sufficient financial resources, countries will be able to return to normal life and recover from the crisis only when COVID-19 becomes a common disease that can be overcome through vaccination and treatment.

At present, when the vaccine is available, the following can be concluded: high disease rate; severe limitations are based on low vaccination rate. The increase in the number of vaccines is directly proportional to the reduction in the risk of infection, the logical consequence of which will be the elimination or facilitation of restrictions that prevent increased mobility, and therefore the economic orientation of the vaccine is the elimination or minimization of restrictions. The vaccination process is currently facing the issue of vaccine recognition, access to all countries, the regulation of which will have positive economic consequences.

In other words, the positive economic impact of the vaccination process, which started in late December 2020, will not be immediately visible by the end of 2021. It has a more medium-term effect; it can lead to different rates of economic recovery in different countries due to disproportionate rates of vaccination.

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«Ամբերդ» հետազոտական կենտրոնի տնօրենի օգնական, <ՊS<

ԱՆՎՏԱՆԳՈՒԹՅՈՒՆ ԵՎ ՄԱՐՏԱՀՐԱՎԵՐՆԵՐ

ՃԳՆԱԺԱՄԻ ԴԵՄ՝ ՊԱՏՎԱՍՏԱՆՅՈՒԹ։ ՈՐՔԱՆՈ ՛Վ ՊԱՏՎԱՍՏԱՆՅՈՒԹԵՐԸ ԿՓՐԿԵՆ ՀԱՄԱՇԽԱՐՀԱՅԻՆ ՏՆՏԵՍՈՒԹՅՈՒՆԸ

COVID-19-ի դեմ պայքարում պատվաստանյութերն այսօր առողջապահական և տնտեսական ճգնաժամի հետևանքների հաղթահարման առանցքային միջոց են։ Այս պայմաններում առաջնային քայլերից մեկը երկրների համար պատվաստանյութերի հասանելիությունն է։ Երբ համատարած լինեն պատվաստումները, դա կհանգեցնի սահմանափակումների մեղմացման կամ ընդհանրապես բացառման, ինչի արդյունքում յուրաքանչյուր որոշակի երկրում հնարավոր կդառնան տնտեսական ակտիվության խթանումն ու առևտրային կապերի վերականգնումը։ Այս ամենը քայլ առ քայլ կբերի COVID-19-ի հետևանքով առաջացած համաշխարհային տնտեսական ճգնաժամի հետևանքների հաղթահարման և, վերջապես, համաշխարհային տնտեսության «առողջացման»։ Հատկանշական է, որ պատվաստումների ոչ բավարար տեմպերից առաջացած տնտեսական կորուստները չորս անգամ գերազանցում են պատվաստանյութերի ձեռքբերման ծախսերը։

<իմնաբառեր. COVID-19, պատվաստում, պատվաստանյութ, համաշխարհային տնտեսություն, տնտեսության առողջացում, պատվաստանյութի փոխճանաչելիություն, պատվաստանյութի անհամամասնություն

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БЕЗОПАСНОСТЬ И ВЫЗОВЫ

ВАКЦИНА ОТ КРИЗИСА: НАСКОЛЬКО СПАСУТ ВАКЦИНЫ ОТ COVID-19 МИРОВУЮ ЭКОНОМИКУ?

Сегодня в борьбе с COVID-19 вакцины являются ключевым инструментом к преодолению кризиса в области здравоохранения и экономики. Доступность вакцин для стран - один из первых шагов в решении этой проблемы. Когда вакцины получат широкое распространение в странах, ограничения будут ослаблены или полностью отменены, в результате чего повысится экономическая активность на индивидуальном уровне и восстановится торговля. Все это приведет к постепенному преодолению глобального экономического кризиса, вызванного COVID-19, и, наконец, к «оздоровлению» мировой экономики. Примечательно, что экономические потери от недостаточной вакцинации в четыре раза превышают стоимость вакцин.

Ключевые слова: COVID-19, вакцина, вакцинация, мировая экономика, восстановление экономики, признание вакцины, диспропорция вакцины