Public-private partnership in fighting the COVID-19 global economic lockdown

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Abstract. The COVID-19 pandemic dealt a serious blow to national socio-economic systems, causing the deepest economic crisis since the Great Depression. Neither national economies and their states, nor national health and social welfare systems, nor private business, nor the global economy have stood the test of the coronavirus pandemic. The COVID-19 pandemic has predetermined an increase in the area of uncertainty as a new quality of post-coronavirus economic reality, in the structure of which private business plays a decisive role. In this regard, the principles of partnership between the state and private business in the production of public goods need theoretical understanding due to the new reality. Adequate institutionalization of relations between partners in implementing socially significant projects can be an important success factor in the fight against economic lockdown. The state dictate regarding the terms of partnership with private business, prevailing before COVID-19, largely explains the insignificant contribution of public-private partnerships (PPPs) to accelerating GDP growth in the countries of the world. After COVID-19, the priority of the intentions of private investors in organizing socially significant projects with the state should become the norm that will allow using PPPs to unlock the economic lockdown.

1. Introduction

The COVID-19 pandemic has caused an economic crisis in all countries of the world, unprecedented in terms of causes, extent of spread, as well as ways of nation states’ struggle with its devastating consequences. Before the economic lockdown of 2020, the global financial crisis of 2007-2009 considered the most devastating since the “Great Depression”. It was the global financial crisis that was associated with a number of acute problems that arose first in the financial markets, and then in the economic sphere. Their causes were not completely eliminated even after a decade. COVID-19 was first detected at Hubei province in China in December 2019, and within three months, it acquired all the signs of a pandemic, quickly spreading throughout the planet. A new coronavirus infection began to threaten people's lives, causing a rapid increase in the infected COVID-19 and the number of fatal cases in almost all countries of the world. According to Johns Hopkins Centre for Health Security as of June 24, 2020 the number of people infected on the planet reached 9.26 million people, of which the number of deaths from coronavirus is estimated at 0.48 million. National governments were forced to resort to emergency measures of fighting the COVID-19 pandemic by introducing a “self-isolation” regime for citizens and blocking the economic and financial systems at the national level. G. Gopinath, Economic Advisor and Director of the IMF Research Department, identified the 2020 global economic crisis as a global “lockdown” due to “great self-isolation” or “great quarantine” [1]. In the opinion of Rabbi Jonathan Sacks, the current situation should be associated with “…a self-inflicted economic
catastrophe as a necessary policy response to contain its (COVID-19) spread” [2]. As a result, the “secular stagnation” of L. Summers [3], which served as the backdrop for the global financial crisis of 2007-2009, was reinforced by the global economic “lockdown” of 2020. As a result, the fundamental question remains open about the main contours of post-COVID-19 reality and the main drivers of its structuring.

The emergency conditions caused by the coronavirus pandemic in 2020 made the nation-states the last resort, which was forced to bear all the financial costs associated with the lockdown in the national economy, with social support of the population and fiscal and monetary help to private firms which business was blocked. As a result, budgetary expenditures of national governments have reached a marginal level and budget revenues have been reduced to a minimum. As for entrepreneurs whose business has declined or completely closed, they have lost revenue and profits, the ability to pay salaries to employees, repay loans and pay taxes, and also build strategic development prospects. In these conditions, the partnership of national states and private investors in the implementation of socially significant projects becomes not only possible, but even more necessary than before COVID-19. Besides, in crises the importance of socially significant projects, especially in infrastructure, increases greatly due to reducing the period of economic recession.

The expansion of the uncertainty field in post-coronavirus reality causes an increase in demand for a theoretical justification of acceptable forms of PPP organization. Their numerous modifications can be conditionally structured in the form of “institutional matrices” [4]. Their theoretical justification can serve as a basis for determining the political choice of states in favour of certain forms of PPP taking into account their structural variability, the ability to “design” various partnership options depending on national characteristics, specific requirements of partners, priority sectors and areas of economic activity, and the effectiveness of risk reduction instruments in conditions of increased environmental uncertainty in the post-Covid-19 recovery phase [5].

Back in 2017, the first Sustainable Development Impact Summit of the World Economic Forum was dedicated to the high importance of PPPs for ensuring the sustainable development of national economies all over the world. According to politicians, scientists and practitioners, only expanding the partnership between the state and private business will achieve the United Nations Sustainable Development Goals and implement the provisions of the Paris Climate Agreement by 2030 [6]. Under COVID-19, such importance of PPPs should be interpreted in the context of the need to form and expand the organizational structures of partnerships (cooperation, cooperation) between the state and private business, which potential is huge and can be successfully used to unlock the economic “lockdown” at the national level. Under the current conditions, it would be very important to theoretically rethink the reasons that impeded the widespread practice of PPPs development before COVID-19, as well as the conditions that should be created for the rapid implementation of the diverse forms of such a partnership in the post-Covid-19 recovery phase [7].

2. Methodology

2.1. “Great lockdown” in economics: consequences of the COVID-19 pandemic

The ambiguity of the global crisis caused by the COVID-19 pandemic is recognized by all theorists and practitioners. At the beginning of 2020, almost all countries of the world simultaneously or with a certain time lag faced the rapid spread of coronavirus infection, which caused crises in the national health care system, public and private finances, in macroeconomics, etc. The specificity of the economic crisis caused by the COVID-19 pandemic lies in the identity of the actions of national states aimed at minimizing its negative consequences. The experts of the Boston Consulting Group (BCG) conditionally structured them into three groups depending on three phases of fighting the COVID-19 pandemic: the initial (flatten) phase is connected with the goal to urgently limit number of confirmed coronavirus cases, especially critical care (social distancing (lockdown), partial business closures, increasing unemployment with the resulting economic recession); the fight phase is characterized by the collectively fighting the virus, restarting the economy, and supporting society in balancing lives.
and livelihood (suppressed economic activity with inhibitory GDP fall, some business re-openings, and social distancing on sustainable level, etc.), and on the future phase the disease should be controlled because of vaccine/cure as well as the possibility to treat within sustainable medical capacities (reactivated economic activities due to strong business rebound and job growth, limited/completely suspended social restrictions) [8].

In other words, a specific form of struggle of the majority of national governments against the coronavirus pandemic was the introduction of a state of emergency related to the regime of mandatory self-isolation of citizens and the suspension of almost all types of businesses, with the exception of some types of food/staples retail, pharma household products, food & beverage, telecom. By April 2020, the unprecedented scale of the economic recession, called the “Great lockdown”, became apparent. As a result of the COVID-19 pandemic, the fall in global GDP in 2020–2021 (fig. 1) tentatively estimated at $9 trillion, which is equivalent to the GDP of Japan and Germany combined. The global economy will suffer such losses if the coronavirus infection is defeated in the second half of 2020. Otherwise, the global GDP could drop by an additional 3% in 2020. If the COVID-19 pandemic persists in 2021, the global economy will lose another 8% of GDP compared to the IMF baseline scenario in April 2020.

**Figure 1.** The dynamics of global GDP in the conditions of "Great Self-isolation" in 2020 and of global financial crisis of 2018-2021.
Source: IMF(2020) World Economic Outlook April 14.

For the first time since the Great Depression, the economic downturn will affect all groups of countries of the world: developed economies, with emerging market and developing countries (fig. 2).

**Figure 2.** Economic recession in all countries of the world in 2020 in comparison with the global financial crisis of 2008-2009.
Source: IMF(2020) World Economic Outlook April 14.
Such significant economic losses as a result of the COVID-19 pandemic are due to fundamental reasons. The point is that by 2020, capital-centric national systems that formed in the world have reached a certain marginal level in terms of the maximum “return” of this model of economic organization. The shock of COVID-19 pandemic demonstrates this marginal state, causing an extraordinary drop in global GDP, not to mention the exponential increase in the number of infected COVID-19, of severe cases and of fatal cases in countries around the world.

2.2. “The failure” of national governments in fighting the COVID-19 pandemic
The fundamental problems posed by the COVID-19 pandemic affected not only the effectiveness of the capital-centric economic system, “that alone rules the world” [9], but also the functions of the state in national communities built on this economic base. Such an exponential increase in the number of infected and dead on the planet calls into question the effectiveness of the state, that should be obligated to provide its citizens with public goods, including the high qualified services of the health care system. It turned out that national states in capital-centric systems failed to be effective in fulfilling their functions even in the priority areas of public goods - protecting the health of citizens and their social security in emergency situations.

As a kind of excuse, it could be noted that national states turned out to be in an absolutely uncertain situation, since there were no precedents like the COVID-19 pandemic in the history. As a result, there were no best national practices of state behaviour in emergency situations of the type that could be resorted to. In fact, national states independently developed their actions, implementing a certain set of means of combating coronavirus infection. As a result, almost everywhere in the “flatten” and “fight” stages, they made choices in their politics between health outcomes and economic and societal costs [10]. The BCG experts called such a mix of political measures of nation states combining strategies for fighting the coronavirus and restarting the economy, “crush and contain, flatten and fight, and sustain and support” (fig. 3). It means that Faced with the exponential growth of инфицированных COVID-19, these countries instituted society-wide social distancing and lockdowns to avoid a public health crisis, прибегая к a broad strategy of flatten and fight.

| OBJECTIVE | Crush and contain | Most Common Approach | Flatten and fight | Sustain and support |
|-----------|-------------------|----------------------|------------------|--------------------|
| Full containment to reduce the number of local coronavirus cases to close to zero through rapid, stringent lockdowns, combined with aggressive testing, tracking, contact tracing, quarantining, and isolating | Attempted containment with strong interventions to decrease the number of coronavirus cases and avoid overwhelming the health care system’s capacity | Prolonged quarantining of the vulnerable population, while the less vulnerable pursue economic activities with few constraints but continued health precautions |
| IMPlications FOR RESTART | Opening the economy in a walled society, focusing on strict border controls and testing to keep the number of new cases to an absolute minimum and restore economic vitality | Progressively lifting restrictions and reopening the economy without surpassing the health care system’s limits |
| PREREQUISITES | Early, stringent interventions and the acceptance of prolonged lockdowns, when necessary \nStrict border control. \nHigh volumes of testing and contact tracing relative to the number of cases | Resources to expand the health care system’s capacity \nAbility to increase coronavirus monitoring (testing, tracking, and contact tracing) \nAdherence to safety protocols during the reopening | Ability to isolate and support the socioeconomic well-being of the vulnerable \nHigh trust in government translating into high compliance levels \nFavorable demographics |
| EXAMPLES | China, New Zealand, South Korea, and Taiwan | Brazil, Germany, Italy, Nigeria, the UK, and the US | Sweden |
2.3. PPP in the governments’ strategies for fighting the COVID-19 pandemics

The PPPs specifics due to the dialectic of interaction between the state and private business and the variety of operations with public goods are determined by the functions and fiscal capabilities of the state in society [11]. This is due to the fact that, firstly, the state combines subjective and objective principles; secondly, it institutionalizes the activities of both market agents and business entities acting on behalf of the state; thirdly, in fact, it "uncontrollably" redistributes to its budget a significant part of the national income created by society; fourthly, it follows its own norms of behaviour contrary to the implementation of the function of maximizing public utility, fifthly, it introduces conflict into its relations with society and citizens as a result of inadequate aggregation of individual values in public choice, which, sixthly, it orients all claims of society and citizens to the state for its inability to deal effectively with the crisis caused by COVID-19. Given all these circumstances, it should be emphasized that PPP projects are implemented on conditions dictated by the state. Even before COVID-19, numerous experts concluded that PPP projects in any field, especially in infrastructure, should either be very well prepared by the state, or they will not be effective. Moreover, only in the first case the technology of attracting private investment to implement capital-intensive long-term projects will work. But after the COVID-19 the state could be not in a position to provide full budget financing. It turns out that the conditions dictated by the state depend on whether there will be a quality infrastructure after COVID-19 and whether it will have a positive economic effect. National states associate the post-Great Lockdown future with bringing forward rather than the postponement or cancellation of projects to support employment and economic growth. But for this it is necessary to eliminate the consequences of the negative impact that the current economic crisis will most likely affect PPPs. It is about (1) the additional costs for all PPP projects, particularly those that are operational, mostly due to disinfection of equipment and facilities, and workforce shortages; (2) the decreasing revenue of user-funded PPP projects, particularly transportation and energy projects, due to the much-reduced demand; (3) specific challenges to projects that are in the construction phase, such as construction delays and supply chain disruption [12].

3. Results and discussion

As a result the strong economic recovery will benefit everyone if it depends on improved social safety nets and adequate forms of PPPs organization [13]. In this case, it is necessary to be aware of serious financial problems that can only be solved on the basis of broad-based fiscal partnership. This includes mixed public-private investment in health care, infrastructure, and climate change [14].

Policymakers should choose how to invest for the future in a fiscally prudent way, adopt well-planned discretionary policies to stimulate demand, and enhance social safety nets and unemployment benefits [15]. The author presents an experimental model of the institutional matrix, which makes it possible to choose an adequate form of PPP organization for implementing socially significant projects in the field of climate change and when other SDGs are achieved. The author’s approach to the theoretical characterization of PPP forms implies the need to include all the basic types of their organization: quasi-market, hierarchical and hybrid, as well as all of their many modifications. And that is the broad interpretation of public-private partnerships [16]. Each individual basic type of PPP organization (its institutional matrix) contains many potential sub-options for its reproduction.

In the matrix construction of PPP organization forms, the author limited them to three basic structures (quasi-market, hierarchical, and hybrid). To simplify the construction of the institutional matrix, the author used its square version with three rows and three columns. Let matrix $A$ represent the preferences of the private partner when choosing PPP organizational forms for the implementation of a transaction with the public good [17]. Each element of the row of matrix $A$ indicates the preference of a private business for a particular form of PPP organization. The final preference of a private partner will be indicated with the symbol $a_{ij}$, and their modifications - from the quasi-market to hierarchical and hybrid - will vary from 1 to 2 and 3 depending on transaction costs per line (index $i$, $i = 1, 2, 3$) and depending from delegation of ownership of property in columns (index $j$, $j = 1, 2, 3$). Then the elements of the row with the number $i$ can be represented as $(a_{1i}, a_{2i}, a_{3i})$, and the elements of
column number $j \sim (a_{1j}, a_{2j}, a_{3j})$. The following is a matrix $A$ of preferences of a private partner with respect to PPP organization forms in the form (1)

$$
A = \begin{pmatrix}
    a_{11} & a_{12} & a_{13} \\
    a_{21} & a_{22} & a_{23} \\
    a_{31} & a_{32} & a_{33}
\end{pmatrix}
$$  \hspace{1cm} (1)

Arguing in a similar way, the author constructs matrix $B$ (2) taking into account the interests of the state in relation to the forms of organization of PPPs and designates them with a symbol $b_{ij}$, and their modifications - from the quasi-market to hierarchical and hybrid - will vary from 1 to 2 and 3 depending on transaction costs per line (index $i$, $i = 1, 2, 3$) and depending from delegation of ownership of property in columns (index $j$, $j = 1, 2, 3$). Accordingly, the rows of the matrix $B$ are denoted by $(b_{1i}, b_{2i}, b_{3i})$, and the columns - by $(b_{1j}, b_{2j}, b_{3j})$.

$$
B = \begin{pmatrix}
    b_{11} & b_{12} & b_{13} \\
    b_{21} & b_{22} & b_{23} \\
    b_{31} & b_{32} & b_{33}
\end{pmatrix}
$$  \hspace{1cm} (2)

The final “institutional matrix” $C$ (3) is a form of PPP organization, regarding which the preferences of the state and its private partner coincide. For this purpose the matrices $A$ and $B$ are multiplied, and the rows and columns of the resulting “institutional matrix” $C$ (3) are obtained below:

$$
C = \begin{pmatrix}
    a_{11} & a_{12} & a_{13} \\
    a_{21} & a_{22} & a_{23} \\
    a_{31} & a_{32} & a_{33}
\end{pmatrix} \times \begin{pmatrix}
    b_{11} & b_{12} & b_{13} \\
    b_{21} & b_{22} & b_{23} \\
    b_{31} & b_{32} & b_{33}
\end{pmatrix}
$$  \hspace{1cm} (3)

As a result, below there are the rows and columns of the final “institutional matrix” $C$ (4):

$$
C = \begin{pmatrix}
    c_{11} & c_{12} & c_{13} \\
    c_{21} & c_{22} & c_{23} \\
    c_{31} & c_{32} & c_{33}
\end{pmatrix}
$$  \hspace{1cm} (4)

where 

$$
c_{ij} = a_{ij}b_{1j} + a_{12}b_{2j} + a_{33}b_{3j}
$$  \hspace{1cm} (5)

Thus, matrix (4) is a set of alternative forms of organizing PPPs (“institutional matrices”) of its three basic options (quasi-market, hierarchical, and hybrid), for which the preferences of PPP partners — public and private — coincided. This is the logic of constructing a simple matrix model, which can be applied to any institutional matrix that describes PPPs under the condition of a certain meaningful filling of its cells.

4. Summary

So, the solution to the problems of the economic crisis caused by COVID-19 largely depends on the effectiveness of the state, which directly depends on the restoration of interaction and mutual trust between the state and society. The latter is most feasible on the example of the accelerated development of PPPs in those areas of the state’s activity that has been most affected by the COVID-19 pandemic. It is about the sphere of public goods, which until COVID-19 were a priority area of partnership between the state and private business. After COVID-19, the state is forced to consider budgetary constraints and make informed choices among possible forms of “alliances” between the state and private investors. In this case, both the traditional goals of minimizing transaction costs and increasing the efficiency of transactions with public goods, and the time parameters for obtaining socially significant results should be taken into account. The basic forms of PPPs allow the state and private business to optimize the sharing of risks and the burden of expenses as the capabilities of the public segment expand, as well as in the process of creating optimal “rules of the game”, conditions and effective incentives to maximize the potential of the national economy. The success of PPPs at the stage of economic revival after COVID-19 largely depends on how much the technology of attracting private investment to the implementation of capital-intensive long-term projects works, the state is not able to provide full budget financing for. Investments in infrastructure give a quick result in the
economy recovering from the crisis, as jobs are immediately created in construction and industry, and employment growth helps support consumer demand. But most importantly, short-term increase in demand is followed by long-term multiplier effects. In order to achieve these goals everything should be done to create a trust driven recovery environment that is collaborative and partner and stakeholder friendly. National governments should review infrastructure PPP projects in the sectors most affected by the crisis - airports, ports, roads, transport, and energy - to understand demand and supply-side impacts. The primary problems that need to be resolved as soon as possible include obtaining an adequate assessment by states of the effectiveness of contractual provisions on PPP projects, expert consideration of restructuring and coordination of sources of contract financing, review of contracts and problem asset management tools [18]. This should be done in discussion of the governments and their private partners and other relevant stakeholders such as financiers and regulators.

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