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WAYS TO RESTORE NATIONAL TRANSPORT AND LOGISTICS ACTIVITIES IN THE POSTWAR PERIOD

The article is devoted to the issue of finding effective ways to restore the sector of transport and logistics activities of the country in the postwar period, which is currently relevant for Ukraine. The state of international transportation during the war is analyzed. It is established that the process of restoration of the transport and logistics sector in the country is already underway and consists of a number of measures in the field of customs, logistics and transports. The experience of restoring the transport sector in European countries as part of the national critical infrastructure is considered. It is determined that one of the main conditions for effective economic recovery is international support. The key programs, diplomatic and legal documents that formed the basis for the creation of international support for Ukraine in economic recovery in general and the transport sector in particular are considered. The basic directions in which the action of the specified support for transport and logistics activity is directed are established.

Keywords: *transport and logistics activities, postwar period, international support, critical infrastructure*

Introduction. In the 22 years of the 21st century, there have been more than 60 wars, military conflicts, uprisings and coups (more than 10 in Europe) that have caused varying degrees of damage to infrastructure, economic, energy and industrial failures. In the post-war reconstruction of these industries, one of the most important conditions is the quality of the transport component. It is the well-adjusted transport and logistics activities of the country that determine not only the direct restoration of the national economy, but also the preservation and further development of international relations, which are of key importance for modern economies of developed countries.

Therefore, the issue of rebuilding the domestic transport infrastructure, adapting the transportation process to military and post-war conditions of operation, restoration and increase of transportation is currently an urgent problem, the solution of which is based on returning to the prewar level of national economy and its further development.

Analysis of recent research and problem statement. The issue of restoring the transport component of the economy in the postwar period, including logistics and warehousing, is the subject of research by many Ukrainian and foreign scientists. Among them should be noted works of general

methodological nature, as well as works of economic, political nature, combining theoretical and applied aspects and highlighting foreign experience.

Political publication [1] about Russia's invasion of Ukraine was based on false premises, faulty assumptions, and a weak strategy. With the development of the conflict, heavy losses have led to an increase in the workload of the attacker. Existential warfare using scattered light infantry tactics with a high level of motivation shows military and political leaders how the political context continues to impose restrictions on the people and the economic condition of the state.

The article [2] predicts changes in global and regional incidences of armed conflict for the 2010–2050 period. Predictions are based on a statistical model estimated on data on socioeconomic and demographic characteristics as well as information on previous conflicts and conflicts in neighboring countries. Predictions are obtained through simulating the behavior of the conflict variable implied by the estimates from this model.

The developing of models for predicting national conflicts is essential for international resource allocation strategies that affect both regional and global security and stability. The publication [3] proves this. It is devoted to modeling complex regional environments which is achieved through economical and interpretable models. Using an unique set of open-source data, a set of regional models is being developed that predict transition states out of violent conflict. In addition, the controlled variables of the previous study are considered for inclusion in the developed models. Conditional logistic regression models detail the complex political, cultural, and ethnic characteristics of the six geographic regions, as well as capturing the obvious and subtle differences between regional neighbors currently experiencing violent conflict and those who are not.

The author of the article [4] used systematic analysis to highlight the main directions of the country's recovery from an economic point of view. Special attention is paid to the study of the stages of post-war reconstruction, key measures of the government and international organizations.

Analyzed in [5] the world experience on the possibilities of restoring economic ties and relations between enterprises in the post-conflict period includes different models depending on the characteristics of the conflict. A methodical approach to the choice of a model for restoring broken economic ties of enterprises that are on different sides of the line of demarcation and determination the conditions of its use is proposed.

Some of studies [6-9] show that transport costs have a serious negative impact on the transport process, even in peacetime, and in many cases transport costs can support trade even more than customs.

The purpose and tasks of the study. However, the issues of restoring both direct national production and the organization of the process in the field of transport infrastructure and logistics activities in post-conflict areas, which determines the relevance of the article, determines its purpose and objectives, remain insufficiently studied.

Materials and methods of research. Many states, including Azerbaijan, the Balkans, Syria, Georgia and others, have faced the need to rebuild areas whose economies and infrastructure have been destroyed by hostilities. The use of international experience in the field of restoration and development of destroyed territories is a prerequisite for post-war planning, including in Ukraine. At the same time, the normalization of life in the regenerating territories of Ukraine has its difficulties, differs from many similar problems in the above countries, as it goes far beyond solving only logistical and financial problems and is associated with a number of problems. [10-12].

In the restoration of the territories affected by the war, special attention is paid to the transport infrastructure. The importance of this industry is due to the fact that stable transport and logistics connections of the regions contribute to the rapid recovery of management. In addition, during military operations, roads and transport points are usually the most damaged and destroyed as strategically important objects for the movement and storage of military equipment and, consequently, as battlefields.

As of May 2022, as a result of hostilities on the territory of Ukraine, about 23% of railway tracks were damaged, including 6,3 thousand km of main tracks. In the first quarter of 2022 exports

amounted to 102,9% compared to the first quarter of 2021, imports – 94,4% compared to the same period last year (Fig. 1). At the same time, foreign trade operations were conducted with partners from 214 countries.

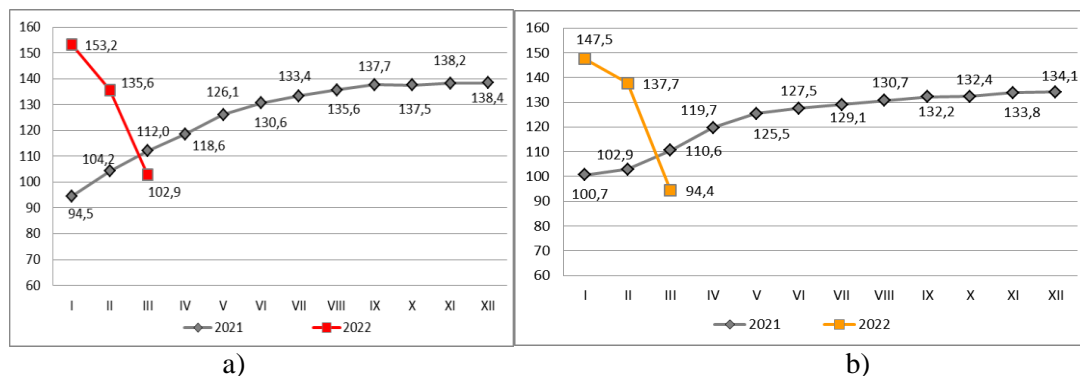


Fig. 1. Monthly dynamics of changes in exports (a) and imports (b) of goods, % to the corresponding period of the previous year, cumulative total

If in the first two months of the quarter external transportation was carried out mainly in peacetime, in March the nomenclature of goods and their volumes of transportation changed in relation to similar indicators of the same period of previous years (Table 1). Thus, the least changes in exports of wood and wood products, electric machinery, increased 1,75 times exports of oil and some petroleum products. Imports of oils, ferrous metals, wood and polymers, as well as non-strategic goods – clothing and footwear, precious and semiprecious stones – decreased the most.

Table 1. Structure of external cargo transportation in 2022

Cargo category	Share in total in 2022, %	Share compared to March 2021, %	Cargo category	Share in total in 2022, %	Share compared to March 2021, %
exports			imports		
mineral fuels, oil, petroleum products	20,1	71,7	mineral fuels, oil, petroleum products	28,2	90,3
chemical products	2,1	32,2	chemical products	14,5	30,1
products of plant origin	18,8	52,1	products of plant origin	4,0	33,7
machines, electrical equipment	13,4	73,4	machines, electrical equipment	17,0	16,9
base metals	16,6	33,4	base metals	3,2	17,8
food products	3,4	27,2	food products	3,5	19,6
wood, wood products	5,8	93,3	means of land transport	7,7	6,6
fats and oils	7,5	41,9	polymeric materials	5,4	15,5
Others	12,3		others	16,5	

(Source: [13])

Restoration of any industry, including transport, is impossible without a combination of approaches to the renewal of the old and the construction of new ones. Preparation for the post-war recovery of both the transport component and the country's economy as a whole should be a detailed analysis and comprehensive study of international experience on this issue. In particular, for those states that have similar territorial, political, economic and other general aspects of functioning.

Based on past experience in the restoration of transport and logistics infrastructure, it is impossible not to turn to the heritage of their ancestors. Thus, the consequences of the Second World War in the

European part of the former USSR in the field of railway transport were damage to 65 thousand km of tracks, destruction of 13 thousand bridges, more than 4 thousand railway stations and about 500 thousand units of rolling stock. The implementation of measures to restore the railways was then divided into three main stages:

1. laying of main tracks, restoration of bridges and the minimum required number of tracks at stations, arrangement of temporary communication, water supply and other structures;
2. restoration of locomotive, wagon and energy facilities and bringing all restored structures to a condition that ensures normal train movement;
3. complete restoration of the railways to the pre-war level of capacity.

Immediately after the liberation of the districts from occupation, the issues of launching transport routes, primarily railways, to meet the needs of supplying the front and advancing troops were resolved. Subsequently, these established lines and routes were used to improve the organization of transportation in order to recover the economy as soon as possible.

The priority issues on the railway were the provision of resources: reduction of car downtime at stations, improvement of freight operations, maximum satisfaction of the needs of industrial transport in rolling stock. In air transport, the greatest attention was paid to the condition of runways, in automobile – the number of trucks, fuel economy. In water transport, important measures were the clearing of waterways using self-propelled and non-self-propelled fleets, the use of small rivers for navigation, and the strengthening of port mechanization. The transport measures were based on the approved socio-economic development plans.

After the military conflict in the Donbas in 2014 the Eastern Ukraine Recovery and Peacebuilding Assessment was carried out jointly by the European Union, the United Nations, and the World Bank Group, and with the leadership and participation of the Government of Ukraine [14]. According to the results of the report on the assessment of aggregate needs for the reconstruction of the infrastructure and social services sector of Ukraine, the transport component is allocated the largest part of the funds to improved standards (the «building back better and smarter» principle) – 44%. This is due to the fact that the transport infrastructure has multiple linkages with the social cohesion and economic recovery components of the regions. The rehabilitation and reconstruction of damaged infrastructure will provide opportunities to introduce labor-intensive construction technologies.

The authors of the document emphasize that rehabilitate and reconstruct critical transportation infrastructure and associated maintenance should be carried out in several stages:

- rehabilitate the state road and bridges network,
- rehabilitate municipal infrastructure (roads and bridges),
- rehabilitate railway and air transport infrastructure,
- provide for maintenance of state and municipal transport networks.

Particular attention needs to be paid to forecasting and attracting foreign investment, their distribution by sectors of the economy and qualitative and quantitative indicators of results.

According to [15] transport and energy are the main sectors of critical infrastructure in the system of national security and interests of the European Union. Critical infrastructure restoration and protection means measures aimed at ensuring the functionality, continuity and integrity of critical infrastructure in order to prevent threats and risks, as well as to neutralize their consequences and quickly upgrade the infrastructure in case of failures, attacks and other violating cases. Critical Infrastructure Directives have already been implemented and put into practice in countries such as the Slovak Republic, Bulgaria, Hungary, Poland, Norway, Switzerland and others.

According to the concept of critical infrastructure, it is necessary to focus on systems, networks and individual objects, the destruction or disruption of which will have the most serious negative consequences for the national security. Elements within critical infrastructure, in turn, can also be ranked in order of national importance. Therefore, the critical infrastructure sectors are divided into a number of groups by purpose, including the following:

- energy supply to the industry;

information technologies and communications;
ways of communication by types of transport;
drinking water supply chains;
risk management systems;
support of important social functions, safety and health of the population.

Thus, Ukraine is geographically part of the pan-European energy and transport space, and therefore linked to European critical infrastructure, which opens up opportunities for joint solutions to critical infrastructure reconstruction and security issues between the authorities of Ukraine and Europe.

The experience of the restoration of the country during the last war period shows that, despite the peculiarities of each state, the timing and sequence of the implementation of restoration measures are of key importance. While the dynamic growth of the economy should be a long-term goal, the main short-term goal should be to ensure that the population can restore the main means of production, transportation and communication and improve security.

In the context of the early resumption of transport and logistics activities in Ukraine, a number of measures have already been taken to adapt and develop enterprises in the transport sector and the economy as a whole. The authors propose to divide these measures into three groups – customs, logistics and transport (Table 2).

Table 2. Measures for the priority resumption of transport and logistics activities under martial law

Group <i>1</i>	List of activities <i>2</i>
Customs	<ol style="list-style-type: none"> 1. the import duty, excise duty and value added tax, which were to be paid by individuals during the importation of motor vehicles into the customs territory of Ukraine in accordance with the specified list, were abolished. Features of preferential customs clearance for legal entities are established; 2. confiscated motor vehicles for the needs of the armed forces were brought to the customs territory of Ukraine; 3. a zero rate of excise tax on motor gasoline, heavy distillates and liquefied gas has been set. VAT taxation of operations on supply of these resources, as well as crude oil products to the customs territory of Ukraine has been reduced.
Logistics	<ol style="list-style-type: none"> 1. a number of logistics hubs have been set up in the western regions of the country to facilitate the importation of humanitarian aid and its prompt distribution; 2. European Humanitarian Hub compatible with Slovak Republic has been established. Its structure includes: a direct railway line to Ukraine, an international airport, an extensive network of roads of international importance and a developed transport and logistics infrastructure; 3. relocation of Ukrainian enterprises from the zone of active hostilities is carried out with the involvement of the railway and the national postal operator.
Transports	<ol style="list-style-type: none"> 1. organized free evacuation of more than 3,5 million people by rail across the country and in neighboring countries; 2. the procedure of nationalization of about 15 thousand railway cars of the occupying country continues.

(Source: by authors)

Obviously, the restoration of transport, social and energy infrastructure in Ukraine is crucial in the postwar development of the country. The main source of funding is international grants and loans.

The main legal basis for the European Union's support for the comprehensive reconstruction of the country through a combination of grants and loans is the program "Reconstruction of Ukraine". The Strategic Plan for the "Reconstruction of Ukraine", approved by the European Commission, contains the key reforms and investments needed to create the right conditions for Ukraine's reconstruction and sustainable development.

The directions of complex reconstruction of the country according to the program are:

1. reconstruction of transport infrastructure with ensuring high mobility of movements;
2. reconstruction of social infrastructure, in particular housing, medical institutions, educational institutions, etc.;
3. recovery and development of the energy and digital industries in accordance with European standards.

The signed memorandum of cooperation in the field of transport between Poland and Ukraine on April 24, 2022 contains provisions on increasing freight traffic across the western border of Ukraine, establishing a joint logistics company, joint technical and organizational solutions to minimize differences in customs clearance, problems of different railway widths. The document also mentions the search for new railway routes and rolling stock to cover the planned volume of traffic for the export of goods that previously went to Europe through seaports.

This issue needs to be considered separately, as a result of the blockade of ports, international transportation of export cargo has been suspended indefinitely. Given that the three strategically important types of cargo for export are grain, ferrous ores and metals, export flows were directed by rail and road, but their capacity is almost 10 times lower than that of seaports.

During the Summit of the International Transport Forum on May 19, 2022, a Memorandum on Transport Cooperation between the United States and Ukraine was signed [16], which provides for the implementation of projects for the restoration and development of key transport and logistics activities of the country. The main areas are as follows:

in railway transport – renewal of the fleet of locomotives and wagons by 2030; creation of a system of high-speed railway connections between large cities; increasing the transport infrastructure of large cities;

in road transport – modernization of existing roads, installation of automatic weighing stations on them; introduction of the latest technologies to reduce greenhouse gas emissions; further electrification of transport;

in aviation – development and implementation of environmentally friendly aviation fuels and other clean technologies in accordance with international standards; addressing airspace security and civil aviation.

One of the planned options for rebuilding the destroyed infrastructure of the country should be the use of assistance and experience of industrial and transport modernization of the Republic of Korea as one of the world's leading manufacturers of machinery and equipment on alternative energy sources.

Conclusions. Thus, the resumption of transport and logistics activities in the post-conflict period is a complex and multifaceted process. Based on the experience of reconstruction of world powers, we can say that its success is influenced by a number of important factors, including a clear and consistent recovery plan based on existing experience and competence of developers, willingness of relevant sectors to adapt, comprehensive approach to solving problems, availability of international financial and technical support, etc.

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ШЛЯХИ ВІДНОВЛЕННЯ НАЦІОНАЛЬНОЇ ТРАНСПОРТНО-ЛОГІСТИЧНОЇ ДІЯЛЬНОСТІ У ПІСЛЯВОЄННИЙ ПЕРІОД

Стаття присвячена питанню пошуку ефективних шляхів відновлення сектору транспортно-логістичної діяльності країни у повоєнний період, який наразі є актуальним для України. Проаналізовано стан міжнародних перевезень у період воєнних дій. Встановлено, що процес відновлення транспортно-логістичного сектору у країні вже триває і складається з ряду заходів митного, логістичного та транспортного напрямків. Розглянуто досвід відновлення транспортного сектору у європейських країнах як частини національної критичної інфраструктури. Визначено, що однією з основних умов ефективного відновлення економіки є міжнародна підтримка. Розглянуто ключові програми, дипломатичні та юридичні документи, що полягли в основу створення міжнародної підтримки України у відновленні економіки у цілому та транспортної галузі зокрема. Встановлено базові напрямки, у яких спрямована дія зазначеної підтримки для транспортно-логістичної діяльності.

Ключові слова: транспортно-логістична діяльність, післявоєнний період, міжнародна підтримка, критична інфраструктура.