

## **TRENDS, DETERMINANTS AND PROBLEMS OF TRANSPORT SYSTEM, INFRASTRUCTURE AND LOGISTICS DEVELOPMENT IN THE MODERN WORLD: ECONOMIC AND POLITICAL CONTEXTS**

The article analyzes economic and political trends, determinants and problems of transport system, infrastructure and logistics development in the modern world. This is based on the assumption that the world transport system is a combination of national and regional transport systems, including a set of interconnected and interacting modes of transport, and vice versa. The author argued that the world transport system is characterized by territorial-geographical and profile-species structure and it can be classified by level of organization, geographical indication, level of development, modes of transport and infrastructure, etc. It is revealed that the development trends of the main modes of transport are related to the basic world economic processes, in particular to world production and trade. At the same time, it is proved that the world transport system is conditioned not only socio-economically, but also politically, in particular by the actions of the state, society or its individual segments both inside and outside the state.

*Keywords: transport, transport system, infrastructure, logistics.*

### **Tendencje, determinanty i problemy rozwoju systemu transportowego, infrastruktury i logistyki we współczesnym świecie: kontekst gospodarczy i polityczny**

Artykuł analizuje trendy gospodarcze i polityczne, determinanty i problemy rozwoju systemu transportowego, infrastruktury i logistyki we współczesnym świecie. Odbywa się to w oparciu o założenie, że światowy system transportowy jest kombinacją krajowych i regionalnych systemów transportowych, w szczególności zbioru wzajemnie powiązanych i oddziałujących na siebie rodzajów transportu i odwrotnie. Argumentuje się, że światowy system transportowy charakteryzuje się strukturą terytorialno-geograficzną i specyficzną dla profilu, a także można go klasyfikować według poziomu organizacji, cech geograficznych, poziomu rozwoju, rodzaju transportu i cech infrastruktury itp. Ustalono, że kierunki rozwoju głównych rodzajów transportu są związane z podstawowymi globalnymi procesami gospodarczymi, w szczególności z globalną produkcją i handlem. Jednocześnie udowodniono, że światowy system transportowy jest determinowany nie tylko społeczno-ekonomicznie, ale także politycznie, w szczególności przez działania państwa, społeczeństwa lub jego poszczególnych segmentów zarówno wewnątrz państwa, jak i poza nim.

*Słowa kluczowe: transport, system transportowy, infrastruktura, logistyka.*

## **ТЕНДЕНЦІЇ, ДЕТЕРМІНАНТИ І ПРОБЛЕМИ РОЗВИТКУ ТРАНСПОРТНОЇ СИСТЕМИ, ІНФРАСТРУКТУРИ Й ЛОГІСТИКИ У СУЧАСНОМУ СВІТІ: ЕКОНОМІЧНИЙ І ПОЛІТИЧНИЙ КОНТЕКСТИ**

У статті проаналізовано економічні і політичні тенденції, детермінанти й проблеми розвитку транспортної системи, інфраструктури й логістики у сучасному світі. Це зроблено з огляду на припущення, що світова транспортна система є комбінацією національних та регіональних транспортних систем, зокрема сукупністю взаємопов'язаних і взаємодіючих видів транспорту, і навпаки. Аргументовано, що світовій транспортній системі властива територіально-географічна і профільно-видова структурованість, а також вона може бути класифікована за рівнем організації, географічною ознакою, рівнем розвитку, видами транспорту й інфраструктурною ознакою тощо. Встановлено, що тенденції розвитку основних видів транспорту пов'язані з базовими світовими економічними процесами, зокрема зі світовим виробництвом і торгівлею. Водночас доведено, що світова транспортна система зумовлена не лише соціально-економічно, а й політично, зокрема діями держави, суспільства або окремих його сегментів як всередині держави, так і за її межами.

*Ключові слова: транспорт, транспортна система, інфраструктура, логістика.*

In the development of its transport system, infrastructure and logistics almost every country and region of the world, especially Europe depends on trends and problems in this area at the global and international levels, both economically and politically. The main reason for this state of affairs is that almost every country and part of the world is an element and structural component of the global and international transport system, which has become in recent decades more and more globalized and transnational. This is due to the fact that in general, modern countries are gradually and on average becoming more developed in terms of infrastructure, income levels and human potential, which intensifies and streamlines the development of transport, etc. Accordingly, a whole range of issues, trends and problems are outlined, which reflect the parameters of the transport system, infrastructure and logistics in the modern world. Their research is of particular scientific interest, in particular due to the fact that the current state of development of the transport system, infrastructure and logistics in the world inevitably depends on both economic and political factors and contexts.

The stated topic or its individual components have always been and remain the subject of scientific research by a number of researchers and analysts who focus on the development of transport and transport systems in the world as a whole and at the level of individual countries and regions. In particular, in the context of the European cluster of research on transport, this can be seen in the works of such scientists as M. Bechtel<sup>1</sup>, J. Bremmer<sup>2</sup>, E. Efimova and K. Pinoniyemi<sup>3</sup>, A. Emirova<sup>4</sup>, V. Galakhov<sup>5</sup>, N. Jensen<sup>6</sup>, N. Krylova<sup>7</sup>, I. Mogilevkin<sup>8</sup>, V. Nazarenko and K. Nazarenko<sup>9</sup>, A. Rybchuk<sup>10</sup>, O. Zakharova<sup>11</sup>. Their attitude and elaboration are extremely important in our attempt to systematize and structure the economic and political dimensions of trends and problems in the development of the transport system, logistics and infrastructure in the modern world.

Based on the analysis of the whole array of available research, it can be relatively easily stated that the world or international transport system is a set of integrated national and / or regional transport systems, represented by different interconnected and interacting modes of transport, which ensure the implementation of both domestic and international transport in order to ensure the stable functioning of national, regional and global economies<sup>12</sup>. Thus, the world transport system is characterized by structure, which determines the possible directions of analysis of the transport system, logistics and infrastructure in the world in terms of specifics and features of the elements that make it up. First, the primary element of the world transport system is considered to be the national transport systems of individual countries and / or regions, but each such transport system has certain properties that allow them to be combined into diverse groups. As a result, the world transport system should be considered as a set of national and regional transport systems in terms of their socio-economic development, highlighting the transport systems of developed countries and regions, transport systems of

<sup>1</sup> Bechtel M., The Political Sources of Systematic Investment Risk: Lessons from a Consensus Democracy, *"The Journal of Politics"* 2009, vol 71, nr. 2, s. 661-677.

<sup>2</sup> Bremmer J., Managing Risk in an Unstable World, *"Harvard Business Review"* 2005, s. 51-60.

<sup>3</sup> Efimova E., Pinoniyemi K., Politicheskiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, *"Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika"* 2014, vol 2, s. 32-56.

<sup>4</sup> Emirova A., Transformatsiya transportnykh sistem v usloviyakh globalizatsii mirovoy ekonomiki, *"Nauchnyy zhurnal NIU ITMO. Seriya Ekonomika i ekologicheskij menedzhment"* 2014, nr. 2.

<sup>5</sup> Galakhov V., Evolyutsiya i periodizatsiya razvitiya transporta, *"Mir transporta"* 2004, nr. 4, s. 4-15.

<sup>6</sup> Jensen N., Political Risk, Democratic Institutions and Foreign Direct Investment, *"The Journal of Politics"* 2008, vol 70, nr. 4, s. 1040-1052.

<sup>7</sup> Krylova N., *Mizhnarodni stratehii rozvytku derzhavno-pryvatnoho partnerstva v transportni baluzi*, źródło: <http://www.sworld.com.ua/index.php/ru/conference/the-content-of-conferences/archives-of-individual-conferences/march-2013> [odczyt: 12.12.2013].

<sup>8</sup> Mogilevkin I., *Transport. Mirovaya ekonomika. Global'nyye tendentsii za 100 let*, Wyd. Ekonomist 2003.

<sup>9</sup> Nazarenko V., Nazarenko K., *Transportnoye obespecheniye vneshneekonomicheskoy deyatel'nosti*, Wyd. Tsentr ekonomiki i marketinga 2000.

<sup>10</sup> Rybchuk A., Transportni systemy svitov – vazhlyvyi element hlobalnoi vyrobnychoi infrastruktury, *"Aktualni problemy ekonomiky"* 2004, nr. 7, s. 99-104.

<sup>11</sup> Zakharova O., Hlobalni chynnky rozvytku potentsialu svitovoi transportnoi systemy, *"Ekonomichnyi chasopys-XXI"* 2011, nr. 9-10, s. 14-17; Zakharova O., Struktura suchasnoi svitovoi transportnoi systemy, *"Aktualni problemy mizhnarodnykh vidnosyn: politychni, pravovi ta ekonomichni aspekty"*, Wyd. DPI 2011, s. 19-23.

<sup>12</sup> Zakharova O., Hlobalni chynnky rozvytku potentsialu svitovoi transportnoi systemy, *"Ekonomichnyi chasopys-XXI"* 2011, nr. 9-10, s. 14-17; Zakharova O., Struktura suchasnoi svitovoi transportnoi systemy, *"Aktualni problemy mizhnarodnykh vidnosyn: politychni, pravovi ta ekonomichni aspekty"*, Wyd. DPI 2011, s. 19-23.

developing countries and regions, and transport systems of underdeveloped countries and third world regions<sup>13</sup>. Secondly, by distinguishing the features of individual transport systems on a geographical basis, it is possible to distinguish such elements or regional transport systems within the world transport system as transport systems of North America, Latin America, Europe, the European Union, Asia, Africa, Australia, Oceania, etc.

Another approach to the structuring of the world transport system is based on the selection of modes of transport involved in the processes of transportation and delivering<sup>14</sup>. In this regard, we can identify the following elements of the world transport system: road transport system, rail transport system, sea and river transport system, air transport system, pipeline transport system and more<sup>15</sup>.

In turn, from the standpoint of the analysis of the world transport system as an object of global infrastructure and logistics, its elements should include the world's transport network, vehicles, transport companies and transport management system, which together constitute the so-called resource component of the world transport system<sup>16</sup>. In summary, this means that the world transport system can be classified by level of organization, geographical indication, level of development, modes of transport and logistics and infrastructure, etc., which are interconnected in the construction of a holistic knowledge of the transport system in the modern world. This will be manifested in the fact that national and / or regional transport systems as elements of the world transport system in terms of organization and development can belong to the transport systems of developed countries or regions, and to the transport systems of developing countries and regions, and by type of transport can be classified into road, rail and other transport systems. Moreover, this does not deny the fact that each element of the typology of the world transport system is characterized by its own infrastructural and logistical components – the transport network, vehicles, transport companies and more.

Their intercomparison and comparison make it possible to identify relevant trends in the modern (especially after the Second World War and later, including after the global financial and economic crisis of the early 21<sup>st</sup> century) transport system in the world. They are, for example, manifested in the fact that: more than half of the world's freight traffic is served by sea transport, instead, in the structure of intra-continental transport, three quarters are occupied by various land modes of transport; in Western Europe the leader in freight transport is road transport, in Central and Eastern Europe it is rail transport, on the other hand, in North America these modes of transport occupy approximately equal shares, although in general there is a noticeable tendency

<sup>13</sup> Rybchuk A., Transportni systemy svitu – vazhlyvyi element hlobalnoi vyrobnychoi infrastruktury, «Aktualni problemy ekonomiky» 2004, nr. 7, s. 99-104.

<sup>14</sup> Mogilevkin I., *Transport. Mirovaya ekonomika. Global'nyye tendentsii za 100 let*, Wyd. Ekonomist 2003; Rybchuk A., Transportni systemy svitu – vazhlyvyi element hlobalnoi vyrobnychoi infrastruktury, «Aktualni problemy ekonomiky» 2004, nr. 7, s. 99-104.

<sup>15</sup> Zakharova O., Struktura suchasnoi svitovoi transportnoi systemy, «Aktualni problemy mizhnarodnykh vidnosyn-politychni, pravovi ta ekonomichni aspekty», Wyd. DPI2011, s. 19-23.

<sup>16</sup> Zakharova O., Struktura suchasnoi svitovoi transportnoi systemy, «Aktualni problemy mizhnarodnykh vidnosyn-politychni, pravovi ta ekonomichni aspekty», Wyd. DPI2011, s. 19-23.

to increase the share of road transport in the structure of both domestic and international transportation. On the other hand, developed countries successfully control more than two-thirds of the international freight market, while developing countries account for less than a third of the world's freight turnover<sup>17</sup>. As a result, the development of the world's transport system, logistics and infrastructure is characterized by the rapid growth of the transport network, especially highways, the length of which has at least doubled in the last half century. A much smaller share of traffic, but in absolute terms, is observed for air transport, whose cargo turnover has quadrupled over the same period. On the other hand, the absolute and relative values of rail transport are much lower and even negative, which today accounts for less than 10 percent of all transport routes. As for the road network, it is the widest in the United States, the EU and China. In turn, the longest inland waterways are in Brazil, the United States, Indonesia and India, and not in Europe<sup>18</sup>.

Along with the planned trends in the development of world transport, a topical issue still is the study of areas to expand the potential of the world transport system. The fact is that improving the efficiency of the transport system is one of the four fundamental factors in the globalization of the world economy, in particular, along with trade liberalization, the development of telecommunications and international standardization<sup>19</sup>. Thus, the world transport system is a link in the process of globalization of the world economy, which ensures the blurring of national / regional borders and the formation of a single world market<sup>20</sup>. This is manifested in the fact that in the structure of the world transport system, different modes of transport have their own specifics of operation, especially currently, when the requirements for the quality of services are growing rapidly, ensuring maximum speed and convenience of transportation with minimal use of appropriate resources<sup>21</sup>.

Therefore, the potential of certain types of world transport, along with internal infrastructural factors determined by the quantitative and qualitative characteristics of the transport network and moving vehicles, is most strongly influenced by global factors, in particular, the state, trends, dynamics and structure of world trade, which form the demand for a particular flow of goods in world markets and, as a consequence, determine the volume of demand for transportation services by certain modes of transport. In addition, the potential of the world transport system is affected by competition in world transport services markets and integration processes in the world economy, which determine the consolidation of traffic routes to relevant countries and regions within international transport corridors, thereby strengthening their transport potential.

<sup>17</sup> Zakharova O., Struktura suchasnoi svitovoi transportnoi systemy, „Aktualni problemy mizhnarodnykh vidnosyn:politichni, pravovi ta ekonomichni aspekty”, Wyd. DPI2011, s. 19-23.

<sup>18</sup> Zakharova O., Struktura suchasnoi svitovoi transportnoi systemy, „Aktualni problemy mizhnarodnykh vidnosyn:politichni, pravovi ta ekonomichni aspekty”, Wyd. DPI2011, s. 19-23.

<sup>19</sup> Kuz'menko Yu., Globalizatsionnyye protsessy mirovoy ekonomiki, vliyayushchiye na funktsionirovaniye mezhdunarodnoy transportnoy sistemy, „Viznik ekonomiki transportu i promislivosti” 2010, nr. 36, s. 36.

<sup>20</sup> Galakhov V., Evolyutsiya i periodizatsiya razvitiya transporta, „Mir transporta” 2004, nr. 4, s. 15.

<sup>21</sup> Zakharova O., Hlobalni chynnnyky rozvytku potentsialu svitovoi transportnoi systemy, „Ekonomichnyi chasopys-XXI” 2011, nr. 9-10, s. 14-17.

This should be taken into account when studying the development trends of individual modes of transport, as their combination is an economic determination of the essence of the world transport system.

It is very important that the development trends of the main modes of transport are related to world economic processes, first of all to world production and world trade.

It is noteworthy that in the framework of land transport, which mainly provides inland and domestic transport of goods and passengers, the fiercest competition is observed between road and rail transport<sup>22</sup>. On the one hand, it is obvious that road transport plays a leading role in passenger transport, as, for example, the number of road vehicles is growing rapidly (especially due to the US, Japan and Western Europe, where the quality of highways is the highest in the world). As a result, it is in the developed countries of the world that motor transport dominates among other types of means of transport, sometimes accounting for more than 80 percent of freight and passenger turnover<sup>23</sup>. On the other hand, it was found that rail transport holds the first place in the structure of world freight turnover, also steadily increasing the volume of traffic. Instead, in the structure of passenger turnover in most countries of the world, railways still occupy a small share, giving way to road and air transport (especially in the European Union and the United States).

As for non-land modes of transport, they are also in dynamic development, but in total they lag far behind the indicators of land transport in terms of freight, but especially passenger traffic. For example, the share of inland water transport in the structure of world freight and passenger turnover is less than five percent and is the most developed in China. Instead, the positions of non-land – in particular air and sea – transport in intercontinental (respectively) passenger and freight transport are much better. So, more than 80 percent of all foreign trade goods are transported by sea (especially from Asia, including China, India and Indonesia, and to a lesser extent North America and Western Europe). In turn, by an air transport which is characterized by high concentration and is the most globalizing industry of transport, not only all more intensive and passengers move more frequent but also goods and services move (especially in the USA, Japan, Germany).

At the same time, it should be noted that the development of the world transport system and infrastructure is sensitive to the development of the world economy and trade. Thus, in the context of the global financial and economic crisis, which since 2008 till 2009 led to a significant reduction in world production and trade, the volume of transportation by all modes of transport also decreased<sup>24</sup>. Similar trends were relevant in the case of the regional structure of world trade in goods and services, and thus in the case of regional trends in transport development, especially in developed regions.

As for developing regions and countries with economies in transition, they also experienced a significant reduction in merchandise exports, but the rate of decline in trade was slower than the

<sup>22</sup> Zakharova O., Hlobalni chynnyky rozvytku potentsialu svitovoi transportnoi systemy, „*Ekonomichnyi chasopys-XXI*“ 2011, nr. 9-10, s. 14-17.

<sup>23</sup> *EU energy and transport in figures 2010*, Wyd. Office for the Official Publications of the European communities 2010.

<sup>24</sup> Zakharova O., Hlobalni chynnyky rozvytku potentsialu svitovoi transportnoi systemy, „*Ekonomichnyi chasopys-XXI*“ 2011, nr. 9-10, s. 14-17.

world average. Interestingly, as a result of the global financial and economic crisis, it was recorded that: changes in freight and passenger turnover of all modes of transport are directly related to changes in world GDP, world merchandise exports and world exports of tourist services; the most dependent on the dynamics of GDP and the dynamics of merchandise exports is the freight turnover of sea and rail transport; changes in world GDP have the greatest impact on changes in passenger traffic by air; the dynamics of exports of tourist services is closely correlated with changes in passenger traffic by air and rail<sup>25</sup>. A similar situation began to emerge as a result of the full-scale Russian-Ukrainian war in 2022, as its effects affected not only transport in Europe, in what, however, the dependence of the regional and world transport system on both economic and political factors was fundamentally revealed.

As a result, it gives every reason to argue that current trends in the world economy determine not only the dynamics of transportation, but also the geography of global and international transport flows. So, the United States is both the world's largest exporter and importer, while China and Germany are the world's largest exporters. Also in the top ten of world trade are Japan, France, Britain, the Netherlands, Italy, Belgium and South Korea, and the most dynamic are China, India, Singapore, Chile and South Korea<sup>26</sup>. As a result, these countries are major players in world trade, and therefore largely control the market for international transport, including sea, air, road and rail<sup>27</sup>. In general, it is established that the dynamics of the structure of world merchandise exports over the past half century is characterized by some selected trends, namely: there is a reduction in the share of developed countries in the structure of world trade in goods; the share of developing countries in world exports is growing; there is a significant change in the regional structure of trade flows, due to which intra-regional trade is becoming widespread<sup>28</sup>.

At the same time, it is noteworthy that some modes of transport are significantly influenced by integration processes that are actively taking place within the world economy and regional integration associations, including the EU, ASEAN, NAFTA, etc. Thus, we can conclude that in modern conditions, the factors of the global and regional environment significantly affect the development potential of the transport system and logistics in the modern world<sup>29</sup>.

In this context attention is deserved by the remark of scientists<sup>30</sup> that within the framework of processes of globalization of integrations exactly on their transport constituent it is possible to think of adequacy of decision of problems and implementations of the tasks that stand before subjects that form the world economic political systems. The fact is that today the world community is increasingly

<sup>25</sup> Zakharova O., Hlobalni chynnyky rozvytku potentsialu svitovoi transportnoi systemy, „*Ekonomichnyi chasopys-XXI*“ 2011, nr. 9-10, s. 14-17.

<sup>26</sup> *UNCTAD Handbook of Statistics 2010*, Wyd. United Nations Conference on Trade and Development 2010, źródło: [https://unctad.org/system/files/official-document/tdstat35\\_en.pdf](https://unctad.org/system/files/official-document/tdstat35_en.pdf) [odczyt: 01.02.2022].

<sup>27</sup> *Review of Maritime Transport 2010*, Wyd. United Nations Conference on Trade and Development 2010, źródło: [http://www.unctad.org/en/docs/rmt2010flyer\\_en.pdf](http://www.unctad.org/en/docs/rmt2010flyer_en.pdf) [odczyt: 01.02.2022].

<sup>28</sup> *UNCTAD Handbook of Statistics 2010*, Wyd. United Nations Conference on Trade and Development 2010, źródło: [https://unctad.org/system/files/official-document/tdstat35\\_en.pdf](https://unctad.org/system/files/official-document/tdstat35_en.pdf) [odczyt: 01.02.2022].

<sup>29</sup> Zakharova O., Hlobalni chynnyky rozvytku potentsialu svitovoi transportnoi systemy, „*Ekonomichnyi chasopys-XXI*“ 2011, nr. 9-10, s. 14-17.

<sup>30</sup> Emirova A., Transformatsiya transportnykh sistem v usloviyakh globalizatsii mirovoy ekonomiki, „*Nauchnyy zhurnal NIU ITMO. Seriya 'Ekonomika i ekologicheskyy menedzhment'*“.

forming a single transport infrastructure and logistics complex, using the spatial location and resource potential of countries and ensuring their fairly integrated service. However, the history of certain modes of transport, differences in economics and politics, transport legislation in different countries has always been and has been on the way to integrate individual transport systems into a single system, and hindered the integration process within the world economy.

The issue of formation and efficient functioning of transport systems was especially acute in the 1970s in Western Europe, where countries were among the first to face transport problems, when integration processes were constrained by centrifugal trends in transport. The reason is that transport, with its universal connections, industries and distribution, has been and remains an important tool for countries and national corporations in their struggle against other countries' monopolies and the natural desire of governments to protect national transport "markets" from intrusion under "foreign flag"<sup>31</sup>.

As a result, already in the 80s of the twentieth century there was a significant increase in the number of multinational corporations, financial and industrial groups, intersectoral and intra-industry structures, associations, research and production associations, trading houses, which aimed to find new reserves in the intensified competition, in particular by structuring logistics systems to optimize infrastructure costs and improve customers' service. Most notably, transport systems have become a key factor in the development of such structures<sup>32</sup>.

Later, especially with the development of information technology, further changes took place in the field of transport management: it became possible to inspect the movement of goods in remote access and real time; there was an opportunity to actively develop and implement international transport programs and projects. The latter were aimed mainly at the formation and effective functioning of transport systems to ensure international transport, especially against the background of different histories of development of certain modes of transport and differences in economic and policy in transport legislation. Therefore, it was at this time that the problem of uniting the separate transport systems of individual countries into a single world transport system with the aim of continuity of cargo transportation, reduction of their delivery time, cost and risks.

Even later, in particular since the 1990s, leading countries have initiated or influenced major political changes in the development of the entire world economy. Almost soon after the collapse of the USSR and the socialist model of development, as well as the full formation of the EU, economic aspects became one of the main unifying factors in the development of the world economic system and its further integration. During this period, international conferences on transport and global / regional (primarily within the EU) transport systems began to take place periodically. For example, thanks to such conferences at different times a common transport policy and ways to modernize the transport system / network (consisting of nine transport corridors) of the European Union, etc. have been for example generated and created. At the same time, the number

<sup>31</sup> Nazarenko V., Nazarenko K., *Transportnoye obespecheniye vneshneekonomicheskoy deyatel'nosti*, Wyd. Tsentr ekonomiki i marketinga 2000, s. 67.

<sup>32</sup> Emirova A., Transformatsiya transportnykh sistem v usloviyakh globalizatsii mirovoy ekonomiki, "Nauchnyy zhurnal NIU ITMO. Seriya 'Ekonomika i ekologicheskyy menedzhment'" 2014, nr. 2.



of different priority transport projects that receive support and funding from various regional, supranational and global structures has increased. These include interstate and transnational (including planned) logistics and transport systems such as “Collomodal” (Germany, the Netherlands and France, intermodal), “Hermes” (United Kingdom, Denmark, Italy, the Netherlands, Switzerland, Belgium, France and Germany, freight), “Docimel” (freight), “UNCTAD” (UN, trade and information), “TEDIM” (UN, logistics, freight), “TACIS”, EU-CIS technical and auxiliary), etc., which are mostly aimed at improving service, environment and reducing logistics costs by removing customs, tax and other barriers, and so on<sup>33</sup>.

Finally, from the XXI century onwards, the formation of the world transport system has entered a stage of large-scale integration process – globalization – which should be considered as one of the main trends in the economy and management of the modern world.

It is determined by the growing interdependence of economies and policies of all or almost all countries, which is based on the deepening internationalization of production and capital. At the same time, it is important that globalization should be understood at least dichotomously. First, from a macroeconomic standpoint as the globalization of the world economy, during which there is a process of convergence / integration of national markets for capital, securities, goods, services and labor, in which the world market is seen not just as a set of these markets, but as a single economic space and a single market with regional and national subsystems. Secondly, from microeconomic positions it is a desire of companies to globalize business and the introduction of global logistics systems at the meso - and macroeconomic level<sup>34</sup>. In this context, it is obvious that significant changes in trade, customs, tax, transport legislation of many countries in the direction of liberalization lead to the creation and development of global interstate transport, telecommunications, distribution and other logistics systems, as well as the emergence of international transport and logistics intermediaries, which permits you to implement global or international logistics strategies taking into account all world markets and optimize total costs. This determines that the possibility of functioning of an organized world market economy is almost entirely determined by the parameters of transport systems of different levels, as well as their ability to integrate into the world transport system, meeting a range of technological, informational and other quality criteria. Moreover, globalization, including the transport system, is characterized by the complication of market relations, strengthening and systematization of competition, which, among other things, are due to: increasing the number of multinational corporations that position themselves in the international market as global actors; strengthening the role of the political factor in decision-making regarding the formation and development of transport corridors and transport systems in general; the growing role of ports in attracting cargo and intensifying competition between the ports of

<sup>33</sup> Sergeyev V., Kizim A., El'yashevich P., *Global'nyye logisticheskiye sistemy: Uchebnoye posobiye*, Wyd. Izdatel'skiy dom „Biznes-pressa“ 2001.

<sup>34</sup> Emirova A., Transformatsiya transportnykh sistem v usloviyakh globalizatsii mirovoy ekonomiki, *“Nauchnyy zhurnal NIU ITMO. Seriya ‘Ekonomika i ekologicheskyy menedzhment’* 2014, nr. 2

individual regions; penetration into the national markets of transport services of large foreign companies and other countries; significant expansion of the list and increasing requirements for the quality of transport and logistics services<sup>35</sup>.

However, even so, sufficient conditions for the formation of the world transport system on a global scale, and hence the world transport space, as it was not and still is not. In addition, since the financial and economic crisis of 2008-2009, the contradictions between the global nature of the economy, the processes of its regionalization and transnationalization and the predominantly national nature of economic regulation have significantly increased.

In such conditions, the regulation of national and the formation of international transport systems are aimed at solving rather contradictory tasks, which do not contribute to the consolidation of the world transport system. In this sense, the analytical agenda includes two issues – political factors in the formation and functioning of the global transport system, logistics and infrastructure, as well as cooperation between public and private / private sectors in the development of transport.

Starting to consider the first problem – that is, the political factors of the formation and functioning of the world transport system – we note that this is an extremely closed sphere of the world economy<sup>36</sup>. The fact is that most often transport projects were thought and carried out based on the political interests of the respective countries' leadership or international organizations, but did not take into account both regional and national economic and commercial interests. As a result, there is a growing need to identify and assess political risks in order to justify the construction of transport infrastructure of international importance, but with taking into account the interests of economic and social institutions.

In this context, it is interesting that the identification and systematic research of political factors and the assessment of political risks in the field of transport and infrastructure began after the Second World War. This was primarily due to the active international political and commercial activities of a number of political actors, which gradually took into account various political factors and assessments of political risks in the formation and operation of transport logistics and infrastructure both in some countries of the world and theoretically in general<sup>37</sup>, and with both positive (including stabilization and modernization) and negative (destabilizing) consequences<sup>38</sup>. Moreover, among the factors of political destabilization in this context were changes in governments, legislatures and military administration, as well as force majeure, such as terrorist acts, natural disasters, etc. In addition, attention was focused on the effects and miscalculations of democratization through the prism of political risks, as, on the

<sup>35</sup> Emirova A., Transformatsiya transportnykh sistem v usloviyakh globalizatsii mirovoy ekonomiki, "Nauchnyy zhurnal NIU ITMO. Seriya 'Ekonomika i ekologicheskoy menedzhment'" 2014, nr. 2.

<sup>36</sup> Efimova E., Pinoniyemi K., Politicheskiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, "Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika" 2014, vol 2, s. 32-56.

<sup>37</sup> Efimova E., Pinoniyemi K., Politicheskiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, "Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika" 2014, vol 2, s. 32-56.

<sup>38</sup> Bremmer J., Managing Risk in an Unstable World, "Harvard Business Review" 2005, s. 52; Reith G., Uncertain Times: The Notion of "Risk" and the Development of Modernity, "Time & Society" 2004, vol 13, nr. 2/3, s. 385.

one hand, democracy reduces political risks through the use of the principles of predictability, stability and transparency of decision-making, but, on the other hand, the cost of maintaining a reputation affects the motivations of political leaders to expropriate multinational assets<sup>39</sup>, especially during elections, when the ability of competing groups to influence political decisions increases<sup>40</sup>. Ultimately, this has led to the separation of various sectoral and functional clusters of these issues and political issues, including information, diplomatic, power, and economic ones, “soft power” clusters, and so on<sup>41</sup>.

All this gave good reason to say that the political factors of economic development should be understood as actions of the state, society or their individual segments both inside and outside the country, which have a positive or negative impact on business operations, including these in transport system<sup>42</sup>. The fact is that the objects of transport infrastructure, especially in the global transport system, are large investment projects. Therefore, to assess the impact of political factors and political risks on their design / operation, it is necessary to apply theoretical and methodological approaches to investment risk management. In this sense, the conclusions of some researchers are noticeable that political risk is market or non-diversified, because it is determined by external factors that affect the market as a whole. At the same time, among the manifestations you can distinguish: nationalization or expropriation of property of foreign investors; adoption of regulations that hinder foreign contractors in every possible way; changes in tax legislation that lead to a fall in income or losses; violation of international treaties and agreements both at the state level and at the level of relations between individual firms and corporations<sup>43</sup>.

Taken together, all this means that the influence of political factors on the creation and functioning of the world's transport infrastructure and logistics has both deep economic pre-conditions and profound economic consequences<sup>44</sup>. As a result, various investment risks in the implementation of global transport infrastructure and logistics projects often scare away potential contributors and investors. In addition, the risks of investing in transport infrastructure exist within a country, but they come to the fore in the implementation of international and foreign projects, because the very fact of foreign participation in the project can be seen as interference or even violation of state sovereignty.

<sup>39</sup> Jensen N., Political Risk, Democratic Institutions and Foreign Direct Investment, *“The Journal of Politics”* 2008, vol 70, nr. 4, s.1042.

<sup>40</sup> Bechtel M., The Political Sources of Systematic Investment Risk: Lessons from a Consensus Democracy, *“The Journal of Politics”* 2009, vol 71, nr. 2, s. 661-677.

<sup>41</sup> Braterskiy M., *Ekonomicheskiye instrumenty vneshney politiki i politicheskkiye riski*, Wyd. Izdatel'skiy dom GU-VShE2010.; Efimova E., Pioniyemi K., Politicheskkiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, *“Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika”* 2014, vol 2, s. 32-56.; Wilson E., Hard Power, Soft Power, Smart Power, *“Annals of the American Academy of Political and Social Science”* 2008, vol 616, s. 110-124.

<sup>42</sup> Efimova E., Pioniyemi K., Politicheskkiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, *“Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika”* 2014, vol 2, s. 32-56.

<sup>43</sup> Vorontsovskiy A., *Upravleniye riskami*, Wyd. OTs-EiM2005, s. 17, 26-27.; Jensen N., Political Risk, Democratic Institutions and Foreign Direct Investment, *“The Journal of Politics”* 2008, vol 70, nr. 4, s. 1040-1052.

<sup>44</sup> Braterskiy M., *Ekonomicheskiye instrumenty vneshney politiki i politicheskkiye riski*, Wyd. Izdatel'skiy dom GU-VShE2010, s. 8.; Efimova E., Pioniyemi K., Politicheskkiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, *“Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika”* 2014, vol 2, s. 32-56.

At the same time, the influence of the political system of one or another state is determined by various factors<sup>45</sup>. They create political uncertainty for the investor and, consequently, political risks, which are the product of political instability and political uncertainty in the context of the development of the transport system. Their emergence is due to such factors as the order of transfer of power, the continuity of public policy, forms and methods of exercising powers by local authorities, etc. Although, in contrast, the construction and modernization of the world transport infrastructure are the most powerful tools of political influence on individual countries and regions by political institutions and political elites.

Thus, it is obvious that the influence of the political factor on the transport system is multifaceted. On the one hand, in particular on the basis of the correlation of national risks and the volume of investment in national transport systems and infrastructure, it was found<sup>46</sup> that low risks of small countries do not guarantee investment, on the basis of which the practical absence of a connection between the size of risks and investments in the land transport infrastructure of individual countries has been proved<sup>47</sup>. As a result, it has been noted that within the framework of the world transport system, decisions on the construction of transport infrastructure and logistics in accordance with current national legislation are made either by business representatives or the authorities. On the other hand, based on the correlation between investment and GDP per capita, as well as the length of the national territory, it is clear that there is no clear interdependence, but there is an evident link between national investment in terrestrial infrastructure and GDP<sup>48</sup>. The fact is that among the leading countries in terms of investment in land transport infrastructure – first of all countries with large economies. This actually explains their activity in the construction and modernization of national transport networks and systems as part of the world's transport infrastructure. On the third hand, in particular on the basis of the correlation between the size of investments in land transport infrastructure and GDP (taking into account purchasing power parity), it is obvious that in the crisis period investment in transport infrastructure and logistics in general is growing, primarily through subsidies and loans and other sources of funding, although in developing countries they are still declining.

At the same time, funding rules and criteria for selecting projects for funding are developed within individual countries or integration groups, although fundamentally new support schemes in crisis and post-crisis periods are not observed. Instead, the list of potential recipients is adjusted due to changing market conjuncture.

In general, on this basis, we can offer several conclusions and arguments, in particular that: the assessment of political factors and related risks in the transport sector, in particular in its infrastructure and logistics sector, especially within the global transport system, is carried out unsystematically;

<sup>45</sup> Efimova E., Pinoniyemi K., Politicheskiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, „*Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika*” 2014, vol 2, s. 32-56.

<sup>46</sup> Weltman J. Don't forget bank stability, experts warn, „*Euromoney*” Thursday, July 18.

<sup>47</sup> Efimova E., Pinoniyemi K., Politicheskiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, „*Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika*” 2014, vol 2, s. 32-56.

<sup>48</sup> Weltman J. Don't forget bank stability, experts warn, „*Euromoney*” Thursday, July 18.

corruption in the construction of transport infrastructure is a factor in the deterioration of the business climate; political factors influencing transport logistics and infrastructure relate to the functioning of the political regime, and not to individual facts of misuse of public funds; in crisis period, the absolute increase in investment in the construction and further development of transport infrastructure is traditional, because in international trade, the transport sector remains consistently profitable for investors, and in the public policy sector, transport contributes to the creation of additional jobs and increase tax revenues to the national budget; political factors can exacerbate structural imbalances in the economy and the negative impact of economic policy on transport infrastructure; even with a relatively high assessment of national political risks, large-scale investments in the transport system, infrastructure and logistics are quite possible, after all, a high assessment of economic risk does not force foreign and / or national structures to invest in transport infrastructure<sup>49</sup>.

In turn, starting to consider the second problem, mentioned above, and more precisely the cooperation between State and non-State / private sectors in the development of the transport system, we confirm that it mostly revolves around the phenomenon of State-private partnership. In recent years, new approaches and forms of interaction between the State and non-State / private sectors of the economy have been actively developed in world practice in order to quickly and efficiently implement new projects and develop a competitive environment. As a result, such forms of cooperation as State-private partnership have become widespread, in particular in transport infrastructure and logistics<sup>50</sup> as an area that is characterized by rapid payback requires significant investment, activates the banking sector, have significant social impact through job creation.

In the theoretical and methodological context, it should be noted that there are several options for defining and understanding State-private partnerships, which are still typically reduced to an institutional agreement between government and private sector on a joint venture in a project, including the development of international transport system<sup>51</sup>. The peculiarity of this case is that private investors receive attractive guarantees from the state, which are, inter alia, to minimize investment and political risks. In the analytical context, in particular in the sphere of transport system, infrastructure and logistics, such added value can be obtained in several cases: when the partnership allows implementing projects with a high level of priority faster; when a private partner can provide the project with special skills and abilities to manage complex complexes; when a private partner can add to the project the technology elaborated by him; when the skills of the private partner can help to attract a wider range of project financing tools; when the project can stimulate private interest in infrastructure development.

<sup>49</sup> Efimova E., Pinoniyemi K., Politicheskiye faktory formirovaniya sovremennoy mezhdunarodnoy transportnoy infrastruktury, „*Vestnik Sankt-Peterburgskogo universiteta. Seriya 5. Ekonomika*“ 2014, vol 2, s. 32-56.

<sup>50</sup> Krylova N., *Mizhnarodni stratehii rozvytku derzhavno-pryvatnogo partnerstva v transportnii baluzi*, źródło:<http://www.sworld.com.ua/index.php/ru/conference/the-content-of-conferences/archives-of-individual-conferences/march-2013> [odczyt: 12.12.2013].

<sup>51</sup> Krylova N., *Mizhnarodni stratehii rozvytku derzhavno-pryvatnogo partnerstva v transportnii baluzi*, źródło:<http://www.sworld.com.ua/index.php/ru/conference/the-content-of-conferences/archives-of-individual-conferences/march-2013> [odczyt: 12.12.2013].

In this sense, it is theorized that within the world transport system public-private partnership is based mainly on six basic principles<sup>52</sup>: participation (i.e. interaction of all stakeholders); adherence to the “good manners” (on the basis of which the rules are implemented without harm and complaints to the public); transparency (openness of the decision-making process); accountability (responsibility of politicians and political actors to society for the things said and done); justice (spreading the same rules to all members of society); efficiency (use of limited human and financial resources without losses, delays, damage to current and future generations). In the practical context of world transport policy, it was found that there had been many manifestations, and therefore classifications of State-private partnership models<sup>53</sup>. In particular, the World Bank identifies four main groups of public-private partnerships, including in the transport sector: 1) management and leasing contracts, where the private partner takes over the management of the project for a certain period of time, and the ownership and investment obligations remain with the state, and in the case of leasing contracts, the state leases the project to a private partner for a fee, and operational risk passes to the private partner; 2) Concessions, when a private partner assumes the management of a state project in the field of transport for a certain period of time, but together with the investment risk. Concessions can be implemented in the form of: reconstruction, management and transfer, when a private partner reconstructs an existing facility, then manages and maintains the facility at its own expense and risk until the end of the contract; reconstructions, leasing, leases and transfers, when a private partner reconstructs an existing facility, then leases or leases it to the state and manages the project until the end of the contract; construction, reconstruction, management and transfer, when a private partner completes an existing facility and then manages and maintains it at its own expense and risk until the end of the agreement; 3) new projects, when a private partner or a joint venture with a state-owned enterprise builds and manages a transport facility during the term of the contract. New projects can be implemented in the form of: construction, leasing and transfer, when a private investor builds an object at his own risk, transfers ownership to the state, and then leases the object and manages it until the end of the contract; construction, management and transfer, when a private investor builds an object at his own risk, manages at his own risk and transfers ownership to the state at the end of the term of the agreement; construction, possession and transfer, when a private investor builds and owns an object at his own risk; commercial project, when a private investor builds a facility on the free market, in which the state does not provide guarantees of return on investment; leases, when the state leases an object from a private investor for a certain period of time, but the private investor builds a new object at his own risk, manages at his own risk during the contract; 4) alienation of property, when a private partner buys a share of the object from the state directly, through a public offer or privatization. Moreover, there are full and partial alienation of property: in the case of full alienation – a private partner

<sup>52</sup> Harris C., Hodges J., Schur M., *Infrastructure Projects: A Review of Canceled Private Projects. Viewpoint: Public Policy for the Private Sector*, Wyd. World Bank 2003.

<sup>53</sup> Krylova N., *Mizhnarodni stratehii rozvytku derzhavno-pryvatnoho partnerstva v transportnii baluzi*, źródło: <http://www.sworld.com.ua/index.php/ru/conference/the-content-of-conferences/archives-of-individual-conferences/march-2013> [odczyt: 12.12.2013].

buys 100 percent of the object from the state, and in the case of a partial one, the private partner buys a share of the state-owned enterprise, and the management of the facility may remain with the state.

But the most interesting thing is that in the context of the development of the world transport system, logistics and infrastructure, the main factors that have influenced and still influence the use of State-private partnership in the implementation of transport projects are: global economic and financial crises; the need to intensify and develop competition in the market; use of more efficient technologies; greater motivation of the private sector to the efficiency and effectiveness of projects than is typical of the State sector<sup>54</sup>. Accordingly, the phenomenon of State-private partnership in the context of transport development has found its active application primarily in the developed countries of the world, which have already better configured transport systems. Although, in contrast, the world and national transport systems are still characterized by: insufficient development of the legal framework in this area; political interference; slow standardization process; insufficient training of public sector staff<sup>55</sup>. This, in turn, is largely a prerequisite and actualization of limiting and shifting the emphasis on the development of transport systems, logistics and infrastructure from the worldwide / global to the regional level, which is often the case in the European Union.

In general, the article argues that the formation and functioning of transport systems, logistics and infrastructure of different countries and regions of the world to a large extent, in particular economically and politically determined, has taken place and is still taking place in relation to world transport system trends. It is substantiated that the world transport system is a set of integrated national and regional transport systems of different countries of the world, represented by interconnected and interacting modes of transport, which ensure the implementation of domestic and international transport to ensure the stable functioning of the world economy. At the same time, it was noticed that the world transport system is characterized by territorial-geographical and profile-species structure, which determines the directions of analysis of the world transport system, logistics and infrastructure in terms of specifics and features of its components. Therefore, it is proved that the world transport system can be classified according to the level of organization, geographical indication, level of development, modes of transport and infrastructural attribute, which are interrelated in the construction of a holistic knowledge of the transport system. Their intercomparison and comparison made it possible to identify relevant trends in the development of the modern world transport system.

On this basis, it was revealed that the development trends of the main modes of transport are related to the basic world economic processes, in particular with world production and world trade. At the same time, it was noted that the development of the world transport system and infrastructure is sensitive to the development of the world economy and trade. As a result, it is motivated that current

<sup>54</sup> Krylova N., *Mizhnarodni stratehii rozvytku derzhavno-pryvatnoho partnerstva v transportnii baluzi*, źródło: <http://www.sworld.com.ua/index.php/ru/conference/the-content-of-conferences/archives-of-individual-conferences/march-2013> [odczyt: 12.12.2013].

<sup>55</sup> Schur M., von Claudy S., The Role of Developing Country Firms in Infrastructure: A New Class of Investors Emerges, *"Gridlines"* 2006, nr. 3, źródło: <http://hdl.handle.net/10986/10742> [odczyt: 01.02.2022].

trends in the world economy determine the dynamics of transportation and the geography of global and international transport flows. It is revealed that the factors of the global and regional environment have a significant impact on the development potential of the world transport system. After all, in the framework of integration and globalization processes, it is their transport component that can be used to consider the adequacy of solving problems and fulfilling the tasks of the actors that shape the world (economic and political) systems. On the other hand, it has been shown that the world transport system is conditioned not only socio-economically but also politically.

At the same time, the political factors of economic development should be understood as the actions of the state, society or its individual segments both within the state and abroad. Thus, it is proved that the influence of the political factor on the creation and functioning of the international transport infrastructure, logistics and system has both economic pre-conditions and economic consequences.

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