FORMATION OF LOGISTICS INFRASTRUCTURE IN THE CONTEXT OF EURO-INTEGRATION INTENTIONS OF UKRAINE

ФОРМУВАННЯ ЛОГІСТИЧНОЇ ІНФРАСТРУКТУРИ В УМОВАХ ПРАГНЕННЯ УКРАЇНИ ДО ЄВРОІНТЕГРАЦІЇ

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Modern logistics infrastructure of national economy is characterized by a very low level of development, substantial price disparities, high level of monopolization. In this connection, priority measures of national policy in the context of Euro-integration intents should be: infrastructure development, formation of equal economic relations between its members; expansion of demand for home (native) goods and services, especially ecologically safe; informational support of the market system participants, creation of national marketing information system.

Scientific-theoretical bases for infrastructure activity were formed by foreign and home scholars, such as: Belen'kiy P., Borodina A., Bronshtejn T., Gladiy M., Ermakov O., Zlupko S., Zinger H., Johimsen R., Krasnopol'skiy B., Krasovs'kiy V., Krylatyh E., Kuznetsova A., Nosova S., Rosenshtein-Rodan R., Yudin Yu., Yangson A. and others. Currently, logistics infrastructure has special significance because it functioning is able to provide that continuous chain, along which all the necessary logistics operations with material chains are floating.

The aim of research has become the grounding of prospects of logistic infrastructure development in the context of enlargement of Ukrainian Euro-integration intents.

Infrastructure logistics units are connecting between branches of production and market infrastructure and they are priority regarding investment attractiveness. Logistics infrastructure plays a basic role in the formation and development of market relations, provides the transition of national economy to the principles of sustainable development. To the main factors of rapid implementation of logistics in global economy can be included: rapid development of information technologies and personalization of computers; globalization of markets; structural changes in business organization; spreading the philosophy of quality management [1, p. 23].

Essentially, the active development of global economy requires a search of progressive trends of production growth. One of them, from our view, is creation of logistics infrastructure both on macro and micro levels.

Pisarenko V. claims that the use of logistics tools in processes of planning and implementation of procurement of material resources foresees taking of managing decisions on the basis if a person, who is taking a decision, has a reliable, adequate and timely information. [2, p. 148]. Accordingly, in general understanding, formation of logistics infrastructure should be based on the principles of rationalism, system, complex, balance of interests of market subjects, orientation on the needs of consumers, ecological safeness of provided and existed objects.

So, according to the foreign data, the use of scientifically grounded methods of logistics allows to reduce the level of expenditures by 20%, commodity stocks - by 30-70%, to cut an hour of returned products by 20-50% [2, p. 145]. It is obvious, that there is a real reserve of increasing of production efficiency, but according to a number of objective and subjective reasons, we have not enough logistics methods that are used. Besides, the segment of transport logistics in global WVP is approximately 7% and is estimated in $ 2,7 trillion. [3, p. 24].

Classical economics traditionally has not paid much attention to allocation of infrastructural units and designing of infrastructure network in general. In early economic studies of demand and purpose the difference between expenditures on placement of infrastructure objects and transport costs was taken as zero, or was considered to be equal for all competitors. Meanwhile, the number, size and geographic location of facilities that are used in logistics directly affect the level and expenditures of consumer service. Design of infrastructure network – the first duty of logistics managers, because this network delivers products and materials to consumers [4].

Typical objects of logistics infrastructure include manufacturing plants, warehouses, loading and unloading terminals and retail shops. Determining of the required number of objects of each type, their geographic location and business functions is an important element of all activities on formation (design) of logistics infrastructure. In special cases keeping of operations on such enterprises can be transferred to third professionals that make the appropriate services. Regardless of who actually performs this work, all infrastructure units should be considered in the management process as integrated elements of logistics system of the firm.

Getting to the forming of logistics infrastructure, it is necessary to determine the number and location of each type of units (objects) required to perform the functions of logistics. In addition, you need to decide, how many and which stocks you should keep on each object and where to place orders for supplying of customers. Infrastructure forms a framework on which a system of logistics and its work is based. Because of this, infrastructure network includes information and transport objects. Certain functions, such as processing of customer orders, management by storages and cultivating of goods, are carried out in the framework of logistics infrastructure.

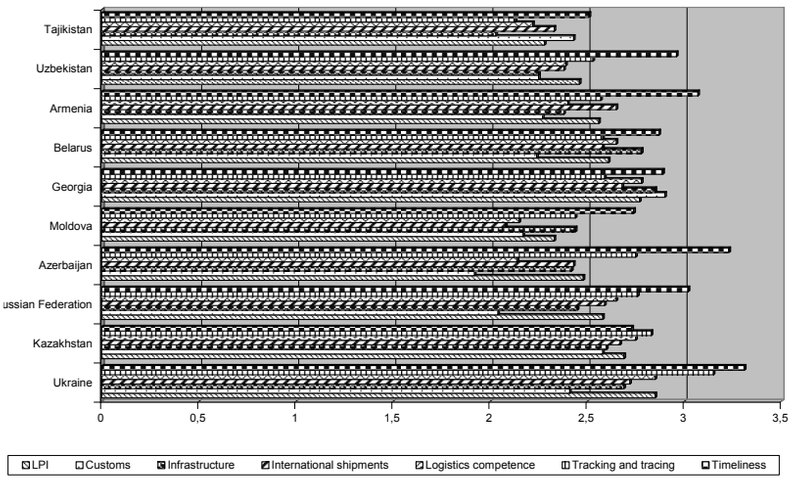
In the article are grounded the basic aspects of formation of national economy logistics infrastructure. Is investigated the modern level of development of Ukrainian logistics infrastructure, compared with foreign countries. The perspectives of development of logistics infrastructure in the context of enlargement of Ukrainian euro-integration intents are determined.

У статті визначені основні аспекти формування логістичної інфраструктури в національній економіці. Досліджено сучасний рівень розвитку української логістичної інфраструктури у порівнянні з іншими країнами. Визначено перспективи розвитку логістичної інфраструктури в умовах посилення намірів до євроінтеграції.

Insufficient level of logistics development, in general, and logistics infrastructure, in particular, confirm analytical materials of the World Bank also. This institution, contributing to the development of trade and transport in Ukraine, explores the issues of transport, customs, logistics and technological support foreign trade, identifying of strong and weak sides of environment in which logistics activity is made.

Every two years the World Bank publishes research - Connecting to Compete: Trade Logistics in the Global Economy - since 2007. On the base of this research there is

Figure 1. **Indicators of logistics efficiency for a sample of countries, 2012 year**



the Logistics Performance Index (LPI), which measures the performance of logistics. LPI (Logistic Performance Index) – is an index of World Bank that decides the easiness of making supplies of goods and the State of Trade logistics at national and international level. The indicator measures the efficiency of work of supply chains in international trade and is evaluated every 2 years.

In 2012, the World Bank published its third "index of efficiency of logistics" (the first and the second were in 2007 and 2010). Organizational and information support for this action gave the International Federation of Express Carriers Associations (FIATA), an organization in promotion of International Transportation and Trade (GFP), Association of Express Carriers (GEA), and also leading scientific centers, studying various aspects of logistics [5].

Index LPI 2012 is based on data of more then 1000 respondents international logistics companies in 143 countries and has included information about 155 countries.

LPI measures logistics supply productivity on internal and international levels. Six components LPI include:

- ❑ the effectiveness of control procedure, including customs control (speed, simplicity and predictability of procedures);
- ❑ the quality of trade and transport infrastructure (ports, railways, roads, information technology);
- ❑ competitiveness of delivery prices;
- ❑ competence and quality of logistics services (transport operators, customs brokers);
- ❑ possibility to track the movement of goods;
- ❑ delivery of goods in time.

LPI is a world standard for measuring the efficiency of logistics, filling gaps in the databases by providing systematic comparisons of countries. Forwarders evaluated countries by key indicators of logistics, such as the efficiency of customs registrations, quality of infrastructure, the ability to track shipments, etc. As an example, let's look upon the indicators of logistics efficiency for a sample of countries, mostly represented by UIC countries (Union of Independent Countries) (Figure 1).

As we see, the dependence between index of LPI and different indicators is different. LPI is calculated on the basis of all these indicators, but the "Customs", "Tracking and tracing" and "Timeliness of deliveries" has less impact than others. Correlation LPI between countries in 2010 and 2012 is about 90%. Recognizing the importance of simplification of trade and logistics, politicians are eager to include to this work structures, which increase the level of logistics.

The World Bank started to rank LPI in 2007 and quickly gained recognition among politicians and professionals — at the national, regional and global level. Evaluation of LPI and rate of the country is included to the international part of the study and is carried out by foreign professionals that are given in the field of logistics. In the internal LPI, on the contrary, interviewed experts assessed the logistics in the countries where they work. Internal study gives detailed information, because analyses the productivity of the country's four main factors that determine the efficiency of logistics work: infrastructure, services, boundary treatments and time and reliability of supply.

In 2012 Ukraine climbed in the LPI rankings on 66-th level though in 2010 it was on 102-nd. Such a strategic step is explained primarily by large-scale infrastructure projects implemented till "Euro-2012". The main six indicators in Ukraine range from 2,41 to 3.31 [5].

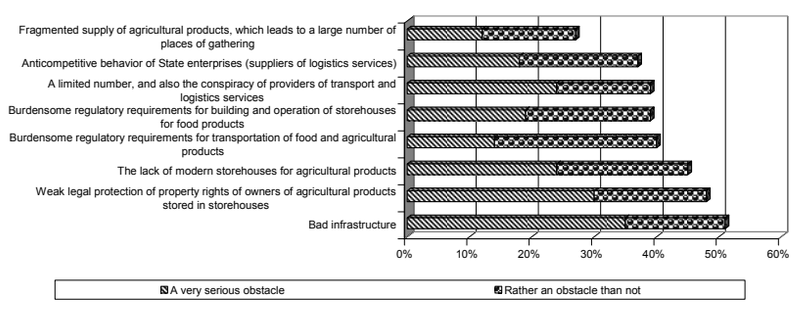
Simplification of trade is crucial for economic development. Countries with a well-developed logistics developing faster, enhance competitiveness and increase their investments. Increase the efficiency of logistics in low-income countries to the Middle could increase trade at an average of 15%. This would benefit consumers and firms who could have got better service and low prices. Researches of LPI in 2012 show the prerequisites for logistics improving. All the top countries support state-private partnerships and dialogue as well as cooperation between politicians, practitioners, administrators and scientists, as well as an integrated approach in the development of transport services, infrastructure and efficient logistics. Because the country can improve its material – technical possibilities only by strengthening of cooperation between state and private sectors [6].

This can be confirmed by investigations conducted by foreign experts IFC "investment climate in Ukraine", which operates in our country for the last 14 years. It contributes to the sustainable economic growth of developing countries, by financing investments, allowing companies and Governments of advisory services, mobilizing private capital in international financial markets. Mostly in their research they paid attention to agrifood sector. Noting that poor quality of services of after gathered transportation and logistics is caused by poor state of vehicles and storage facilities, a low level of protection of the property of farmers' rights on agricultural commodities that are stored on the external elevators, unsatisfactory state of warehouse certificates system. According to the study of IFC, the existing normative base that coordinates services of after gathered transportation and logistics of agricultural products is another important obstacle for the development of brunch. It confirmed almost 80% of surveyed enterprises, about 45% of agricultural enterprises have pointed to a lack of storage space as another obstacle for economic activity (fig. 2).

Preparation and realization of deep and comprehensive Agreement about Association with EU provides for 10-15 years the transitional period for implementation and realization of bilateral agreements between Ukraine and the countries of the European Union about cooperation, including in the field of logistics and transport, that have to prepare, taking into account the conditions of constant transformation of European transport policy influenced by the challenges of the modern world and the intensive development of world trade. In particular, the priority directions of cooperation between Ukraine and EU in the field of transport include:

- ❑ development of transport infrastructure and its integration into the European transport system;
- ❑ Increasing of safety level for transport and adaptation of relevant national legislation with TWINNING project;

Figure 2. **Major obstacles for effective marketing and logistics in agriculture [7, p. 77]**



❑ modernization and upgrading of main funds and rolling stock of transport;
❑ creation of Common aviation area between Ukraine and EU.

Groups of goods of EU are directed more and more outside of European countries toward those countries that are developing rapidly. Active development of economies of China, India, South Korea, Russia opens new opportunities for EU countries in goods rotations with these countries. In 2010 in the structure of goods export from EU countries total part of China, Russia, South Korea, Japan, India was 22,7%, in the structure of goods import to EU these countries had 24%. The nature of external trade defines the volume growth of deliveries, including the territory of Ukraine [8].

Besides trying to stir the economy of Europe, the European Commission announced plans about significant increasing of investments in logistics and transport infrastructure. During the twenty years will be implemented 29 infrastructure projects, the task of which is to link the transport systems of EU countries. The total investment is estimated at 250 billion dollars. It is expected that as a result will be created about 400 thousand new working places, which will lead to accelerating of growth of European economy.

The main purpose of plans in Brussel is to continue to integrate the railways and highways and internal waterways in multimodal transport corridors, which should intensify trade and tourism within the Union. Since EU enlargement in May 2004 will increase the total territory of EU in 17%, significant investments will be needed to connect disparate transport systems. For example, in Baltic countries the wider Russian road is put and the railway connection between Vilnius and Warsaw passes through the Belarusian city Grodno.

At formation of infrastructure logistics network, should be considered the various options for selecting the geographical location of the objects. The fact that the geographic markets largely differ from each other, is easy to illustrate. For 50 largest, as for the population, markets that are included to "Metropolis" of the United States are brought more than 55% of sales of all products [4].

Modern logistics services market in Ukraine is characterized by several tendencies:

❑ minimization of costs associated with transportation, storage, repacking, customs documentation, which updates the management and marketing that, in turn, increases the demand for logistics services and warehouses properties;
❑ growing of demand for qualitative logistics services;
❑ reducing producers' expenditures at the expense of logistics and terms between stages of production and consumption.

Negative factors that can influence the development of market of logistics services is dissatisfaction with the demand for the warehouses and not enough developed transport infrastructure and also the lack of qualified personnel in logistics [9].

CONCLUSIONS

Under the conditions of strengthening the European integration processes in the national economy a particular importance for the effective operation of logistics infrastructure has attitude to a system approach. It will include a study of the strategy of its development and detailing in strategic and current plans on the macro and micro levels in accordance with Euro integration intentions of Ukraine. The main result of work of logistic infrastructure should be the minimization of expenses for maintenance of material flows and their ecological safeness.

REFERENCES

1. Bakaev, O.O. Kutah, O.P. and Ponomarenko L.A. (2003), Teoretychni zasady logistyky [Theoretical bases of logistics], Universytet ekonomiky I tehnologiy transportu, Kyiv, Ukraine.

2. Pysarenko, V.V. (2012), «Features of logistics systems in agriculture», Visnyk HNAU, vol. 7, pp. 146-150.

3. Rynok transportno-logisticheskih uslug v 2010-2011gg. i prognoz do 2014 g.Objom I struktura rynka logisticheskogo autsorsinga, gruzoperevozki, transportno-ekspeditorskie I skladskie uslugi v postkrizisny period. Analiticheskiy obzor [The market of transportation and logistics services in 2010-2011 and forecast to 2014.The size and structure of the market of logistics outsourcing, trucking, freight forwarding and warehousing services in the post-crisis period. Analytical review], (2011), RosBiznesKonsalting, Moscow, Russia.

4. Baueroks, D. Dj. and Kloss, D. Dj. (2013), «Logistics: integrative chain of deliveries», [Online], available at: http://www.olbuss.ru/shop/?topic=27&book=165.

5. Connecting to Compete 2012 Trade Logistics in the Global Economy The Logistics Performance Index and Its Indicators. – The International Bank for Reconstruction and Development/The World Bank. – 2012. – 68p.

6. «The World Bank», [Online], available at: http://siteresources.worldbank.org/TRADE/Resources/239070-1336654966193/ LPI_2012_final.pdf.

7. Investytsijny klimat v Ukraini: jakym jogo bachyt' biznes. Zhovten' 2011. Konsultatyvna programa z pokrashennya investytsiynogo klimatu v regioni Evropy ta tsentralnoji Azii Proect IFC «Investytsijnyj klimat v Ukraini» [The investment climate in Ukraine, which it sees business. October 2011. Advisory program on improvement of investment climate in Europe and Central Asia Project IFC «investment climate in Ukraine»].

8. Sobkevich, O. and Yemelyanova, O., Shodo perspektyvnyh napryamkiv spivrobitnytstva v Ukraini z krainamy ES u realizatsii potentsialu transportnoyi systemy Ukrainy. Analitychna zapyska. [As for the perspective directions of cooperation of Ukraine with EU countries in realizing the potential of Ukraine's transport system. Policy briefing], [Online], available at: www.nbuv.gov.ua›portal/natural/Vnulp200934.pdf.

9. Savina, N.B. «Infrastructure of the logistics processes of economic activity», [Online], available at: www.nbuv.gov.ua›portal/natural/Vnulp200934.pdf.