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## **The challenges and prospects of exchange market logistics in the Republic of Belarus**

### **Problemy i perspektywy rozwoju logistyki giełdowej w Republice Białorusi**

**Abstract.** The article is devoted to the development of exchange logistics in the Republic of Belarus. The main challenges and prospects of exchange logistics of PJSC Belarusian Universal Commodity Exchange (hereinafter referred to as BUCE) are analysed from the legal and economic points of view. The regulatory framework directing the mechanism of exchange logistics, the main indicators of the logistics system of the Republic of Belarus and the indicators of the structure of exchange logistics of BUCE are used in the analysis. The results obtained make it possible to assess the importance of exchange logistics and to identify the main factors impeding its further development and efficiency.

**Key words:** exchange logistics, logistics system, exchange trade, commodity exchange

**Synopsis.** Artykuł dotyczy rozwoju wymiany logistycznej prowadzonej za pośrednictwem giełdy towarowej w Republice Białorusi. Autorzy rozpatrują, z prawnego i ekonomicznego punktu widzenia, główne problemy i perspektywy rozwoju wymiany prowadzonej w ramach OJSC Białoruskiej uniwersalnej giełdy towarowej (ang. skrót BUCE). W toku analizy wzięto pod uwagę regulacje prawne dla rozpatrywanej działalności, główne wskaźniki charakteryzujące system logistyczny Białorusi oraz wskaźniki dotyczące wymiany na giełdzie BUCE. Wyniki analizy pozwoliły ocenić rolę wymiany logistycznej na giełdzie i zidentyfikować główne czynniki jej rozwoju oraz podwyższenia efektywności.

**Słowa kluczowe:** logistyka giełdowa, system logistyczny, handel giełdowy, giełda towarowa

## **Introduction**

The economic efficiency of industries in market conditions is largely determined by the degree of commodity competitiveness. Reduction of production costs and sales becomes particularly relevant for producers. Stock exchange trading, is currently, perceived as one

of the most important economic means in improving the competitiveness of Belarusian goods through a variety of stock exchange mechanisms. Important in this regard is the mechanism of exchange logistics, which is aimed at improving the efficiency of stock exchange activities, reducing the logistics costs of sellers and buyers in exchange trading.

Currently, exchange logistics have certain advantages over the traditional logistics system and allows to achieve a high concentration of not only participants of the exchange market, but also of logistics entities. In the context of integration processes of logistics in the stock exchange, the efficiency of exchange trade as a whole increased, which is confirmed by the growth of economic indicators of the commodity exchange performance. So, since the introduction of the mechanism of exchange logistics, there has been a significant increase in the number of exchange transactions of 20–30% annually.

Exchange trading is based on the principles of anonymity of counterparties. In bids to realization of stock exchange goods the following specifications are indicated: the name of stock exchange goods, specification of the goods, term of payment, term of delivery. As a rule, sellers, when fixing price on goods, are forced to lay down conditions of delivery from their warehouse (FCA). In this case the expenses of logistical services are incurred only by the buyer. It means that it is impossible to fix the cost of delivery at the time of performing the transaction. Only after the transaction has been done, the buyer can calculate accurately expenditures to logistics, having analysed possible ways and the method of delivery, and thus to choose the optimum option. Besides, it is necessary to take into consideration that logistics expenditures on delivery of goods account for 15–20% of the cost; therefore the reduction of logistics expenses is the most important challenge for companies [Ignatovich 2014].

Thus, the logistics component is an integral element of the formation of competitive products. The relevance of this study is explained by the necessity to study the problematic issues in the current system of exchange logistics and to identify promising directions for its improvement.

## **The purpose and methodology of the study**

The purpose of the study is to analyse the state of the stock logistics processes and to identify promising areas for its further development. This study is fundamentally important from the point of view of improving all exchange processes, the effectiveness of which is closely related to the increase in commodity turnover and the strengthening of the economic stability of the country as a whole. Conclusions and recommendations were obtained on the basis of general scientific methods: analysis and synthesis, statistical research methods.

## **Research results**

Stock exchange trading is currently an effective method of promoting products from the manufacturer to the consumer. World practice shows that commodity exchanges sell more than 20% of raw materials including 70 types of various commodities. More than 70% of them are agricultural and forest products [Kiryenko 2016].

In PJSC the Belarusian Universal Commodity Exchange there are 4 product sections: metal products, forest products, agricultural products and a section of industrial and consumer goods, the total volume of transactions for which is the exchange turnover. The efficiency of exchange activity is investigated on the basis of economic indicators of exchange trade and GDP as well as the wholesale turnover in the country (Table 1).

Table 1. Efficiency of PJSC the Belarusian Universal Commodity Exchange in 2013–2018  
Tabela 1. Efektywność OJSC Białoruskiej uniwersalnej giełdy towarowej w latach 2013–2018

Indices	2013	2014	2015	2016	2017	2018
Exchange turnover [billion EUR]	0.93	0.76	0.86	1.09	1.60	1.77
GDP [billion EUR]	57.29	56.24	53.51	43.32	51.63	50.12
Wholesale turnover [billion euro]	42.30	39.75	38.34	30.12	37.74	38.05
Share of stock exchange trade in GDP [%]	2.30	2.05	2.20	2.60	3.09	3.52
Share of stock exchange trade in the wholesale turnover [%]	3.10	2.90	3.20	3.80	4.20	4.64

Note: data from 2015 is presented in denominated rubles.

Source: author's development based on data of the National Statistical Committee of the Republic of Belarus, [electronic resource] [http://www.belstat.gov.by/ofitsialnaya-statistika/ssrd-mvf\\_2/natsionalnaya-stranitsa-svodnyh-dannyh/vvp-rasschitanni-metodom-ispolzovaniya-dohodov/2018-god/](http://www.belstat.gov.by/ofitsialnaya-statistika/ssrd-mvf_2/natsionalnaya-stranitsa-svodnyh-dannyh/vvp-rasschitanni-metodom-ispolzovaniya-dohodov/2018-god/) [access: 05.03.2019].

According to the table it can be seen that for the period under review, the share of stock exchange trade in GDP and wholesale turnover of the country is 2–4%, while there is a positive trend of annual increase in exchange turnover by 0.4–0.6%.

The formation of the logistics system on the commodity exchange began in 2011, when the board of the exchange approved two provisions that were crucial in this area: the first is On the registration procedure and the conditions of transport companies activities – residents of the Republic of Belarus as stock exchange carriers in PJSC Belarusian Universal Commodity Exchange and second, On the registration procedure and conditions of activity as exchange carriers of transport companies for non-residents of the Republic of Belarus. This was a logical continuation of the formation of the institute of exchange carriers, legally enshrined in the Decree of the Council of Ministers of the Republic of Belarus of 6 August 2009 No 1039. In order to fully utilize the opportunities that the exchange has opened up for the carriers, the Exchange adopted the procedure for selling timber products on export on the terms of delivery at the exchange trading of the PJSC Belarusian Universal Commodity Exchange FAS, FOB, CFR, CIF, CPT, CIP, DES, DEQ, DDU, DDP in accordance with Incoterms-2000 and FAS, FOB, CFR, CIF, CPT, CIP, DDP, DAT, DAP in accordance with Incoterms-2010 using the services of exchange carriers-residents of the Republic of Belarus, stock warehouses and accredited stock market experts [Kiriyeenko 2013].

Exchange logistics is a new mechanism of exchange trade, the legal status of which is regulated by legislative and regulatory acts. The main provisions of the state regulation of exchange logistics activities are fixed in Table 2.

Table 2. The main provisions of state regulation of exchange logistics activities in the Republic of Belarus

Tabela 2. Główne przepisy państwowej regulacji giełdowej logistycznej działalności w Republice Białorusi

Levels of regulation	Legislative acts
Basic level	Civil Code of the Republic of Belarus. Law of the Republic of Belarus of 5 January 2009 No 10-Z on commodity exchanges. Law of the Republic of Belarus of 28 December 2009 No 113-Z on electronic document circulation and electronic digital signature.
Level of subregulation	Decree of the Council of Ministers of the Republic of Belarus of 6 August 2009 No 1039 on some measures to implement the law of the Republic of Belarus on commodity exchanges.
Local level	Regulations on the procedure for registration in PJSC Belarusian Universal Commodity Exchange as exchange warehouses of organizations engaged in warehouse activities in the Republic of Belarus. Regulations on the procedure for registration in PJSC Belarusian Universal Commodity Exchange as exchange warehouses of organizations engaged in warehouse activities outside the Republic of Belarus. Regulations on the procedure for registration and conditions of activity of transport organizations-residents of the Republic of Belarus as exchange carriers in PJSC Belarusian Universal Commodity Exchange. Regulations on the procedure for registration and conditions of activity of transport organizations-non-residents of the Republic of Belarus as exchange carriers in OJSC Belarusian Universal Commodity Exchange. The procedure for the sale of timber products on export at the exchange trading of PJSC Belarusian Universal Commodity Exchange on terms of delivery FAS, FOB, CFR, CIF, CPT, CIP, DES, DEQ, DDU, DDP in accordance with Incoterms – 2000 and FAS, FOB, CFR, CIF, CPT, CIP, DDP, DAT, DAP in accordance with Incoterms – 2010 with the use of services of stock exchange carriers-residents of the Republic of Belarus, stock warehouses and accredited stock market experts. The procedure for the sale of timber products on export at the exchange trading of PJSC Belarusian Universal Commodity Exchange with the condition of compulsory services of exchange carriers, stock warehouses and exchange experts. Regulations on the procedure for the examination of exchange goods. Regulations on the procedure for registration and conditions of activity in the PJSC Belarusian Universal Commodity Exchange as exchange experts of expert organizations.

Source: author's development on the basis of logistics data, [electronic resource] [http://www.butb.by/stock\\_exchange\\_logistics/regulations](http://www.butb.by/stock_exchange_logistics/regulations) [access: 05.03.2019].

Thus, in 2015, with the entry into force of the new version of the Law of the Republic of Belarus on commodity exchanges, the legal framework was approved and the necessary infrastructure of exchange logistics was formed. However, by this time the market of logistics services in the Republic of Belarus has already been sufficiently developed and the exchange was faced with the task of creating the conditions for the joint development of the exchange commodity market and the market of logistics services.

Currently, exchange logistics is a multifunctional and extensive logistics system that includes three links: stock carriers, stock warehouses and stock exchange experts. The status of «exchange» have carriers, warehouses and experts with whom an agreement on

registration on the exchange has been signed, i.e. these are not created companies, but already operating on the market of logistics services, therefore stock exchange logistics is a part of the market of logistics services of the Republic of Belarus

The advantages of using exchange logistics are obvious: this mechanism allows the buyer to purchase goods at a fixed price, which includes not only the cost of the goods, but also the price of delivery, i.e. the buyer does not incur additional costs and immediately knows the final cost of the goods, which is fixed for the entire duration of the exchange contract entered into at the auction. Thus, exchange logistics serves as a kind of “guaranty” of timely and reliable delivery of goods and allows buyers to reduce costs for the goods.

Structure of stock exchange logistics [Gurikova 2018]:

1. Exchange carriers. They deliver goods either from the seller’s warehouse on delivery terms to the buyer (FCA delivery), or to the stock warehouse (delivery on conditions DAT, DAP, FAS, FOB), in turn, it requests the cost of services for the supply of goods and adds it to the cost of goods. Only after this the product is put up on auction.
2. Exchange warehouses. The main task of the stock warehouse is to bring the goods as close as possible to the buyer before making a trade transaction, to give him a choice of the most convenient delivery method and the opportunity to take into account the price of delivery.
3. Exchange warehouses is a place of goods transfer to the buyer on conditions of DAT, DAP, FAS, FOB. In addition, stock warehouses can provide a number of other logistics services: customs clearance of goods, packaging, labelling, paperwork, etc.
4. Logistics centres, trans-shipment terminals or warehouse complexes can be registered as a stock warehouse. There are no special requirements for their registration as “stock exchange” warehouses, since they do not provide storage service of goods.
5. Stock exchange experts. Participants of the stock exchange trade, in order to ensure quality acceptance operations and resolve possible conflict situations, can use the services of exchange experts. Expertise is carried out, as a rule, in stock depots. However, the participants may order the services of experts under other conditions at their own expense

Both Belarusian and foreign companies can be registered as exchange carriers, warehouses, experts (Table 3).

Table 3. Structure of stock exchange logistics (as of 02.27.2019)

Tabela 3. Struktura giełdowej logistyki (wg stanu na 27.02.2019 r.)

Specification	Belarusian	Foreign	Total
Stock careers	8	6 (including from Lithuania – 2, Latvia – 1, Poland – 1 and Ukraine – 2)	14
Stock warehouses	9	17 (including from Belgium, Bulgaria, Germany, Kazakhstan, Lithuania, Latvia, Russia, Poland, Ukraine, Estonia)	26
Stock experts	5	1 (Poland)	6

Source: website of the PJSC Belarusian Universal Commodity Exchange, [electronic resource] <http://www.butb.by/birgevaya-logistics/-logistics> [access: 05.03.2019].

It should be noted that the structure of exchange logistics practically has not changed since 2017, which testifies about the unused potential of the exchange logistics system. Analysis of the data of the logistics services market and exchange logistics showed that the share of transport and storage companies accredited at the stock exchange is only 0.1% of the total number of relevant companies in the country, while the volume of logistics services increases annually (Table 4).

Table 4. Key performance indicators of the logistics system of the Republic of Belarus in 2013–2017  
Tabela 4. Główne wskaźniki działalności logistycznego systemu Republiki Białorusi w latach 2013–2017

Direction	2013	2014	2015	2016	2017
The volume of logistics services [billion EUR]	472	652	675	1 060	1 276
Export of transport services [million EUR]	3 792	3726	2 928	2 932	3 455
Import of transport services [million EUR]	1 398	1 522	1 245	1 303	1 543
Number of transport companies [units] Including warehousing and transportation support activities	–	–	–	11 685 1 802	11 813 1 799
Number of transport means [units]	426 579	436 588	434 430	424 731	423 292
Including freight transport	285 388	285 565	282 437	275 976	268 905
Goods transported [th/t]	471 210	467 486	447 212	417 643	439 471

Source: statistical compendium of the National Statistical Committee of the Republic of Belarus Transport and communications in the Republic of Belarus, [electronic resource]

[http://www.belstat.gov.by/ofitsialnaya-statistika/publications/izdania/public\\_compilation/index\\_9289](http://www.belstat.gov.by/ofitsialnaya-statistika/publications/izdania/public_compilation/index_9289) [access: 05.03.2019].

The current situation is connected, first of all, with the conditions imposed on transport and warehouse companies for their registration at the commodity exchange.

Thus, for transport organizations, the mandatory requirements are: membership in the Association of International Road Carriers BAMAP; membership in the Association of International Freight Forwarders and Logistics BAME (for applicants engaged in freight forwarding activities); ownership of at least 50 units of rolling stock suitable for operation on international routes; availability of its own production base – parking lots and car maintenance; stable financial situation, experience in carrying out activities in the field of international transportation for at least 5 years, etc. For organizations engaged in warehousing activities: work experience in the field of warehousing activities for at least 3 years; stable financial position, location in close proximity to major highways; availability road and rail infrastructure, etc. [Kovalev and Koroleva 2017].

These requirements for registration are economically justified, since at the commodity exchange site much attention is paid to the efficiency and reliability of exchange services provision. But at the same time, high requirements impede further development of exchange logistics and the full harnessing of its potential.

There are two most suitable options for the development of exchange logistics: to provide an opportunity for buyers to select the basis of delivery conditions or to launch a new electronic platform based on the BUCE to provide freight forwarding services. In the first case, the basic principles of exchange logistics will not change, however, for foreign sellers, the delivery bases on FOB and DAP terms will significantly increase the attractiveness of exchange trades and exchange logistics activities. In addition, there will be more logistics entities interested in registering on the commodity exchange and receiving the status of “exchange”.

In the second case, the launch of its own electronic trading platform involves significant economic and time costs, but it will be a strong impetus for improving the efficiency of the exchange logistics mechanism. In addition, BUCE will receive a new status – the status of “transport exchange”.

Based on the results obtained, the authors proposed recommendations for the perfection of exchange logistics activities:

- to improve the provision of exchange logistics services;
- to expand the list of exchange logistics services;
- to simplify the registration procedure for actors of the logistics system at the commodity exchange;
- to introduce new tools and technologies for the development of exchange logistics.

## **Summary and conclusions**

Analysis of the development of commodity exchange in the Republic of Belarus shows that, it is underperforming. In order to increase the efficiency of exchange trade, the mechanism of exchange logistics should play a primary role. This instrument will provide customers and suppliers with a competitive advantage over traditional logistics systems for goods delivery, storage and expertise and will be a special factor of attractiveness to the exchange market.

An important point in creating the efficient exchange logistics is to identify opportunities for expanding the exchange logistics chain by adding new structural elements or changing the logistics system through its transformation. The development of stock exchange logistics is the process of setting up interactions, common interests and resources among the commodity exchange, the actors of exchange trade and the logistics chain.

For the development of stock exchange logistics it is necessary to consider all possible options. The best way to improve stock exchange logistics at present is to set up a new electronic platform for the provision of freight forwarding services, which will expand the existing system of exchange logistics, attract new entities of the logistics system to the commodity exchange and increase the efficiency of stock exchange trading.

The effectiveness of implementation of stock exchange logistics in the context of its structural elements allows us to conclude that with the introduction of new electronic platform to the stock exchange activity in the provision of freight forwarding services, the stock exchange turnover will increase by at least 5%. In case of maintaining the existing mechanism of the exchange logistics, the increase in exchange turnover will be insignificant 1–2%.

Thus, it seems necessary to concentrate more on the development and implementation of a new electronic platform for the provision of freight forwarding services, which will increase not only the scope of exchange logistics, but also the scope of exchange trade in general.

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