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THE PRESENT-DAY SITUATION OF THE TRANSPORT AND LOGISTICS SECTORS IN POLAND AND BELARUS AND THE CHALLENGES TO THEIR DEVELOPMENT

AKTUALNY STAN, PROBLEMY I WYZWANIA DLA ROZWOJU BRANŻY TRANSPORTU I LOGISTYKI W POLSCE I W BIAŁORUSI

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Abstract: Recently, the integration of countries into world trade flows has largely been due to the development of their logistics systems. For Poland and Belarus, the development of international logistics chains is very relevant due to their advantageous geographical location and the presence of modern transport corridors in the very center of Europe. Poland's share in international transport is high and accounts for almost a third in general EU transport. More than 100 million tons of European cargo passes through Belarus annually, about 90% of which are between the Russian Federation and the European Union.The purpose of the study is to identify factors influencing logistics activity efficiency in Poland and Belarus on the basis of a comparative analysis. To achieve this goal, the article looks at the development of transport and logistics activities in Poland and the Republic of Belarus, as well as the logistics efficiency of Poland and Belarus, analyzed on the basis of the LPI as developed by the World Bank. The analysis carried out within the framework of the study allowed the authors to determine the factors of effective the development of logistics in Poland, to identify the problems of the development of the logistics industry in the Republic of Belarus, and to assess the prospects for the development of logistics activities in these countries. The analysis is based on the statistical data of the National Statistical Committee of the Republic of Belarus and Central Statistical Office of Poland.
Key words: logistics, TFL sector, logistics services market, Poland, Belarus

Streszczenie: Integracja krajów w ramach światowych przepływów handlowych w dużej mierze wynika z rozwoju ich systemów logistycznych. Dla Polski i Białorusi rozwój międzynarodowych łańcuchów logistycznych jest bardzo istotny ze względu na korzystne położenie geograficzne oraz obecność nowoczesnych korytarzy transportowych w samym centrum Europy. Udział Polski w przewozach międzynarodowych jest wysoki i stanowi prawie jedną trzecią wszystkich przewozów w UE. Przez Białoruś przechodzi rocznie ponad 100 mln ton ładunków europejskich, z czego ok. 90% przypada na transport między Federacją Rosyjską a Unią Europejską. Celem opracowania jest identyfikacja czynników wpływających na efektywność działalności logistycznej w Polsce i w Białorusi na podstawie analizy porównawczej. Dla osiągnięcia tego celu w artykule omówiono rozwój działalności transportowej i logistycznej w Polsce i w Białorusi oraz efektywność logistyczną państw sąsiednich, analizowaną w oparciu o wskaźnik LPI opracowany przez Bank Światowy. Analiza przeprowadzona w ramach badania pozwoliła autorom na określenie czynników efektywnego rozwoju logistyki w Polsce, zidentyfikowanie problemów rozwoju branży logistycznej w Republice Białorusi oraz ocenę perspektyw rozwoju działalności logistycznej w obu krajach. Analizę oparto na danych statystycznych Narodowego Komitetu Statystycznego Republiki Białorusi i Głównego Urzędu Statystycznego.
Słowa kluczowe: logistyka, branża TSL, rynek usług logistycznych, Polska, Białoruś

Introduction

Logistics plays an increasingly important role in the functioning of the economies of the neighbouring countries of Poland and Belarus. Poland and Belarus have an attractive location in Europe owing to the layout of their transport corridors, which have created favourable conditions for the development of logistics handling international supply chains. There are four trans-European corridors running

through Poland, and they are constantly being extended and modernised. In 2018, Poland's share in international transport amounted to almost one third of total transport in EU countries. Belarus is the most important transport artery of the Eurasian space, fully ensuring the promptness and efficiency of transit traffic. More than 100 million tons of European cargoes cross the country annually, approximately 90% of which are between the Russian Federation and the European Union. The need to develop the logistics system of the Republic of Belarus and Poland is due to the countries' integration with global trade flows.

The subject of consideration undertaken by the authors of the article is the TFL sector in Poland and Belarus, which combines three sectors: transport, forwarding and logistics. The purpose of the study is to identify factors influencing the logistics activity efficiency in Poland and Belarus on the basis of a comparative analysis. To achieve this goal within the framework of this scientific study the authors set and solve the following tasks: to characterize the current state of TFL (the logisitcs sectors) in the neighboring countries of Poland and Belarus; to determine the distinctive features of the functioning of logistics in these countries; and to identify the problems and challenges in the development of transport and logistics companies on both sides of the border.

Literature review

Logistics is a fast-growing area of business practice inextricably linked to the development of the logistics service market. The TFL market is co-created by logistics, transport, forwarding, warehousing, courier, and postal companies which operate within the scope of handling cargo in contract logistics. The most important link in this market is logistics operators, which have their own supranational logistics networks developed based on storage and transhipment terminals and their shuttle transport connections (Fechner, Szyszka, 2013, p. 27). The share of logistics processes in the added value is increasing, which leads companies to consider the potential of outsourcing. Outsourcing is one of the management concepts consisting in the transfer of part of the company's activities under contract to an external service provider which assumes responsibility for specific functions or processes (Jeszka, 2009, p. 85). The perception of outsourcing in business operations has evolved over the decades (Nowicka, 2016. Foltys, 2018). The outsourcing model has worked well in outsourcing and involves a transferring of the functions traditionally related to logistics to an external service provider (Szukalski, Wodnicka, 2016, p. 162). In the specialist literature there are 5 groups of logistics companies depending on the level of performed logistics operations: from 1PL (First Party Logistics) to 5PL (Fifth Party Logistics) (Kurochkin, 2014, p. 28). Levels 1PL and 2PL include services at an executive level. At level 3PL, there is a complexity of logistics services provided by an external service provider – a specialized logistics operator. 3PL operators enter the area of contract logistics and logistics outsourcing. At an even more advanced level of 4PL, we can see the Logistics Process Integrator managing entire supply chains, so-called LLP (Lead Logistics Provider). Level 5PL develops with the Internet trade, includes operators combining 3PL and 4PL and managing the supply chain using modern information technologies.

The global logistics practice is developing towards comprehensive logistics services. In Western Europe, 65-70% of logistics operations are outsourced (Kurochkin, 2016, p. 34). In China, this level has reached almost 50%. At present, the logistics service market is dominated by the largest developed and developing countries. The regions with the highest revenues from 3PL are Asian and Pacific countries (375 billion USD), North America (252 billion USD) and Europe (210 billion USD) (Loos, 2019).

Logistics and logistics systems are the most important aspects of economic development not only for individual countries but also for the world economy as a whole. In economic literature the influence of logistic activities at the micro- and macro- levels is distinguished. At the micro level logistics allows linking the economic interests of the manufacturer of a product and its consumer; increases the turnover of working capital by reducing the time of production cycles; reduces the cost of storing goods; increases the utilization of warehouse space; reduces transport costs; increases the tempo of production; reduces the number of errors and disruptions in order fulfillment (Piskovets, Urazova, 2016).

The macroeconomic impact of logistics is expressed in the fact that logistics today acts as a kind of locomotive that sets in motion the mechanism for providing services, transporting goods and organizing its movement, thereby ensuring visible progress in achieving the goal of strengthening the development of world and economic independence (Gerasimovich, 2020). The development of logistics activities raises a country's economy as a whole to a higher technological level, accelerating integration into the

world economic and informational space and creating the attractive image of a state with a stable economy (Arkadiev, 2015).

Materials and methods

To carry out this research, a set of methods was used that made it possible to achieve the research goal. The research method applied in the study was an overview of domestic and foreign specialist literature and Internet resources. The article uses compact and periodical publications, government documents, statistical materials, and internet sources. The practical part of the research is based on the data of the National Statistical Committee of the Republic of Belarus (Belstat) and the Central Statistical Office of Poland (GUS) as well as PARP data, studies of the Institute of Logistics and Warehousing, the Fraunhofer Institute and the PITD report. The analysis of the LPI was based on the World Bank methodology and data. The leading TFL companies in Poland were identified on the basis of the 2019 ranking of TFL companies.

The study used the CONCEPT of the development of the logistics system of the Republic of Belarus for the period up to 2030 and Sustainable Transport Development Strategy until 2030 in Poland as the main legislative acts. For the best visual presentation of the results of the study, the authors used tabular and graphical methods.

Transport and logistics market in Poland and Belarus: status and position in the world

Changes in the TFL sector are well characterised by the volume of cargo transportation. According to the Central Statistical Office (GUS) data, in 2018, all modes of transport carried 2,191.9 million tons of cargo, i.e. 6.8% more than a year before, and the transport work was carried out at the level of 466.9 billion tons-kilometres, i.e. 7.4% more than the previous year. In Poland since the early 1990s, the transport of cargo has been progressively dominated by road transport, both with regard to tons and transport activity (performance). The share of road transport in total transport in tkm in 2018 was 80.9%, while the share of rail transport was 12.7%. Intermodal transport is developing in Poland. The weight of cargo transported in containers was 12.1% higher than in 2017. The share of the weight of intermodal transport cargo in the total weight of freight transported by rail in 2018 was 6.5%, and in 2017 – 6.1% (Transport – overall performance in 2018, Central Statistical Office). The number of active terminals in Poland in 2019 was 38 (compared with 35 in 2018 and 30 in 2017) (Intermodal transport in years 2017-2019, Central Statistical Office, p. 21). The Sustainable Transport Development Strategy until 2030 will have a major impact on the development of intermodal transport in Poland. The development of infrastructure supporting intermodal transport should be implemented, to a large extent by connecting sea and inland waterway ports with the land road and rail network. Further development of the potential of logistics centres in the country is planned (Sustainable Transport Development Strategy until 2030, p.107). Currently, the following logistics centres can be distinguished in the logistics system of Poland, corresponding to the European models: Silesian Logistics Centre in Gliwice, International Logistic Centre “Euroterminal Sławków” in Sławków, Logistic and Investment Centre Poznań CLIP LLC in Swarzędz-Jasinia, Greater Polish Logistics Center Konin-Old Town JSC in Modła Królewska by Konin. Active construction works are being carried out within the following port logistics centres: Pomeranian Logistics Centre in Gdańsk, Gdynia Logistics Centre and West Pomeranian Logistics Centre in Szczecin (Demianiuk, Bandarenka, 2018, p.143-144).

Data from the Central Statistical Office shows that the transport and storage sector generated 6.2% of GDP in 2018, which was 130.8 billion PLN. In 2015, this sector generated 103.5 billion PLN, in 2016 – 106.5 billion PLN, in 2017 – 119.5 billion PLN (Annual macroeconomic indicators, Central Statistical Office). According to the data of the Central Statistical Office (GUS), revenues from the sales of services in all transport units in 2018 were 8.6% higher than in 2017 and amounted to 250.0 billion PLN. The share of revenues of enterprises with more than 49 employees in total revenues was 48.2% and the increase in sales of services in these units – 8.9%. The average employment based on the employment relationship in the entire transport sector in 2018 was 622.9 thousand people. The average gross monthly remuneration of employees employed on the basis of the employment relationship in the entire transport sector in 2018 amounted to 3,972.8 PLN (Transport - business results in 2018, Central Statistical Office, p. 15).

There are many entities operating in the TFL sector in the country with a diverse scale and complexity of operations as well as the diverse nature of logistics services provided (Zysińska, Krysiuk, 2018). The transport sector in Poland is highly fragmented. In Poland, the overwhelming majority of enterprises – 99.8%, are companies from the SME sector: micro (1.94 million), small (57 thousand) and medium-sized enterprises

(15 thousand). Large companies are only 0.2%. According to the sector structure of micro, small and medium-sized enterprises, almost 51.7% of companies are engaged in service activities. According to the report on the status of the small and medium-sized enterprise sector in Poland (PARP 2018), 7.6% of companies are transport and warehouse management companies.

The market of industrial and logistics warehouses is developing very dynamically in Poland. Poland is the seventh largest warehouse market in the EU and logistics companies constitute the largest group of lessees. The area of warehouse facilities is systematically growing. In 2008, there was 5.1 million m^2 of warehouse space and, at the end of the first quarter of 2019, the resources amounted to 16.9 million m^2. There are 70 new projects under construction, which will increase the warehouse space by another 2.24 million m^2 after completion of the investment. Polish warehouses are very attractive in terms of rental costs, e.g. in comparison with Germany (Wolak, 2019, p.14).

It is worth noting that one of the fastest growing segments of the logistics sector in Poland is the CEP market (courier, express and parcel services), which, in 2018, was worth 6.95 billion PLN and accounted for 2.5% in value and 4.8% in size of the European market. According to analyses of Poczta Polska, CEP operators handled over 476 million parcels in 2018 (CEP market in Poland, 2020). The CEP market in Poland is dominated by seven entities, headed by DPD with over 50 branches in Poland. Three global integrators are present: DHL, UPS, and FedEx (TNT). Other entities actively operating in Poland include GLS, InPost and the postal operator Poczta Polska, which has the largest logistics network in Poland, including almost 7500 offices, branches, and postal agencies.

The analysis of the TFL sector based on the ranking of TFL companies, prepared under the substantive supervision of prof. dr hab. H. Brdulak, revealed a 13% growth rate of the TFL market in the year 2018, measured by the value of revenues from TFL activities in relation to 2017, and the total value of revenues of companies in the ranking at the level of 25 billion PLN (24th edition of the ranking of TFL companies, 2019, D10). Employment increased by 15%, fixed assets increased by 18%, net profit by 35% and the profitability index by 15%. The highest employment growth was recorded in rail transport, represented by Lotos, as well as in warehousing services. Employment also increased above the average among foreign and mixed capital companies and companies where there was an increase in the share of e-commerce revenues in total revenues compared to 2017. Companies that have recorded an increase in the share of revenue from e-commerce are characterized by higher average revenue and higher profitability. Half of the companies analysed in the ranking indicated the Polish origin of the capital, and a half-indicated foreign and mixed one.

Table 1. Top ten companies by value of revenues from TFL operations in 2018

Company name	Capital origin	Revenues from TFL in 20018 in PLN	The main source of revenues, type of activity
Raben Group	Netherlands	2 498 826 000	logistics services
DPD Polska Capital Group	France, Germany	1 892 047 759	courier services
DB Schenker	Poland	1 648 524 000	logistics services
FM Logistic	France	1 043 908 905	logistics services
ROHLIG SUUS Logistics SA	Poland	910 777 053	logistics services
DSV	Denmark	894,311,000	logistics services
Kuehne+Nagel	Austria	817 270 000	logistics services
GRUPA PEKAES	Luxembourg	802 075 000	forwarding
GEFCO Polska	Russia, France	763 064 000	transport
LOTOS Kolej Sp. z o.o.	Poland	711 989 750	transport

Source: Ranking of companies according to revenues from TFL 2018, 24th edition of the ranking of TFL companies, Dziennik Gazeta Prawna, 14-16 June 2019, No. 115 (5017), D4.

In total, the volume of revenues in the group of leader companies accounted for almost half of the revenues from TFL of all the analysed companies. They are clearly financially stable, innovative, and economically strong entities. The analysis of the top ten TFL companies (Table 1) demonstrates that

three of them represent Polish capital, while the remaining entities represent foreign capital, mainly French. Six companies in the top ten of the ranking indicated logistics services as the main source of revenue. Throughout the report, 11 companies indicated logistics services as the main source of revenue. These are mainly global companies, operating on the basis of different modes of transport. The distribution of companies according to revenue indicates a division of the Polish market into large companies providing logistics services as a logistics operator, often with foreign and mixed capital, and smaller companies, mainly with Polish capital, specialising in forwarding and road transport.

Poland is gaining importance in European logistics. The volume of road cargo transport in tkm accounts for 17.5% of the total EU countries' transport, which places Poland in the first position among 28 EU countries. The analysis of the value of the logistics market presented in the report "Top 100 in European Transport and Logistics Services 2019/2020" prepared by the Fraunhofer Institute is crucial for the assessment of Polish logistics. In 2018, the market was worth EUR 1 120 billion for 30 European countries. This compares to EUR 1 030 billion in 2015, EUR 1 050 billion in 2016 and EUR 1 080 billion in 2017. As Table 2 shows, the leader of European logistics is Germany, where the volume of logistics transactions is 25% of the accumulated European logistics expenditures. Poland takes a high seventh position from among 30 European countries and top place from among the group of Central and Eastern European countries. Expenditure on logistics in Poland in 2016-2018 accounted for 4% of total expenditure on logistics in European countries. Poland is an attractive location for foreign investors from the logistics sector. New prospects for Polish companies from the TFL sector are opened by the Tri-Coast Initiative, which combines the interests of 12 EU countries, aimed at deepening economic partnership, and infrastructure and energy cooperation between Central and Eastern European countries.

In the 2018 ranking of the World Bank, the position of Poland improved compared to 2016. The country had moved from the 33rd place to the 28th place among 160 countries rated by the Logistics Performance Index (LPI). This has been the best place for Poland in the LPI ranking since 2007, when the first ranking was published. In 2018, the synthetic result for Poland was 3.54 points (Connecting to Compete 2018).

Table 2. Accumulated European logistics expenditures

Name of the country	2018 in %	2016 in billion EUR
Germany	25%	259.0
France	12%	127.9
United Kingdom	12%	139.0
Italy	9%	91.6
Spain	7%	72.7
Netherlands	5%	49.9
Poland	4%	42.4
Sweden	3%	30.7
Switzerland	3%	29.3
Belgium	3%	26.5

Source: Top 100 in European Transport and Logistics Services 2017/2018. Top 100 in European Transport and Logistics Services 2019/2020.

According to the National Statistical Committee of the Republic of Belarus data on January 1, 2020, 1,774 organizations engaged in logistic, transport and forwarding activities in Belarus. The volume of logistics and transport-forwarding services provided by these organizations in 2019 amounted to 5,109.6 million rubles; including 438.5 million Belarusian rubles (about 210 million dollars) was the volume of logistics services (Table 3).

According to Table 3, the change in the volume of logistics services provided by all organizations does not have a clear trend. If in 2016 compared to 2015 growth was at 57.2%, then in the next two years there is a slowdown in the growth of services provided. In 2017 compared to 2016 the volume of logistics services increased by 20.3% and in 2018 compared to 2017 the increase was only 1%. A sharp increase (by 45.1%) was noted in 2019.

Attention may be drawn to the fact that Belarus has an impermissibly low volume of services for the processing of transit cargo. In 2015 it was 29.7% of the total volume of the logistics services provided, whereas by 2019 it had decreased to 12.9% (Table 3). In conditions when the Republic of Belarus has a favorable geographical position at the intersection of important transport routes and is positioned as a transit country this may indicate significant shortcomings in this area.

Table 3. The volume of logistics and transport-forwarding services in Belarus in 2015-2019

Specification	2015	2016	2017	2018	2019
1. The volume of logistics and transport-forwarding services (million rubles)	2256.3	3179.0	4091.7	4674.7	5109.6
1.1. Volume of logistics services:					
- mln. rubles	156.9	246.6	296.7	302.2	438.5
- as a percentage of the previous year		+57.2%	+20.3%	+1.02%	+45.1%
1.2. Volume of transport-forwarding services:					
- mln. rubles	2099.4	2932.4	3795.0	4372.5	4671.1
- as a percentage of the previous year		+39.7%	+29.4%	+15.2%	+6.8%
2. The volume of logistics services for the processing of transit cargo on the territory of the Republic of Belarus					
- mln. rubles	46.6	59.8	76.5	54.3	56.7
- share of total logistics services	29.7	24.2	25.8	18.0	12.9

Source: Transport in the Republic of Belarus 2020. Statistical Book. National Statistical Committee of the Republic of Belarus. Minsk. p. 22.

The volume of transport and forwarding services in the Republic of Belarus in the analyzed period tends to grow but the rate of this growth is constantly slowing down. If in 2016 compared to the previous year it increased by 39.7%, then in 2019 compared to 2018 it increased by only 6.8%. At the same time, during the analyzed period, the ratio of the volume of logistics and transport-forwarding services practically did not change: logistics services occupy about 7-8% (Fig. 1).

Services provided by motor road transport carriers accounted for about half of the volume of transport forwarding services (Table 4). This is due to the fact that Belarus has an extensive network of highways, which makes it possible to provide year--round communication with all settlements. By the density of public roads per 1 sq. km the republic ranks 15th in the world and 12th in terms of their length per 1,000 inhabitants. More than 58% of the total passenger traffic and about 40% of the total cargo traffic are transported by motor road transport (the transport and logistics system of Belarus).

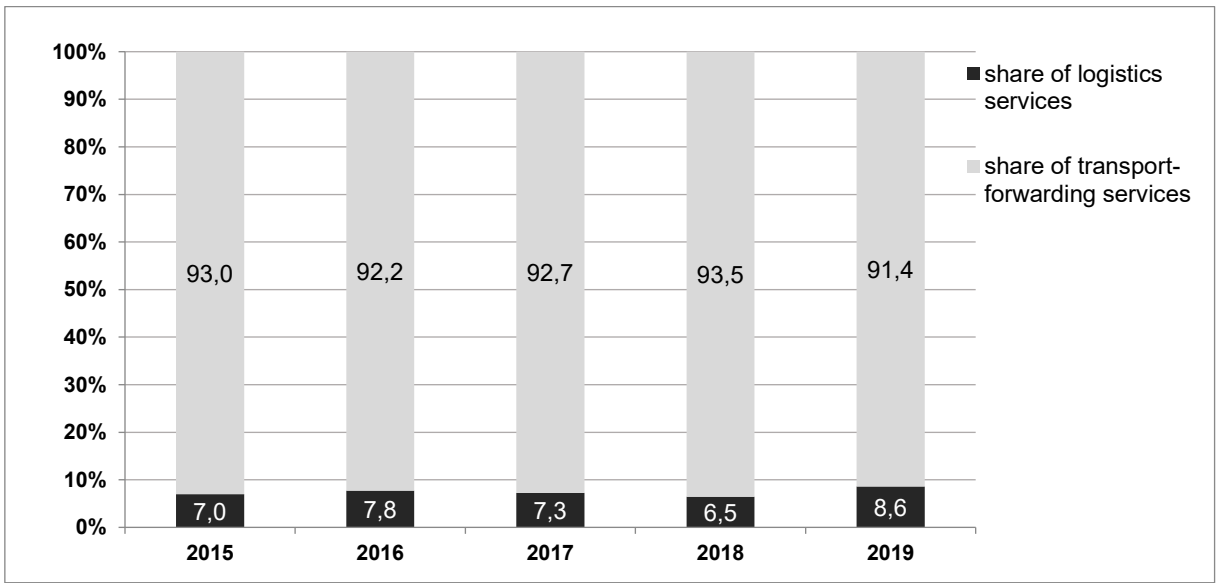

Figure 1. The structure of the logistics and transport-forwarding services in 2015-2019
Source: own calculation on the basis of research results.

Table 4. The structure of transport forwarding services provided by all organizations engaged logistics and transport forwarding activities in the Republic of Belarus in 2015-2019 (%)

Specification	2015	2016	2017	2018	2019
Volume of transport-forwarding services	100,0	100,0	100,0	100,0	100,0
Of which					
Motor road	48,4	51,7	52,7	50,8	49,9
Inland water and sea	4,4	4,7	4,0	3,7	4,3
Railway	45,6	41,8	41,9	44,1	44,2
Air	1,7	1,7	1,3	1,4	1,7

Source: own calculation on the basis of data of National Statistical Committee of the Republic of Belarus.

Railway transport takes the second position after motor road transport. It accounts for about 40-45% of all transport-forwarding services. At the end of 2019 the length of general purpose railway tracks in use in the republic was 5,479.8 km, of which electrified ones were 1,227.9 km (22.4%) (Transport in the Republic of Belarus, 2020, p.11). The railway communication covers more than 2100 settlements of the republic and also connects Belarus with Paris, Nice, Berlin, Warsaw, Prague, Vienna, the capitals and administrative centers of Russia, Ukraine, Lithuania, Latvia, and Kazakhstan. The share of water and air transport in the volume of transport and forwarding services rendered during the analyzed period remains insignificant (1.5-4%).

In general, the share of exports of transport services in the total volume of services exports of the country for the period 2015-2019 ranged from 41 to 44%. According to the National Statistical Committee, at the end of 2019 60 organizations out of the total number of organizations engaged in logistics and transport-forwarding activities in the Republic of Belarus had the status of logistics centres (Table 5).

Table 5. Main indicators of logistics centres activities in the Republic of Belarus in 2015-2019

Specification	2015	2016	2017	2018	2019
Number of logistics centres:					
- units	18	30	35	44	60
- as a percentage of the previous year		+66.7%	+16.7%	+25.7%	+36.4%
Volume of services provided by logistics centres:					
- mln. rubles	109,8	155,3	192,9	225,6	223,6
- as a percentage of the previous year		+41.4%	+24.2%	+17.0%	-1.0%
Volume of the processing transit goods provided by logistics centres:					
- mln. rubles	46.2	57.3	75.8	52.5	55.1
- as a percentage of the previous year		+24.0%	+32.3%	-30.7%	+5.0%

Source: own calculation on the basis of data of National Statistical Committee of the Republic of Belarus.

Over the past five years (from 2015 to 2019), the number of logistics centres has increased by 3.3 times (from 18 to 60). The largest growth was observed in 2016 (+ 66.7% compared to the previous year). However, despite this, an unstable trend in the volume of services provided by logistics centres draws attention. If in 2016 compared to 2015 the volume of logistics centre services increased by 41.1%, then in subsequent years the growth was less noticeable, and in 2019 there was even a 1% decrease.

The most famous rating developed for the logistics industry, measuring the performance of supply chains, the state of trade logistics at the national and international level, is the Logistics Performance Index compiled by the World Bank and calculated every two years (2007, 2010, 2012, 2014, 2016 and 2018). According to the World Bank LPI index ranking for 2007-2018, Belarus in 2018 ranked 103rd out of 160 countries that had participated in the assessment, which was 17 points higher than in 2016 (Table 6).

The data in Table 6 shows that, despite the implementation of a number of measures to develop the logistics system and transit potential in the country, Belarus's position in the LPI ratings in 2007-2016 had deteriorated significantly and in 2018 it still did not enter the top 100 countries in terms of the given index. According to experts, this is explained, firstly, by the higher rates of efficiency for logistics systems in other countries and, secondly, may be a consequence of the subjectivity of the research conducted by the World Bank based on a survey of international (transnational) logistics companies. In addition, experts note a low – up to 63% – loading of warehouse space in logistics centers and, as a result, a small turnover ratio of goods – 1.18, which is significantly lower than the indicators of other countries (Zorina, Trukhan, 2019).

Concerning index core components in Belarus, the country ranks 112th in terms of the efficiency of customs and border clearance which is 24 positions higher than the indicator of 2016 but 62 positions below the indicator of 2007. In terms of the quality of infrastructure, the country ranks 92nd (43 positions up compared to 2016). In terms of competence and quality of logistics services, Belarus has 85th ranks (up 40 positions). According to the classifications, "The ability to track and trace consignments" and the "Timeliness of goods deliveries", the Republic of Belarus took 109th and 78th positions respectively; but in terms of ease of transportation, it dropped from 92nd to 134th.

Table 6. Logistics Performance Index in 2007-2018

Name of the country	2007	2010	2012	2014	2016	2018	Position 2018 compared to 2016	Position 2018 compared to 2007
Belarus	74	-	91	99	120	103	↑17	↓29
Ukraine	73	1-2	66	61	80	66	↑14	↑7
Russia	99	94	95	90	99	75	↑24	↑24
Lithuania	58	45	58	46	29	54	↓25	↑4
Latvia	42	37	76	36	43	70	↓27	↓28
Poland	40	30	30	31	33	28	↑5	↑12

Source: own calculation on the basis of the World Bank data. Retrieved from: https://lpi.worldbank.org/international/global.

Problems and challenges for the development of transport and logistics sector in Poland and Belarus

The Polish TFL sector is in a zone of very dynamic changes. The digitisation of supply chains, automation, the development of e-commerce and the e-commerce sector are progressing rapidly. According to the report of Statista Digital Market Outlook, Poland is ranked 13th among the fastest growing e-commerce markets in the world (Hernik, 2019). The share of e-commerce in total Polish trade is about 6%. The number of Poles buying over the Internet is gradually increasing. According to the Gemius 2020 report, online shoppers already make up more than 7/10 (73%) of all surveyed Internet users (E-commerce in Poland, 2020). E-commerce poses a major challenge for logistics operators; for it significantly affects the shape of logistic chains and requires precise logistic services. The main players of the TFL market in the country include the services provided for online stores in their areas of operation (e.g. Raben Group, DPD Polska, DB Schenker, FM Logistic, ROHLIG SUUS Logistics SA, DSV, Kuehne+Nagel). TFL companies face the challenge of an in-depth analysis of the existing business models. Nowadays, most logistics companies recognize the practical viability of novel IT solutions: Big Data, artificial intelligence, the robotisation of warehouse works, implementation of autonomous vehicles or electromobility, and conduct analyses on the methods and speed of their implementation. Based on the industry 4.0 concept, a logistics 4.0 concept has emerged, aiming at the full automation and digitization of processes in the supply chain. However, it is worth noting that the current level of robotisation in the warehouses of logistics companies in Poland is very low.

It is impossible not to mention some of the problems currently faced by the transport and logistics sector in Poland related to, among others, liquidity, the decrease in demand for transport, and labour shortages. Then there is also an increase in labour costs, a lack of transparency in legislation, an increase in the level of regulation and tightening of the legislation, the necessity of meeting the

standards related to exhaust gas emissions; not to mention Brexit, the implementation of technological innovations, and customer payments. According to Coface Research Institute, the number of bankruptcies and restructurings in the transport sector increased from 40 in 2017 to 56 in 2018 (24th edition of the ranking of TFL, 2019, D3). The transport and logistics sector is one of the most affected by personnel shortages in the entire Polish economy. Truck drivers have been scarce on the ground in recent years. Among other things, there is a lack of forklift operators and warehouse staff.

Legislative changes in Poland and the EU, competition on the part of transport companies in other EU member states, growing competition of the transport sector from Eastern European countries, and the negative economic situation on international markets, have had a major impact on the Polish companies in the TFL sector. All these difficulties have been escalated by the economic crisis caused by the coronavirus and quarantine restrictions covering vast parts of the world. During this crisis, large TFL companies have been perceived by customers as being more reliable and stable, which may result in polarization of the sector around larger and stronger entities. The logistics sector in Poland is still quite fragmented, so consolidation can be expected to continue. Recipients of logistics services are looking for savings at individual links in the supply chain to focus on their core competencies. The justification for logistics outsourcing has become even more significant.

Experts note that, despite all shortcomings, the logistics system of the Republic of Belarus has a significant competitive advantage. Among them: the availability of transport communications that have significant throughput in national and international communications; the high level of containerization (up to 10 container trains are passed daily with a route speed of 1200-1400 kilometers per day); the high level of safety and security of transported goods; the multilateral nature of the country's economic ties (49% is the share of trade with the countries of the Eurasian Economic Union, 25% – with the European Union, 12% – with Asia) (CONCEPT of the logistics system development of the Republic of Belarus for the period up to 2030).

However, there is a group of factors that have slowed down the development of logistics in Belarus. One of these factors is insufficient investment in the country's transport sector. So, in 2018, according to the National Statistical Committee of the Republic of Belarus, the size of fixed capital investments for “Transportation and Storage” economic activity was equal to 1.99% of GDP, which is significantly lower than the level of other countries. Another factor is the insufficient storage space of the logistics centres. Thus, according to experts, as of September 30, 2018, in Belarus the total area of covered storage space “A” class was more than 812 thousand sq. m. while the total area of centres in Poland exceeds 9 million sq. m. (Algerchik, 2018).

Difficulties for the operation of Belarusian logistics centres have also been caused by flaws in the regulatory documents operating within the framework of the Customs Union and the EAEU. For example, the principle of residence is in force, according to which a customs declaration for goods must be submitted only to the customs authority of a member state of the EAEU, on the territory of which the declarant of goods is registered or permanently resides, despite a common customs territory. That is, a Russian company can submit a declaration for goods only to the customs authorities of Russia and cannot be “released” by the customs authorities of Belarus, despite the lower cost. By comparison, in Lithuania it is possible to handle transit goods because Europe is a common customs territory[6].

In the Republic of Belarus, as before, there is a problem related to securing and overseeing the complexity of a logistics work. The market for 3PL-providers and 4PL-providers is underdeveloped. The country is characterized by a low level of territorial distribution of logistics centres. Initially, 50 plots were allocated for the construction of modern logistics centres throughout Belarus, but many plots were unclaimed since they were located in disadvantageous places, far from the highways. The most popular among investors were the areas located in Minsk and within a radius of 10-15 km from the Minsk Ring Road. And today more than 75% of all logistics centres are located in the Minsk region.

In order to improve the development of logistics in Belarus, the *Concept for the development of the logistics system of the Republic of Belarus for the period up to 2030* was developed and approved. According to the Concept, by 2030 it is planned to: a) achieve the position of the Republic of Belarus in the LPI World Ranking to a level not lower than 50; b) increase the volume of logistics and transport-forwarding services, as well as the amount of income from transit by 2 times compared to 2016. In addition, the further development of the logistics system in Belarus presupposes the optimization of the participation of the state and economic entities in the formation of legal, economic and other

relations in the commodity circulation market. It is assumed that capital investment in the logistics system will be carried out at the expense of the economic entities themselves, investment and innovation funds, and banks and other interested parties. The state will participate in the development of the logistics system in various forms of cooperation with business, including through the mechanism of public-private partnership.

Conclusions

The high position of Poland's logistics in international rankings, according to the data of the Central Statistical Office, testify to the development of the logistics system and the dynamic development of the logistics service market. Internal consumption, e-commerce, export, investments, and infrastructure development are factors that strongly stimulate the development of the logistics service market in Poland. Specialization of the sector and the expansion of the range of services in key market segments are becoming a significant development direction of the TFL market in Poland. The importance and role of a logistics service provider are growing, and contract logistics is developing. On the Polish market of logistics services, a significant number of leading international operators are providing comprehensive logistics services tailored to the expectations of business and individual customers. The entity structure of the TFL market in Poland increasingly resembles the structure of highly developed EU markets. Poland are active in 3PL logistics and are entering the 4PL level.

Generally speaking, the current level of development of logistics and logistics service market in Belarus is insufficient for the country to take its stable place in international supply chains and to increase its level of integration in international logistics. This is further confirmed by the data of the World Bank. Despite the implementation of a range of activities and undertakings aimed at the development of the logistics system and transit potential, the position of Belarus in the LPI ranking has deteriorated. Experts point to the low loading rate of warehouse space in logistics centres and, as a result, the small ratio of commodity turnover, which is much lower than in other countries. In Belarus, the market of logistics services is very young and poorly shaped. Most of the entities operating in the TFL zone provide a highly limited scope of services, the logistics outsourcing market is immature and the practice of integration with 3PL operators is not widespread. The size of the 3PL service market in the country is only 5%, and 95% of the services are provided at the level of 2PL (Kurochkin, 2016, p. 34.). Belarus is only at the second level of 2PL logistics development (Goryacheva, 2019, p. 149). Belarus faces the challenge of constructing a more efficient logistics system so that the logistics standards applicable in highly developed markets may also be shared by Belarus; and the use of specialized logistics operators could become more common across the country.

Generally speaking, transport and logistics companies on both sides of the border are affected by specific issues that depend on, among other things, the specificity of the markets, the state of the economy, macroeconomic and investment policies, legal regulations, the position of the country in international supply chains, reactions to megatrends, and factors resulting from corporate resources. Poland operates within the structures of the European Union, while Belarus operates within the structures of the Eurasian Economic Union, which also determines the challenges which the countries and their logistics systems will have to face. The transport and logistics sectors in both Poland and Belarus are under the influence of major technical and technological changes, as well as market trends that will intensify the existing challenges. Companies are facing revolutionary 4.0 modifications in supply chain automation and digitization, process digitization and material flow optimization. Adapting to these will improve the long-term cooperation of all participants in the supply chains, addressing growing competition will represent major challenges in the short and long-term future.

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