

**КИРИЛЕНКО**Оксана Миколаївна  
ons@ua.fmд.е.н., професор, завідувач  
кафедри менеджменту  
зовнішньоекономічної діяльності  
підприємств, Національний  
авіаційний університет

УДК 656.67

**НОВАК**Валентина Олексіївна  
novak.nau@mail.ruк.е.н., професор кафедри,  
Національний авіаційний  
університет**AVIATION TRANSPORT DEVELOPMENT  
TRENDS IN UKRAINE****ТЕНДЕНЦІЇ РОЗВИТКУ АВІАЦІЙНОГО  
ТРАНСПОРТУ В УКРАЇНІ****МОСТЕНЬКА**

Тетяна Леонідівна

**РАЗУМОВА**Катерина Миколаївна  
krazum@ukr.netд.е.н., професор, завідувач  
кафедри організації авіаційних  
робіт та послуг, Національний  
авіаційний університетDOI: <https://doi.org/10.37634/efp.2020.12.2>д.е.н., професор, завідувач  
кафедри менеджменту,  
Національний університет  
харчових технологій

**KYRYLENKO Oksana Mykolaivna** – Doctor of Economics, Professor, Head of the Department (Management of Foreign Economic Activity of Enterprises), National Aviation University

**NOVAK Valentyna Oleksiivna** – PhD in Economics, Professor of department, National Aviation University

**RAZUMOVA Kateryna Mykolaivna** – Doctor of Economics, Professor, Head of the Department (Aviation Works and Services), National Aviation University

**MOSTENSKA Tetiana Leonidivna** – Doctor of Economics, Professor, Head of the Department (Management), National University of Food Technology

The paper substantiates the number of passenger flows by different modes of transport for the last 40 years and analyzes passenger flows by Ukrainian airlines. The share of different types of transport in the total volume of passenger traffic during the years of independence of Ukraine is compared, and the corresponding conclusions concerning tendencies of development of air transport in Ukraine are made. It has been proven that high-income passengers remain the main type of passengers on domestic routes. Further growth in demand will depend on the growth of the country's economy, airline tariff policy, frequency of flights and ease of connections.

The significant growth of passenger traffic in the international connection is partly explained by the trends that began in 1990. Following Ukraine's declaration of independence, imports of imported goods have increased significantly and demand for travel abroad has grown significantly. It should also be noted that the transport infrastructure of Ukraine allows to reach any point of the country using terrestrial modes of transport, which are significantly cheaper than aviation. It is no wonder, therefore, that most domestic airlines are focused on international transportation. Considerable potential for the development of international flights lies directly in the geographical location of the country, which is capable of providing high transit passenger traffic.

Analyzing the work of Central European airports, it should be noted that Ukraine was the leader in the growth of passenger traffic. Airports of Ukraine served 10.7 mln passengers in six months, which is 20 % more than in the same period last year. In terms of passengers number carried, Ukraine came second after Poland – 22.3 mln passengers. Romania is in third place with 10.5 mln passengers.

\* \* \*

У статті обґрунтовано кількість пасажиропотоків різними видами транспорту за останні 40 років та проаналізовано пасажиропотік українськими авіакомпаніями. Порівнюється частка різних видів транспорту у загальному обсязі пасажиропотоків за роки незалежності України та зроблено відповідні висновки стосовно тенденцій розвитку повітряного транспорту в Україні. Доведено, що пасажирів з високим рівнем доходу залишаються основними пасажирами на внутрішніх маршрутах. Подальше зростання попиту залежатиме від зростання економіки країни, тарифної політики авіакомпаній, частоти польотів та простоти сполучень.

Значне зростання пасажиропотоку в міжнародних сполученнях частково пояснюється тенденціями, що почалися у 1990 р. Після проголошення Україною незалежності імпорту товарів значно зріс, а водночас з ними – попит на закордонні поїздки. Слід також зазначити, що транспортна інфраструктура України дозволяє дістатися до будь-якої точки країни, використовуючи наземні види транспорту, які значно дешевіші за авіаційні. Тому не дивно, що більшість вітчизняних авіакомпаній орієнтовані на міжнародні перевезення. Значний потенціал для розвитку міжнародних рейсів полягає безпосередньо у географічному розташуванні країни, яка здатна забезпечити високий транзитний пасажиропотік.

Аналізуючи роботу центральноевропейських аеропортів, слід зазначити, що Україна була лідером за зростанням пасажиропотоку. Аеропорти України за півроку обслуговували 10,7 млн пасажирів, що на 20% більше, ніж за аналогічний період минулого року. За кількістю перевезених пасажирів Україна посіла друге місце після Польщі – 22,3 млн пасажирів. На третьому місці Румунія – 10,5 млн пасажирів.

**Keywords:** passenger transportation, transport, air transport, aircraft traffic, domestic airlines, international airlines, trends

**Ключові слова:** пасажирські перевезення, транспорт, повітряний транспорт, авіан перевезення, внутрішні авіалінії, міжнародні авіалінії, тенденції

## FORMULATION OF THE PROBLEM

The world is changing, and with it, the nature of business entities is changing. The role of aviation in the economy of Ukraine is growing every year. The transportation volume of passengers, cargo and mail is increasing, which accelerates the economic development and integration of the country into the world community. Along with the increase in the transportation volume, the competition in the market is growing both between airlines and between different modes of transport.

### *Analysis of recent research and publications*

The study is conditioned by the need to manage the processes of interaction between enterprises of different modes of transport in order to organize an efficient transport process of passenger flows and competitiveness of the Ukrainian transport system in the world market.

The level of development of the state's transport system is one of the most important features of its technological progress. The transport system becomes the basis for Ukraine's effective entry into the world community, and its occupation of the place corresponding to the level of a highly developed country.

Aviation transport holds a special place in the transport system of Ukraine and practically, the only one, demonstrates stable positive dynamics of development during the years of Ukraine's independence. The organization of interaction between different modes of transport remains very relevant today. In turn, efficient transport management in today's market conditions is a prerequisite for improving business efficiency, creating, developing and realizing the competitive advantages of enterprises.

General provisions of development of interaction of different modes of transport are covered in scientific works of foreign and domestic scientists: V. Afanasyev, I. Gordienko, V. Yelagin, V. Zagorulko, V. Koba, O. Kosareva, Y. Kulaeva, V. Novak, S. Podrezy, E. Sich, L. Yashchenko, et.al.

Solutions to passenger traffic management have been highlighted by scientists in the aspect of individual studies of the theory of transport processes and logistics, in particular, O. Arefyeva, R. Bradley, E. Brian, T. Johnson, T. Donaldson, B. Cornell, R. Mitchell, E. Sich, R. Freeman, J. Fruman, et.al.

At the same time, the problems of development of transportation by modes of transport, including, by aviation, during the years of Ukraine's independence have not been sufficiently investigated.

Thus, the relevance of these problems, their practical importance and lack of elaboration determined the topic of this study.

The **PURPOSE** of the paper is the determination of current trends in the development of aviation transport as a component of the transport system of Ukraine.

## RESULTS

Today, Ukraine's air transport and related terrestrial infrastructure, as of January 1, 2020, 18 domestic airlines, 19 civil aviation airports and airfields and SEATS "Ukr-AeroRukh" have a significant impact on the development of the passenger transport market, trade and economy [5].

Ukraine has a special geographical position that deter-

mines its high transit potential and makes it possible to play the role of a geopolitical bridge in connection of Europe and Asia, using all modes of transport.

The united transport system of Ukraine includes: railway, sea, river, road, air transport, departmental transport, pipeline transport [6].

We consider it advisable to provide public transport by rail, sea, river, road and air transport.

Table 1 summarizes the number of passenger traffic by different modes of transport in the last 40 years.

Although Ukraine still has considerable potential for the development of the domestic transportation market, in our opinion, and it will be so in perspective, international transportation is the main source of revenue.

If we analyze the general trends of the number of passengers carried by type of public transport in Ukraine, as presented in Table 1, then in 1980 the number of passengers carried amounted to 8515.686 mln people, which is 2.74 times more than in 2000, and 4.33 times more than in 2019.

It should be noted that passenger traffic by air transport exceeded the figures of 1980 only in 2018, when it reached 12.533 mln passengers, and in 2019 still increased by 9.4 % and make up 13,706 mln people. For comparison, the volume of passenger traffic by rail decreased significantly over the same period from 648,869 mln passengers in 1980 to 498.683 mln passengers in 2000 and up to 149.6 mln passengers in 2019, i.e. 4.34 times.

More dramatic changes were made in passenger transport by sea, having decreased in 40 years by 425 times, and in river transport, where passenger transportation decreased by 43.8 times.

The calculations made by the authors make it possible to conclude that during the years of independence of Ukraine, against the background of the general tendency of passenger transportation by public transport to decrease, only air transport shows a positive dynamic.

The calculations made by the authors make it possible to conclude that during the years of independence of Ukraine, against the background of the general tendency of passenger transportation by public transport to decrease, only air transport shows a positive dynamic.

The volume of passenger traffic by Ukrainian airlines for 2003–2019 is presented on Fig. 1.

Passenger transportation during the year 2019 was performed by 18 domestic carriers, among which the largest volumes were performed by the airlines "International Airlines of Ukraine", "Azure Air Ukraine", "Skyap", "Wind rose" and "Bukovina". For the reporting year, the five leading airlines carried a total of 13,306.7 thousand people, which is 22.4 % more than in 2018 and represents 97% of the total volume of passenger transportation of Ukrainian airlines [5].

In 2019, 10 domestic airlines to 46 countries of the world operated international scheduled passenger services according to the approved timetable [5]. The number of passengers using the services of Ukrainian companies increased by 4.6 % and amounted to 7107.2 thousand people, with the average percentage of passenger loading of international scheduled flights increased by 2.1 % and amounted to 80.9 %. The development of a network of routes of domestic carriers, which started operation on a regular basis of 17 international airlines, continued.

At the same time, there was an expansion of activity in the Ukrainian market of foreign airlines, using services of 9,222.5 thousand passengers, which is 37.4 % higher than in 2018 and makes up 57 % of the total volume of regular passenger transportation between Ukraine and countries of the world. In total, 40 foreign airlines operated regular flights to Ukraine (including four new ones – Austrian Airlines Laudamotion, French AigleAzur (operated until September 2019), Israeli Airlines and Norwegian Scandinavian

Aines 37 Airlines) countries [5].

During the year, 29 new routes were opened by foreign carriers, 21 of which were new routes – “Ryanair” and “WizzAir Hungary”.

Comparison of the share of different modes of transport in the total volume of passenger traffic during the years of independence of Ukraine is shown on Fig.2.

All these statistics indicate that air travel shows a steady growth trend and has significant reserves.

Table 1

Number of passengers carried by type of public transport, mln passengers [compiled by the authors on [1, 5, 8, 9]]

Years	Mode of transport					Total
	Railway <sup>1</sup>	Sea	River	Road <sup>2</sup>	Air <sup>3</sup>	
1980	648,87	28,48	24,79	7801,06	12,49	8515,69
1981	653,18	30,71	27,53	7794,86	12,72	8518,99
1982	656,49	29,36	26,63	7874,07	12,73	8599,27
1983	668,29	29,69	26,81	7876,16	12,71	8613,66
1984	687,65	29,23	24,98	7998,74	12,78	8753,37
1985	695,13	28,66	23,82	8076,85	12,62	8837,07
1986	734,20	28,68	21,01	8230,41	12,80	9027,10
1987	717,46	27,57	18,75	8383,82	12,67	9160,27
1988	711,12	27,96	20,35	8552,80	13,07	9325,30
1989	704,08	26,52	20,20	8382,87	14,30	9147,97
1990	668,98	26,26	19,09	8330,51	14,83	9059,67
1991	537,41	20,79	18,29	7450,32	13,96	8040,76
1992	555,36	13,14	11,16	6464,89	5,67	7050,21
1993	501,50	10,50	8,06	4795,66	1,95	5317,67
1994	630,96	10,36	6,97	4039,92	1,67	4689,87
1995	577,43	7,82	3,59	3483,17	1,91	4073,93
1996	538,57	5,04	2,74	3304,60	1,72	3852,67
1997	500,84	4,31	2,44	2512,15	1,48	3021,22
1998	501,428	3,84	2,36	2403,42	1,16	2410,78
1999	486,81	3,08	2,27	2501,71	1,09	2994,96
2000	498,68	3,76	2,16	2 603,804	1,16	505,77
2001	467,83	5,27	2,03	2 722,001	1,29	476,42
2002	464,81	5,42	2,21	3 069,136	1,77	474,21
2003	476,74	6,93	2,19	3 297,504	2,37	488,24
2004	452,23	9,68	2,14	3 720,326	3,23	467,27
2005	445,55	11,34	2,25	3 836,514	3,81	462,95
2006	448,42	10,90	2,02	3 987,982	4,35	465,69
2007	447,09	7,96	1,85	4 173,033	4,93	461,83
2008	445,47	7,36	1,55	4 369,125	6,18	460,56
2009	425,97	6,22	1,51	4 014,035	5,13	438,84
2010	427,24	6,65	0,99	3726,29	6,11	4167,26
2011	429,78	7,06	0,96	3611,83	7,50	4057,14
2012	429,12	5,92	0,72	3450,17	8,11	3894,04
2013	425,22	6,64	0,63	3343,66	8,11	3784,26
2014 <sup>4</sup>	389,31	0,03	0,57	2913,32	6,47	3309,69
2015 <sup>4</sup>	389,79	0,03	0,55	2250,35	6,30	2647,02
2016 <sup>4</sup>	389,06	0,03	0,45	2024,89	8,28	2422,70
2017 <sup>4</sup>	164,94	0,03	0,56	2019,32	10,56	2195,41
2018 <sup>4</sup>	157,96	0,07	0,60	1906,85	12,53	2078,01
2019 <sup>4</sup>	149,60	0,07	0,57	1804,90	13,71	1968,84

<sup>1</sup> By data of PC "Ukrzaliznytsia".

<sup>2</sup> From 2000 – taking into account the transportation of passengers by small business entrepreneurs – legal entities and individuals

<sup>3</sup> From 2003 – according to the State Aviation Service of Ukraine

<sup>4</sup> Excluding the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol, and part of the area of anti-terrorist operation

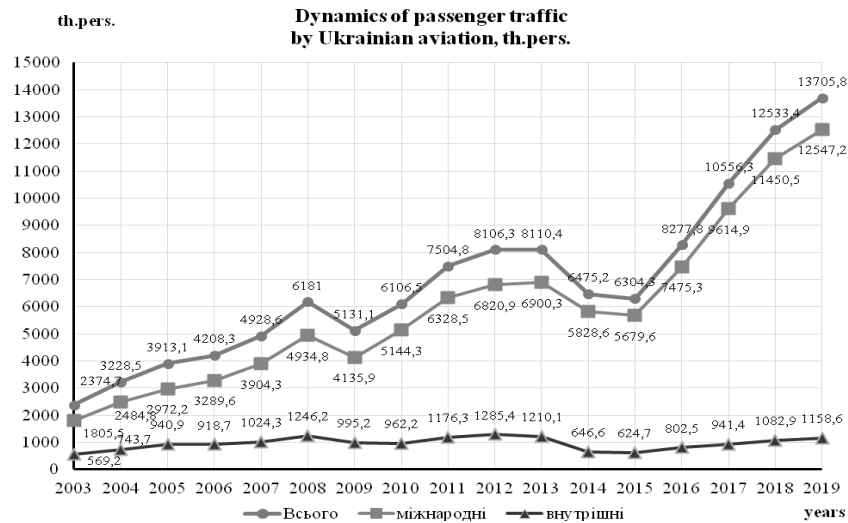


Fig. 1. Volume of passenger transportation by Ukrainian airlines in 2003–2019 [compiled by the authors on [1, 5, 8, 9]]

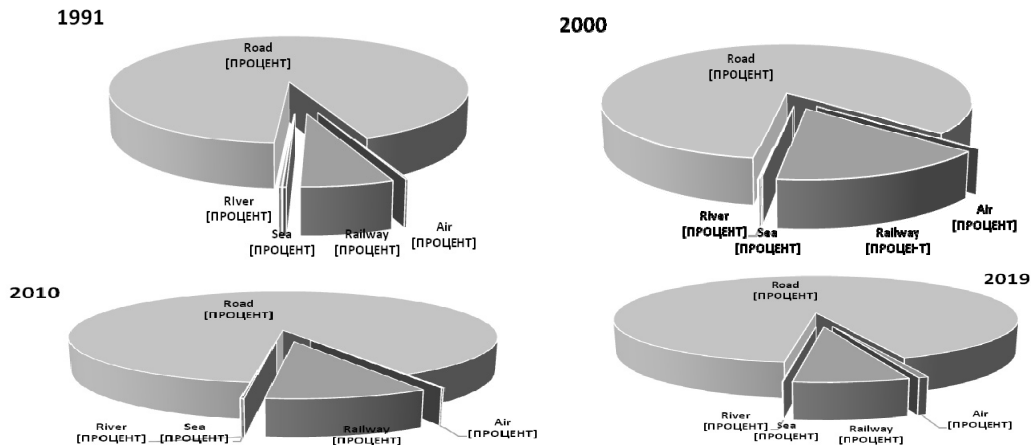


Fig. 2. The share of passenger traffic by different modes of transport for 1991, 2000, 2010, and 2019

The domestic market, at the moment, can be defined as the market for business flights, since tourism in Ukraine is underdeveloped and the population chooses mostly cheaper rail transport.

Accordingly, business travelers and high-income passengers remain the main type of passengers on domestic routes. Further growth in demand will depend on the growth of the country's economy, airline tariff policy, frequency of flights and convenience of connections. However, the gradual growth of the domestic transportation sector should be noted. Regular domestic passenger services between 11 cities of Ukraine were performed by four domestic airlines ("Ukraine International Airlines", "Motor Sich", "Wind rose" and "Skyap"). During 2019 regular flights within Ukraine carried 1145.2 thousand passengers, which is 6.9% more than in the previous year [7].

The significant growth of passenger traffic in the international connection is partly explained by the trends that began in the 1990s [3]. Following Ukraine's declaration of independence, imports of imported goods have increased significantly and demand for travel abroad has grown significantly. Moreover, airlines also tried to stimulate international flights by creating joint packages of tour services with tour operators, which already included the cost of the flight at a reduced price. In addition, international flights are also higher in terms of profitability than

domestic flights, as they are characterized by a longer flight range, higher average speed and aircraft load.

It should also be noted that the transport infrastructure of Ukraine allows to reach any point of the country using terrestrial modes of transport, which are significantly cheaper than aviation. It is no wonder, therefore, that most domestic airlines are focused on international transportation.

Considerable potential for the development of international flights lies directly in the geographical location of the country, which is capable of providing high transit passenger traffic.

The change in the volume of passenger flows was also reflected in the change in the average load factor of aircraft (Fig. 3).

In the last decade, the highest occupancy rate for Ukrainian airlines aircraft seats on domestic airlines was observed in 2018-2019, which coincided with a significant increase in passenger traffic.

The dynamics of traffic of Ukrainian airlines on international scheduled flights is presented on Fig. 4.

The Ukrainian market of passenger air transportation for the first 6 months of 2019 showed a record growth – 20 % compared to the same period last year. This is a record not only in Ukraine but also in Central Europe. About it reports ONLINE.UA with reference to the Polish profile publication pasazer.com [7].

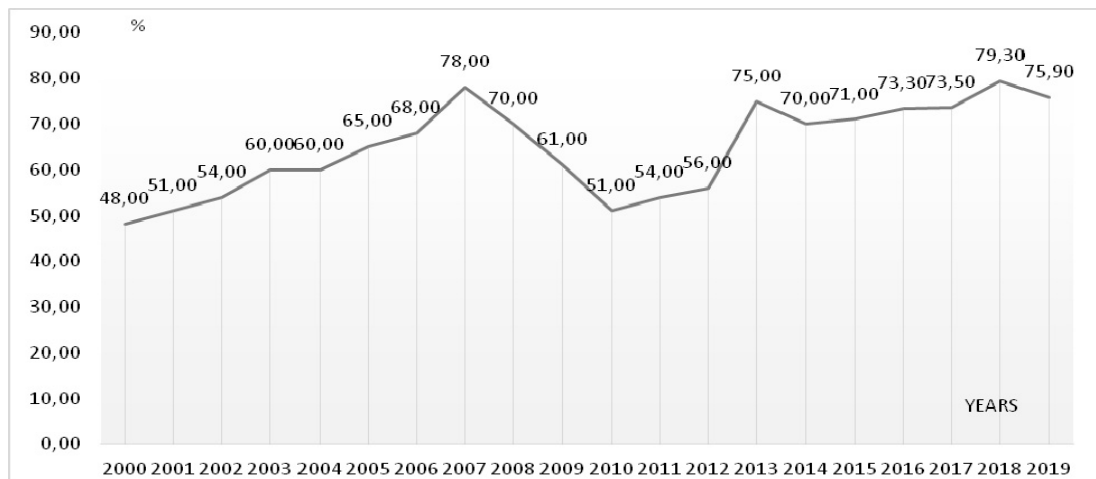


Fig. 3. Dynamics of traffic of Ukrainian airlines aircraft on domestic airlines, % [compiled by the authors on [2, 5]]

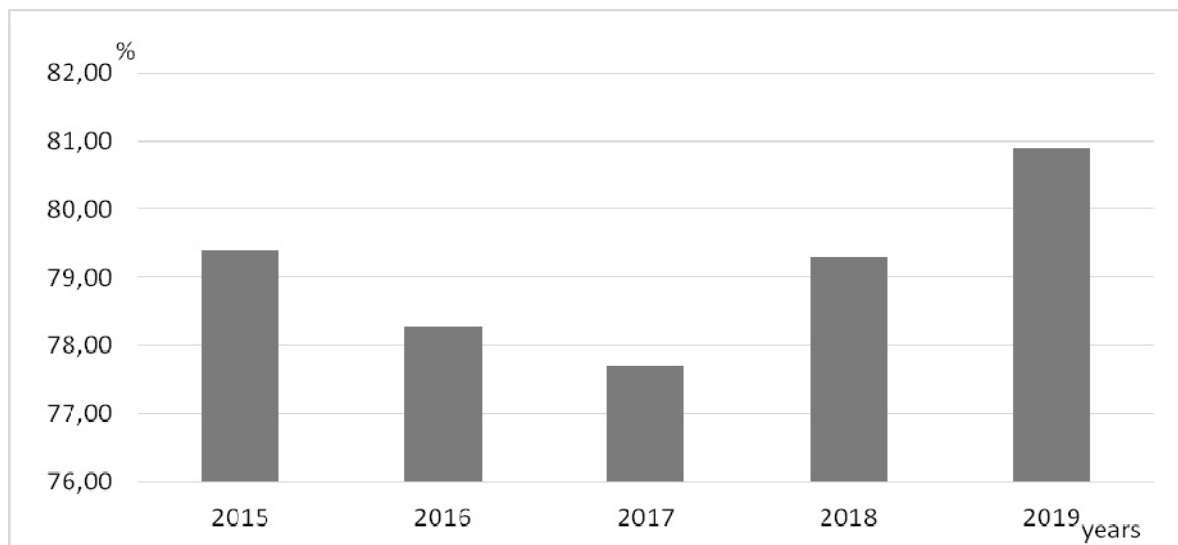


Fig. 4. Dynamics of Ukrainian airline aircraft traffic on international scheduled flights, % [compiled by the authors on [5]]

Analyzing the work of Central European airports, it should be noted that Ukraine was the leader in the growth of passenger traffic. Airports of Ukraine served 10.7 mln passengers in six months, which is 20% more than in the same period last year. In terms of number of passengers carried, Ukraine came second after Poland – 22.3 mln passengers. Romania is in third place with 10.5 mln passengers [7].

The success of Boryspil Airport is largely due to the increase in flights by Irish low-cost Ryanair, which has opened its base in Kyiv and 11 new routes. Flydubai, SkyUp, Lauda and Brussels Airlines have also started flying from Boryspil Airport. 7 more carriers, namely: Windrose Aviation, Swiss, Qatar, air Baltic and Austrian, have significantly expanded the number of flights.

### CONCLUSIONS

The conducted researches allow to conclude that during the years of independence of Ukraine, in the performance of passenger transportation, there is a general tendency to decrease the share of railway transport in favor of road and aviation. In the long run, this could further intensify interspecific competition. However, given the size of the territory and the peculiarities of Ukraine's transport infrastructure, the rapid further growth of the role of

aviation may not only increase the number of low-cost carriers and the development of regional airports, but will also have a limited impact.

### References

1. Gurina G., Podrieza S., Liskovych N. Prospect for forming the export potential of the aviation complex of Ukraine on the basis of public-private partnership. *Eurasian Journal of Analytical Chemistry*. 2010. №13 (3). pp. 665–673.
2. Kyrilenko O., Razumova K., Ihnatiuk V., Novak V. Strategic areas of development the railway industry in the conditions of eurointegration processes. *Financial and credit activities: problems of theory and practice*. 2018. № 25. pp. 332–340.
3. Lytvynenko L., Novak V. Paradigm of airline sustainable development in global competitive environment. *Air transport*. 2014. № 1(93). pp. 34–41.
4. Foreign Economic Activity of Enterprises / A. Stankiewicz-Mroz, et.al. Lodz, 2018. 145 p. URL: [http://repozytorium.p.lodz.pl/bitstream/handle/11652/1944/Foreign\\_econ\\_activ\\_Stankiewicz\\_Mroz\\_2018.pdf?sequence=1&isAllowed=y](http://repozytorium.p.lodz.pl/bitstream/handle/11652/1944/Foreign_econ_activ_Stankiewicz_Mroz_2018.pdf?sequence=1&isAllowed=y)
5. Statistical data in the field of air transport (according to the Ministry of Infrastructure of Ukraine). URL: <https://mtu.gov.ua/content/statistichni-dani-v-galuzi-aviatransportu.htm>. (in Ukrainian).
6. Tykhonova O.Yu. Strategic alternatives for the development of Ukrainian airlines. *Problems of transport economics*. 2018.

Issue 4, pp. 39–44. (in Ukrainian).

7. The Ukrainian air transportation market has set a record in Europe for air transport (according to the Ministry of Infrastructure of Ukraine). URL: <https://novyny.online.ua/811212/ukrayinskiy-rinok-aviaperevezen-vstanoviv-rekord-u-evropi-statistika>. (in Ukrainian).

8. Official site of State Statistics Service of Ukraine. URL: <http://ukrstat.gov.ua>. (in Ukrainian).

9. Official site of the Delegation of Ukraine to the European Union and the European Atomic Energy Community. URL: <http://ukraine-eu.mfa.gov.ua/ukraine-eu/sectoral-dialogue/transport>. (in Ukrainian).

#### **Список використаних джерел**

1. Gurina G., Podrieza S., Liskovych N. Prospect for forming the export potential of the aviation complex of Ukraine on the basis of public-private partnership. *Eurasian Journal of Analytical Chemistry*. 2010. №13 (3). pp. 665–673.

2. Kyrylenko O., Razumova K., Ihnatiuk V., Novak V. Strategic areas of development the railway industry in the conditions of eurointegration processes. *Financial and credit activities: problems of theory and practice*. 2018. № 25. pp. 332–340.

3. Lytvynenko L., Novak V. Paradigm of airline sustainable development in global competitive environment. *Air transport*.

2014. № 1(93). pp. 34–41.

4. Foreign Economic Activity of Enterprises / A. Stankiewicz-Mroz, et.al. Lodz, 2018. 145 p. URL: [http://repozytorium.p.lodz.pl/bitstream/handle/11652/1944/Foreign\\_econ\\_activ\\_Stankiewicz\\_Mroz\\_2018.pdf?sequence=1&isAllowed=y](http://repozytorium.p.lodz.pl/bitstream/handle/11652/1944/Foreign_econ_activ_Stankiewicz_Mroz_2018.pdf?sequence=1&isAllowed=y)

5. Статистичні дані в галузі авіатранспорту (за даними Міністерства інфраструктури України). URL: <https://mtu.gov.ua/content/statistichni-dani-v-galuzi-aviatransportu.html>

6. Тихонова О.Ю. Стратегічні альтернативи розвитку українських авіакомпаній. *Проблеми економіки транспорту*. 2018. Вип. 4. С. 39–44.

7. Український ринок авіаперевезень встановив рекорд у Європі авіатранспорту (за даними Міністерства інфраструктури України). URL: <https://novyny.online.ua/811212/ukrayinskiy-rinok-aviaperevezen-vstanoviv-rekord-u-evropi-statistika>

8. Офіційний сайт Державної служби статистики України. URL: <http://ukrstat.gov.ua>

9. Офіційний сайт Представництва України в Європейському Союзі та Європейському Співтоваристві з атомної енергії (за даними Євростату). URL: <http://ukraine-eu.mfa.gov.ua/ukraine-eu/sector-dialogue/transport>