Growth was retained in the chemical industry on the back of the ongoing development of vacant niches and development of cooperation with friendly countries. Growth is noted in production of not only large-tonnage raw chemical products (mineral fertilizers, caustic soda, ammonia), but also medium- and low-tonnage chemical products with high added value (dyes and pigments, paint and varnish materials, polymeric materials). Maintaining growth will be primarily determined by the change of the key growth factor: transition from "easy import substitution"[1] to the implementation of projects related to the development of production technologies of new materials and chemistry.[2]

Growth continues in metallurgical production and production of other metal products against the backdrop of growing demand for intermediate goods and components for the needs of the military-industrial complex.

Increasing control over compliance with sanction restrictions,[3] the ongoing tight monetary policy and shortage of personnel, including those who meet the market requirements in terms of professional competencies (growth of the working-age population is lower than its drop),[4] create risks of production decline in the industrial sectors of the Russian economy already in early 2025.

3.3. Transportation complex[5]

3.3.1. Trends in the development of the transportation sector

In 2024, despite the continuing pressure from the ongoing international sanction restrictions and new restrictive measures, the transportation industry demonstrated its ability to adapt, stabilize and build logistics supply chains, which is confirmed by the positive dynamics of cargo, freight and passenger traffic volumes. In the freight transportation industry, there is a trend towards the expansion of transportation and logistics services, which was facilitated by the development of transport and warehousing infrastructure. The growth of freight flows is faci-

1. Taking up the vacated market share due to the withdrawal of foreign producers from the Russian domestic market.
2. *Bateneva T.* The National Project "New Materials and Chemistry" is included in the pool of 12 top-priority megaprojects // RG.RU. 06.11.2024. URL: https://rg.ru/2024/11/06/reakciia-vosstanovleniia.html
3. The Path Forward on Energy Sanctions. A Toolkit to Step Up Pressure on Russia in 2025 // The International Working Group on Russian Sanctions. Working Group Paper #21.15.11.2024.
4. The sphere with the most severe shortage of personnel in Russia in Q3 2024 has been named // TASS. 12.10.2024. URL: https://tass.ru/ekonomika/22106395
5. Authors: *Makarov A. V.,* Center for Spatial Economics, IAES RRANEPA; *Ponomarev Yu.Yu.,* Candidate of Economic Sciences, Head of Industrial Organization and Infrastructure Economics Department, Gaidar Institute, Head of Infrastructure and Spatial Studies Department, IAES RANEPA; *Rostislav K. A.,* Researcher at the Infrastructure and Spatial Studies Department, IAES RANEPA; Researcher at the Quantitative Analysis of Economic Effects, Gaidar Institute.

litated by Russia's inclusion in international trade and transport flows: according to preliminary estimates, in 2024, the volume of freight traffic along the Trans-Caspian international transport route (TCITR) increased significantly (by 63% to 4 mn tons).[1] The development of passenger transport is facilitated by the growing demand for transportation services, in particular air services, as well as the growth of transportation efficiency due to an increase in flight hours and passenger seat occupancy.[2] The sector managed to overcome the recession of the previous years and reduce the backlog of transportation workloads from pre-crisis levels.

One of the significant challenges for the transportation sector is the growth of prices and tariffs for transportation services, which exceeds the average growth rate of prices for all goods and services, with insufficient infrastructure development.[3] Further development and growth of transport flows is hindered by the existing deficit of transportation infrastructure, i.e. capacity of railroad and air transport,[4] even taking into account the existing development programs.[5] The transport industry, as well as other industries, in 2024 experienced a shortage of qualified personnel, in particular, specialists in the field of transport engineering,[6] which limits the opportunities for the development of the industry, taking into account the emergence of new technologies.

Special attention is paid to the development of digitalization of the transportation industry. In particular, the development of digital technologies and human resources in the transportation sector and the creation of new quality transportation infrastructure will be among the priority areas in the implementation of the new national projects "Efficient Transport System" ("Transport") and "Infrastructure for Life", which will be launched in 2025 and will succeed the national projects "Safe and Quality Roads" and "Comprehensive Plan for the Modernization and Expansion of Trunk Infrastructure".[7]

In 2024, the National Project "Safe Quality Roads" was completed: a total of 150 thousand km of road network was built and repaired during the implemen-

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1. PortNews. Cargo transportation via TCITR for 11 months of 2024 increased by 63% to 4.1 million tons. URL: https://portnews.ru/news/371565/
2. Vedomosti. GTLK expects air transportation to grow by 6% year-on-year. URL: https://www.vedomosti.ru/business/articles/2024/09/04/1059941-gtlk-ozhidaet-rosta-aviaperevozok
3. RZD-partner.ru Russian Railroads tariff increase from December 1, 2024: How does the market react? URL: https://www.rzd-partner.ru/zhd-transport/comments/povyshenie-tarifov-rzhd-s-1-dekabrya-2024-kak-reagiruet-rynok/
4. Vedomosti. GTLK expects air traffic to grow by 6% year-on-year. URL: https://www.vedomosti.ru/business/articles/2024/09/04/1059941-gtlk-ozhidaet-rosta-aviaperevozok
5. RZG. Eliminating the deficit of railroad infrastructure in Russia will give GDP growth of Rb 2.3 trillion from 2030. — IPEM. URL: https://company.rzd.ru/ru/9401/page/78314?id=215739
6. Vedomosti. Demand for specialists in transport engineering in Russia increased by 23%. URL: https://www.vedomosti.ru/industry/industrial_policy/articles/2024/08/14/1055851-vostrebovannost-spetsialistov-v-transportnom-inzhiniringe-v-rossii-virosla-na-23
7. Transportation in Russia. "Transport of Russia — 2024": afterword. On the Future of Transportation on the Eve of the Start of National Projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-posleslovie-o-budushchem-transporta-nakanune-starta-nacproektov

tation of the National Project,[1] more than 870 thousand road signs and 12 thousand traffic lights were installed, 31 thousand km of roads in urban agglomerations were brought to standard condition, 13.4 thousand units of public transport in the subjects of the Federation were renewed.[2]

3.3.2. Transportation performance in 2024

The share of the transportation sector in gross value added[3] in the three quarters of 2024 amounted to 7.4% (an increase of 0.2 p.p. against 2023). In the structure of the gross value added of the transportation sector, the activities of land and pipeline transportation prevail: this type of activity accounted for approximately two thirds of the total gross value added of transportation.[4] The balanced financial result (profit minus losses) of the organizations of the transport sector (transportation and storage) in January-November 2024 amounted to 1839.6 bn, which is lower than in 2023.[5] The share of profitable organizations in the sector decreased from 71.6% in 2023 to 68.4% in 2024, which is comparable to the figure in 2022 (69.1%).

Cargo traffic activity

Cargo turnover increased in 2024 compared to 2023, although it decreased per unit of GDP (*Fig. 3*).

Ita On the whole, cargo turnover grew by around 0.42% in 2024; however, while the growth for road and rail transportation amounted to 6.6% and for pipeline transportation almost 4.5%, the main contribution to the drop in freight turnover was made by railroad transportation (−4.3%). In January and September, freight turnover at the railroads dropped significantly: −9.3% and −8.6% compared to the corresponding months of the previous year. In January-October 2024, on the contrary, in related industries, there was an increase in business activity: construction (+2.2%), wholesale trade (+7.8%), retail trade (+7.5%), industrial production (+4.4%), manufacturing (+8.1%).

1. Transport of Russia. Over 150 thousand kilometers of road network have been brought up to standards in 6 years. URL: https://transportrussia.ru/razdely/avtomobilnye-dorogi/11842-za-6-let-k-normativam-priveli-svyshe-150-tys-km-dorozhnoj-seti.html
2. Ministry of Transport of the Russian Federation. Over 150 thousand kilometers of road network have been brought to the standards over 6 years. URL: https://mintrans.gov.ru/press-center/news/11649
3. Rosstat. Produced GDP. Quarterly data on OKVED 2 in current prices. URL: https://rosstat.gov.ru/statistics/accounts
4. Ibid.
5. Rosstat. Socio-economic situation in Russia. 2024. URL: https://rosstat.gov.ru/compendium/document/50801

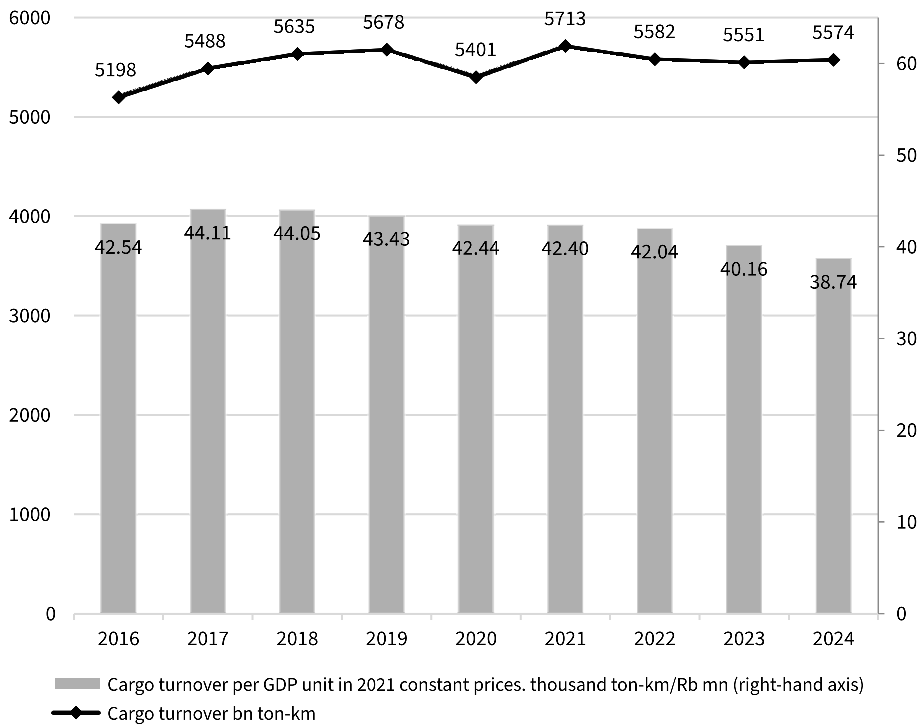


Fig. 3. Cargo turnover dynamic, 2016–2024

Sources: Rosstat, own calculations.

The growth in cargo turnover was due, among other things, to a significant increase in container turnover at seaports[1] and an increase in cargo and mail shipments by Russian airlines, including to foreign destinations,[2] as well as the global trend towards growth in civil aviation cargo turnover.[3] Cargo turnover through the seaports of the Baltic (+1%) and Caspian basins (+5.4%) increased mainly due to increased transshipment of dry cargo, as well as growth in import transshipments.[4]

1. Interfax. Container turnover in Russian ports grew by 11.9% to 4.1 mn TEU in 9 months. URL: https://www.interfax.ru/business/988598
2. Interfax. The government expects air cargo transportation to grow by 15% in 2024. URL: https://www.interfax.ru/russia/984424
3. Infranews. Growth rate of global aviation cargo turnover accelerated to 14.7% in May. URL: https://www.infranews.ru/logistika/65370-tempy-prirosta-gruzooborota-mirovoj-aviatsii-v-mae-uskorilis-i-dostigli-14-7/
4. Interfax. Cargo turnover of Russian seaports decreased by 3.2% in 10 months. URL: https://www.interfax.ru/business/991323

The value of cargo intensity[1] decreased in 2023 and 2024, indicating a relatively more efficient use of transport and an increase in value added to the economy through the transport sector. Despite the slight decrease, cargo turnover remained almost at the same level as in 2022. Relative to 2021, when the domestic economy was recovering from the pandemic and international sanctions had not yet been imposed, cargo turnover declined by 2.43%.

The structure of cargo turnover by types of transportation did not undergo significant changes: the share of railroad transportation slightly dropped, but the share of pipeline transportation grew (*Table 11*).

Table 11

Structure of cargo turnover by type of transport (bn ton-km), 2016–2024

Type of transport	2016	2017	2018	2019	2020	2021	2022	2023	2024*
Railroad	1344	2493	2598	2602	2545	2639	2638	2638	2525
Automobile	248	255	259	275	272	296,7	314	362	386
Pipeline	2489	2615	2668	2686	2470	2653	2515	2423	2532
Maritime	43	50	37	41	43	44	45	69	73
Inland waterway	67	67	66	66	64	71	68	57	56
Air	6.6	7.9	7.8	7.4	7.1	9.2	2.8	1.7	1.9

* Operational data.

Sources: Rosstat, ow calculations.

According to the operational data, the volume of cargo transportation in 2024 increased by almost 4% year-on-year (*Table 12*). The increase in cargo traffic was due to the continued stabilization of logistics supply chains and growth of logistics and transportation services, primarily increased freight traffic by road transport (8.3%). The decrease in cargo transportation volumes affected air (more than 15%) and railroad (more than 13%) transportation.

According to SeaNews statistics, loading of construction cargo (–14%), ferrous metals (–10%) and ferrous scrap (–18%), hard coal (–6%)[2] decreased to a greater extent on the railroad network. Moreover, the negative dynamics accelerated during the year. In September, a record low of 94.5 million tons of loading on the Russian Railroads network was recorded for the month. This is a historical minimum for the last several years. The drop in loading is attributed to various factors, in-

1. Cargo intensity or "burden" of the economy by the transportation operation is the amount of cargo turnover (the sum of products of the weight of each batch of transported cargo by the distance of its transportation) per unit of GDP.
2. Information and analytical agency SeaNews. Russian Railways cargoes, 10 months 2024: minus 4.2% to January-October 2023. URL: https://seanews.ru/2024/11/01/ru-gruzy-rzhd-10-mesjacev-2024-minus-4-2-k-janvarju-oktjabrju-2023/

Table 12

Structure of cargo turnover by type of transport (mn t), 2016–2024

Type of transport	2016	2017	2018	2019	2020	2021	2022	2023	2024 *
Railroad	1325	1354	1411	1395	1359	1404	1351	1365	1184
Automobile	5397	5404	5544	5735	5405	5582	6211	6491	7030
Pipeline	1088	1138	1169	1159	1061	1141	1073	1060	1066
Maritime	25	26	23	23	25	23	28	33	33
Inland waterway	118	119	116	108	109	110	116	109	107
Air	1.1	1.3	1.3	1.3	1.3	1.6	0.7	0.6	0.5

* Operational data.
Sources: Rosstat, ow calculations.

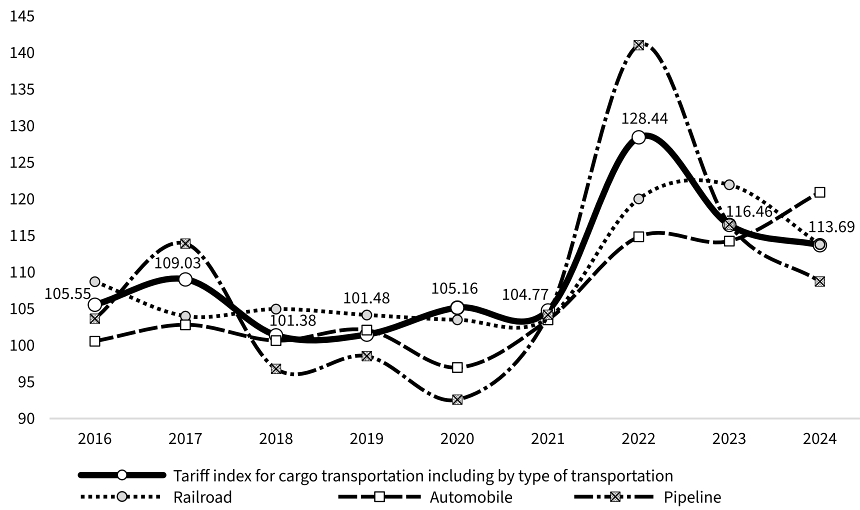


Fig. 4. **Dynamics of tariff index for cargo transportation (consolidated and by mode of transportation) December on December, %**

Sources: UISIS, own calculations.

cluding low export prices for coal with rising costs in the industry, lower volumes of new construction, and tougher sanctions against Russian metallurgy.[1]

There is a tendency in railroad transportation to reduce profitability from the use of railcars due to high interest rates on loans and leasing. Operators are increasingly turning to subleasing railroad equipment.

1. RBC. Loading on the Russian Railroads network showed the largest decline since the beginning of the year. URL: https://www.rbc.ru/business/01/10/2024/66fbf44d9a7947429c318361 (date of reference: 01.02.2025)

At the same time, the production of freight cars of all types, except platforms, increased by 21% year-on-year and reached 54.8 thousand units. The share of innovative railcars with improved characteristics, including those with increased axle loads of up to 25 tons, in the total production volume for the nine months exceeded 27%.

In 2024, the downward trend in the level of tariffs for cargo transportation averaged across all modes of transport continued. In the sector as a whole, cargo transportation tariffs increased by almost 13%, which is lower than the level of the previous two years (*Fig. 4*). However, the growth of cargo transportation tariffs, as before, exceeds the average growth rate of prices for all goods and services (8% in December 2024 to December 2023[1]). For 2024, data as of 1.12.2024 are given.

The main contribution to the growth of tariffs was made by the growth in the cost of road freight transportation: according to the data for H1 2024, the cost of freight transportation rose by 10% on average, and by 20–30% on the most popular routes.[2] The main reasons for the increase in the cost of freight transportation by road in 2024 are the growth of prices for parts, components and fuel, indexation of salaries of personnel and drivers, increase in the amount of lease payments due to the high refinancing rate.[3] In addition, in 2024, the utilization fee for cars was indexed (by 70–85% from October 1), and from February 1, the tariff for heavy-duty vehicles with a permitted maximum weight over 12 tons was increased from 2.84 Rb/km to 3.05 Rb/km on federal highways.[4]

The increase in transportation costs is caused by annual indexation of railroad freight tariffs by 13.8% from December 1, 2024[5] and toll roads from April 23, 2024.[6]

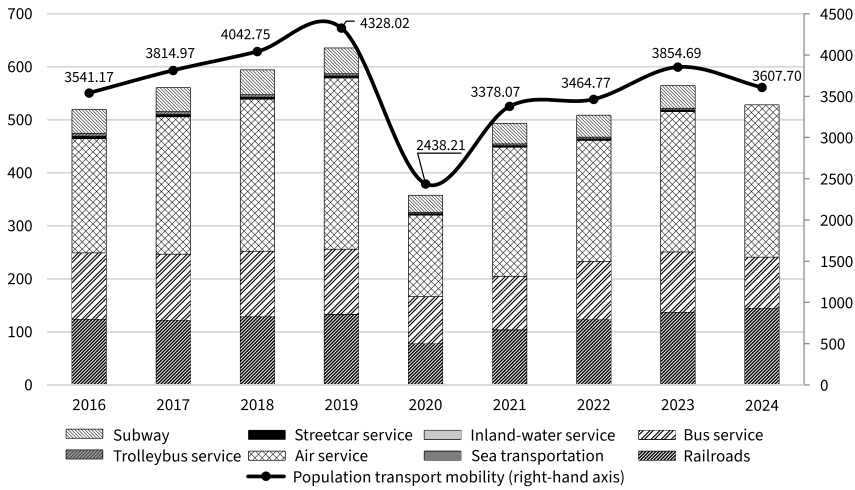
Passenger traffic

According to operational data, in 2024, passenger turnover, excluding streetcar, trolleybus and subway, increased by about 2% year-on-year. The transport mobility of the population within Russia has slightly decreased: about 3608 mn passen-

1. Rosstat. URL: https://rosstat.gov.ru/statistics/price
2. Rossiyskaya Gazeta. Road transportation of goods across Russia has risen by 10%. Will this affect the cost of goods on store shelves?. URL: https://rg.ru/2024/10/08/rost-stoimosti-transportnyh-uslug-v-2025-godu-mozhet-sostavit-do-70.html
3. Alpha Transit. Growth in the cost of road freight transportation in Russia in May 2024. URL: https://alfa-transit.com/rost-stoimosti-avtomobilnyh-gruzoperevozok-v-rossii-v-mae-2024-goda/
4. Ministry of Transport of the Russian Federation. Indexation of the tariff in the “Platon” system contributes to increased funding for the repair of federal highways. URL: https://mintrans.gov.ru/press-center/news/11078
5. RZD Partner.ru Russian Railroads tariff increase from December 1, 2024: How does the market react? URL: https://www.rzd-partner.ru/zhd-transport/comments/povyshenie-tarifov-rzhd-s-1-dekabrya-2024-kak-reagiruet-rynok/
6. Avtodor. Changes in toll rates on toll roads of the state-owned company in April 2024. URL: https://russianhighways.ru/press/news/104107/

gers -km/mn people in 2024 compared to more than 3854 million passengers-km/mn people in 2023 (*Fig. 5*).

An increase in passenger turnover is observed practically for all types of transport. Passenger turnover increased to a greater extent for air (over 8%), inland waterway (over 4%) and railroad (over 5.5%) transportation. A decrease in passenger turnover is noted for maritime (−23%) and bus (−15%) transportation. There were no significant changes in the structure of passenger turnover, but the share of railroad and air transport is increasing. The growth of air passenger turnover is attributed to the increase in demand for air transportation and the efficiency of airlines: in particular, an increase in the frequency of flights and passenger seat occupancy up to 90%.[1]



Note. Transport mobility of the population — ratio of passenger turnover to the average annual number of population (mn passengers/km/mn people); 2024 is represented by operational data excluding streetcar, trolleybus and subway.

Fig. 5. **Structure of passenger traffic by types of transportation, (bn passengers/kilometers), 2016–2024**

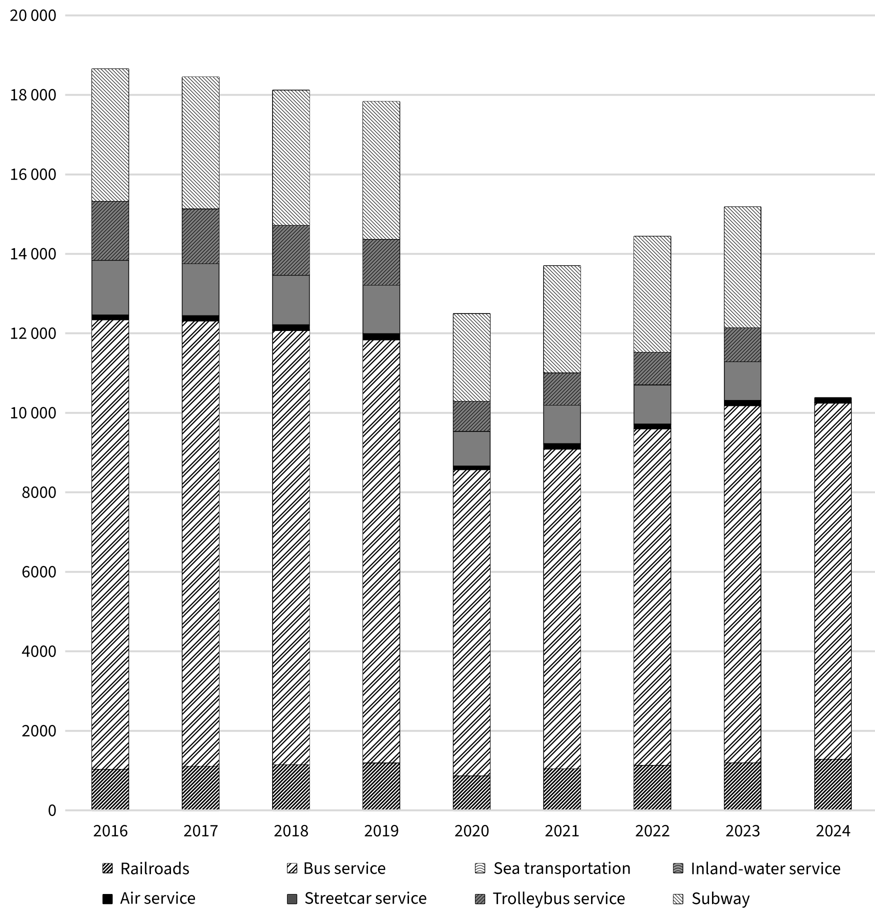
Sources: Rosstat, ow calculations.

The main contribution to the growth in passenger transport was made by railroad (+7%), inland waterway (+6.5%) and air service (+4.6%). By the end of 2024, it is expected that 1.275 bn passengers[2] will be transported by Russian railroads

1. Federal Air Transport Agency. Passenger traffic of Russian airlines increased by 4.8% in September. URL: https://favt.gov.ru/novosti-novosti/?id=13328
2. Moscow City News Agency. Russian Railroads exceeded the volume of passenger traffic in 2024. URL: https://www.mskagency.ru/materials/3439289

and 110 mn passengers (including 86 mn domestic passengers) by air,[1] which exceeds the figures for 2023.

The volume of passenger services by sea transport decreased significantly (−43%) due to a reduction in the number of passenger vessels, including foreign cruise companies, serviced at seaports and marine passenger terminals. The main share in the passenger service structure is accounted for by bus transport — 86% of the total volume of passenger services (excluding streetcar, trolleybus and subway) (*Fig. 6*).



Note. 2024 is represented by operational data excluding streetcar, trolleybus and subway.

Fig. 6. **Passenger traffic pattern by types of transport (mn passengers), 2016–2024**

Sources: Rosstat, ow calculations.

1. TASS. The Ministry of Transport confirmed the forecast of air service in 2024 in the volume of more than 110 mn people. URL: https://morvesti.ru/news/1679/108104/

3.3.3. Challenges and problems of the transportation complex, prospects for the development of transportation infrastructure and rolling stock

Two basic national projects affecting the transport sector — "Efficient Transport System" and "Infrastructure for Life" — are planned to be launched in 2025, with more specific federal projects (9 projects and 7 projects, respectively) aimed at the development of different types of transport. Among the main objectives are:[1]

— Raise the volume of shipments via international transport corridors by 1.5-fold compared to 2021.

— Raise the aviation mobility of citizens by 50%, which will require modernization of at least one third of the airport infrastructure, at least 75 airports.

— Ensure the road network is at least 85% in standard condition in urban agglomerations and 60% for regional roads.

— Raise the share of public transport with a standard service life to 85% in cities and agglomerations.

Railroads services

Among the priorities for the development of the railroad sector are such areas as the development of the Eastern polygon of railroads, modernization of the BAM and Trans-Siberian Railway. The goal is to increase their carrying capacity from 180 mn to 210 mn tons by 2030, and further to 270 mn tons by 2032.

The most important event in terms of railroad transport development in 2024 was the start of construction of the Moscow-St. Petersburg high-speed line (HSL). According to plans, the launch of the new transportation link should begin in 2028, according to the forecast, the trip will take 2 hours 15 minutes versus about 5.5 hours using high-speed "Sapsan".[2] In addition, it is planned to significantly increase transport accessibility of other cities on the high-speed rail line, so the route Tver — Moscow will take less than 40 minutes. The speed on the High-Speed Railway should be up to 400 km/hour. At present, no roads of this format have been built in Russia yet.

According to forecasts, significant economic effects from the project realization are expected.[3] Thus, the increase in output in the industrial sector may grow by Rb 1.5 for each ruble invested in the HSL, the increase in budget revenues as a re-

1. Transportation in Russia. "Transport of Russia — 2024": afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-poslesiovie-o-budushchem-transporta-nakanune-starta-nacproektov
2. Moscow — St. Petersburg high-speed line to be launched in 2028. URL: https://mperspektiva.ru/topics/skorostnuyu-zh-d-magistral-moskva-sankt-peterburg-zapustyat-v-2028-godu-/
3. Transport in Russia. "Transport of Russia — 2024": afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-poslesiovie-o-budushchem-transporta-nakanune-starta-nacproektov

sult of the project (according to the methodology of Decree No. 1512)[1] may reach Rb 2.7 trillion, and GDP growth may exceed Rb 10.5 trillion.

At the same time, plans were announced to continue this experience, namely, the construction of additional high-speed lines Moscow — Nizhny Novgorod — Kazan — Yekaterinburg, Moscow — Rostov-on-Don — Adler, Moscow — Minsk, Moscow — Ryazan.

However, it should be noted that even according to the official plans of the "High-Speed Line Dve Stolitsy" LLC, the Moscow-St. Petersburg High-Speed Line project is expected to reach payback only by 2045. The costs of the High-Speed Line can amount to more than Rb 2.35 trillion, which is almost twice as much as the annual budget of the city of St. Petersburg.[2] It was noted that in the regions — participants of the High-Speed Line project there was a discussion about the sharing of contributions for construction, taking into account the risks that the High-Speed Line will not be as popular with passengers as it is planned.[3]

It seems that in modern socio-economic environment such substantial costs for the HSL (and especially for the planned HSL to other cities) require additional study, taking into account the possibilities of alternative use of public funds with a shorter payback period and greater social significance. At the same time, an important task is expert study and public discussion of not only the feasibility of the costs of the High-Speed Line, but also the feasibility of the selected routes, taking into account the opinion of residents and minimizing the damage to the right holders when seizing land plots for the needs of the High-Speed Line, for ecosystems on the route, etc.

Highway transport

In 2024, the problem of labor shortage in the transport sector, primarily in public transport in cities and major agglomerations, worsened.

Associations in the field of transport (Association of International Road Carriers (ASMAP), Association of Transport Experts and Specialists (APEC)) emphasize that the shortage of drivers reaches critical values and is worsening.[4] It is noted

1. Assessments within the framework of the Russian Government Decree No. 1512 dated 26.11.2019 "On Approval of the Methodology for Assessing the Socio-Economic Effects of Projects for the Construction (Reconstruction) and Operation of Transport Infrastructure Facilities Planned for Implementation with the Attraction of Federal Budget Funds, as well as with the Provision of State Guarantees of the Russian Federation and Tax Benefits".
2. Fontanka. The full cost of the Moscow — St. Petersburg HSL is known. URL: https://www.fontanka.ru/2024/11/20/74356223/
3. Fontanka. He who does not risk, does not travel along the High-Speed Line. The high-speed line from St. Petersburg to Moscow scares Tver and not only. URL: https://www.fontanka.ru/2025/02/03/75062210/
4. Business Quarter. The average age of drivers is 50 years old, car fleets are idle. Carriers have declared a crisis. URL: https://www.dk.ru/news/237194097

that by 2030 the shortage of personnel can reach 40%, the average age of a driver exceeds 50 years and is growing, there is a shortage of new personnel, according to APEC estimates, the shortage of drivers already reaches 400 thousand people.

The shortage has many reasons, including alternative income opportunities. Thus, according to some estimates, in H1 2024 the wages of truck drivers increased by 74% and exceeded Rb 130,000.[1] At the same time, wages in the economy as a whole increased: according to the results of the first half of 2024, the average wage increased to more than Rb 80,000, i. e. by 12%.[2] In this situation, public transport (largely financed by the state, unlike commercial freight transportation) should offer a comparable increase in wages for drivers, which is not always possible.

An additional factor is related to the turnaround of the state policy in the sphere of migration in 2024, when restrictions on the recruitment of foreign labor (both formal legislative and applied in practice) began to tighten. As a result, many regions, when deciding to ban the hiring of migrants, primarily banned such work in the areas of public transport and cabs.[3] According to experts, this may further aggravate the shortage of personnel.[4] In this situation, it seems natural that the authorities of some of the largest agglomerations, such as Moscow, are in no hurry to introduce such restrictions.[5] For example, according to the data of 2022, about 27% of migrant drivers worked in Moscow cabs, and out of 220,000 drivers, most of the foreigners were natives of Kyrgyzstan (almost 45,000 people).[6] This raises the problem of finding an optimal balance: on the one hand, it is necessary to reduce dependence on foreign labor, on the other hand, it is necessary to ensure balanced growth of the economy by developing human resources and increasing labor productivity.

Public transport is facing an important task of bus fleet renewal. Thus, at the State Council meeting in late 2024,[7] the need to renew the fleet by more than 57,000 buses was discussed, which means the need to maintain a renewal rate of almost 9,500 buses per year. By the end of 2024, it is expected that more than 13,000 units of public transportation, including more than 12,000 buses, will be renewed com-

1. Transportation in Russia. “Transport of Russia — 2024”: afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-posleslovie-o-budushchem-transporta-nakanune-starta-nacproektov
2. The average salary in Russia for the first time exceeded Rb 80,000. URL: https://www.banki.ru/news/lenta/?id=11006938
3. Parliamentary Gazette. Cabs, catering, trade: Where migrants will be banned from working. URL: https://www.pnp.ru/politics/taksi-obshhepit-torgovlya-gde-zapretyat-rabotat-migrantam.html
4. Expert: Banning migrant work in transportation will end in disaster. URL: https://www.gazeta.ru/social/news/2024/10/15/24155323.shtml?updated
5. Moscow authorities are not going to limit the work of migrants in cabs for the time being. URL: https://www.interfax.ru/moscow/1000832
6. Moscow Department of Transport named the share of migrants among cab drivers. URL: https://www.rbc.ru/society/04/08/2022/62eb77d79a7947993951ee34
7. Transportation in Russia. “Transport of Russia — 2024”: afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-posleslovie-o-budushchem-transporta-nakanune-starta-nacproektov

pared to 2020, with another 300–400 units accounted for by trolleybuses, streetcars, and electric buses. Thus, a significant increase in renewal rates is required to implement the plans.

In 2024, the situation in the cab sector is not easy. It is noted that the cost of cab fares could rise by at least 25–50% during the year, and in 2025 prices are expected to rise by another 50%.[1] The main reasons are related not only to the shortage of drivers, rising costs of fuel and spare parts, but also to the complicated terms of state regulation, introduced by the legislation on cabs (No. 580-FZ).[2] Experts point out that pre-trip medical examinations and technical inspections, multiple price increase of MTPL policy for cabs, introduction of additional insurance of civil liability of the carrier (OSGOP) have significantly raised the costs of firms in the cab industry. In a situation of low demand, this leads to the withdrawal of companies from the market or the emergence of illegal services. For example, in the Sakhalin region the register of carriers has shrunk by more than 50%, mostly small participants and individual entrepreneurs remain. Some experts warn that if the situation develops unfavorably, official cab services may cease to be available in the regions, except for the largest agglomerations. An additional increase in the price of cab services is possible if the initiative to allow only Russian cars to be used in cabs is adopted. RSPP and the Self-Employed Association of Russia note that this step may lead to additional shortages in the cab industry, given the difficulties for the self-employed to meet this criterion.[3] In the current situation, it seems important to work out support measures for cabs, including reduction of fees and liberalization of industry legislation.

The modernization of public transport has led to a significant digitalization of fare payment methods. While in 2019 the share of cash payment was sometimes almost half of payments, in 2024, for example, in the Rostov region, it has been reduced to less than 10%.[4] Different forms of payment are used, including bracelets, QR codes, and bank cards. In this regard, measures should be developed to preserve the right of citizens (including tourists) to pay in cash, so that the lack of the appropriate instrument does not lead to the inability to use public transportation.

The process of construction and repair of highways continues apace. Thus, in 2024, more than 22,000 km of highways were built and reconstructed with federal co-financing alone, and in 6 years, according to the Deputy Prime Minister M. Khus-

1. Gazeta.ru. Cab fares are set to rise by 50% this year. We found out why. URL: https://www.gazeta.ru/auto/2025/02/28/20630612.shtml
2. Federal Law "On Organization of Passenger and Baggage Transportation by Passenger Taxi in the Russian Federation, on Amendments to Certain Legislative Acts of the Russian Federation and on Annulment of Certain Provisions of Legislative Acts of the Russian Federation" of 29.12.2022 No. 580-FZ.
3. Gazeta.ru. Russia warned of rising prices for cab services due to the initiative of the authorities. URL: https://www.gazeta.ru/business/news/2025/02/28/25199804.shtml
4. RBC. The share of cashless payment in Don's buses amounted to more than 90% in 2024. URL: https://rostov.rbc.ru/rostov/freenews/674eebe59a79477fa5cbe122

nullin, more than 150 000 km of roads were built and reconstructed.[1] However, active road construction requires greater consideration of public opinion and environmental risks, including the fundamental importance of avoiding fragmentation of ecosystems when dissecting them by roads.[2] As an example, in 2024, there was a heated discussion about the construction of a road through Losiny Ostrov to Korolev in the Moscow region. Many residents and environmentalists opposed this option, noting that such a road (1 lane per entrance) would not solve the problem of traffic jams in Korolev, but would cause significant damage to the ecosystem of Losiny Island by cutting off its northern part.[3]

There are mixed trends in the transition to the use of alternative energy vehicles, in particular electric vehicles. Firstly, the global market of electric vehicles was forecasted to grow by 21% in 2024, which is significantly lower than the growth rate in 2023 (33%), which was also associated with the reduction of subsidies.[4] In Russia, a similar trend was noted: in the first 9 months of 2024, electric car purchases grew by 60%. However, for comparison, the previous year's growth was a record 4.7-fold. Lack of charging infra-structure (about 7 thousand stations in Russia), service and repair centers become constraining factors. Stricter regulation also limits the development of electric vehicles, for example, from April 1, 2024, the preferential customs clearance of such vehicles via the EAEU countries[5] was restricted; according to some estimates, this could save up to 30% on imports. Starting from January 1, 2025, it is planned to increase the utilization fee by 20 times, which may increase the price of electric cars by another Rb 0.5 mn.[6] In Russia, as in the rest

1. Transportation in Russia. "Transport of Russia — 2024": afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-posleslovie-o-budushchem-transporta-nakanune-starta-nacproektov
2. *Marshalkovich A. S., Afonina M. I.* Ecology of urban environment: a course of lectures. M.: NRU MGSU, 2016: *Primark R.* Fundamentals of biodiversity conservation. M.: Publishing house of the Scientific and Training and Methodological Center, 2002.
3. Expert Council on Reserved Forest. Construction of a highway through the national park "Losiny Ostrov": The position of the Expert Council on Reserved Forests. URL: https://zapovedcouncil.ru/stroitelstvo-avtodorogi-cherez-naczionalnyj-park-losinyj-ostrov-pozicziya-ekspertnogo-soveta-po-zapovednomu-delu/

   Members of the Expert Council criticized the planned road through "Losiny Ostrov" at a round table in the Public Chamber of the Russian Federation. URL: https://dront.ru/news/2024/03/29/chleny-ekspertnogo-soveta-raskritikovali-planiruemuyu-dorogu-cherez-losinyj-ostrov-na-kruglom-stole-v-obshhestvennoj-palate-rf/

   Scientists have proposed an alternative to the new highway through "Losiny Ostrov" to Korolev. URL: https://tass.ru/obschestvo/20081675
4. Schrödinger's electric car: Why demand for electric cars in Russia is both growing and falling at the same time. URL: https://78.ru/articles/2024-10-31/elektrokar-shredingera-pochemu-spros-na-elektromobili-v-rf-i-rastet-i-padaet-odnovremenno
5. Beginning April 1, drivers are in for some significant changes. List. URL: https://rucars.ru/vvoz-elektromobiley-v-rossiyu
6. "The pointlessness of these efforts is impressive." Automotive journalist — on the collapse of the electric car market in Russia. URL: https://74.ru/text/auto/2024/08/15/73932863/

of the world, hybrid vehicles, which can run on both gasoline and electricity, are increasingly recognized by users; they already account for almost half of electric vehicles in the country.

Air service

At the end of 2024, according to the estimates of the State Transport Leasing Company (GTLC), air passenger traffic is expected to grow to 112 mn people, which will mean a 6% growth compared to the previous year.[1] It should be noted that while the volume of transportation within Russia remains higher (84 mn) with a low growth rate (1%), a significant growth of 25% is expected on international flights, which means a recovery in tourist travel.

In terms of international travel, Turkey has traditionally remained the most popular destination (more than 5 million trips in January-September 2024 alone, an 11% increase), with significant growth in flights to a number of eastern countries. For example, during the same period, the number of flights to China increased by more than 120% (up to 1.36 mn), almost 30%—to Thailand, it should also be noted that air traffic to Georgia increased by 20%.[2]

The main problems in the industry turned out to be related to the shortage of aircraft; with a virtual absence of new aircraft arrivals and a shortage of spare parts for foreign used aircraft, airlines are facing an increasing dependence on equipment breakdowns. This forces air carriers to turn to domestic aircraft, including the reuse of previously mothballed aircraft, resulting in the share of Russian aircraft almost doubling to 11% between 2019 and 2024.[3]

Large-scale projects to subsidize air traffic remain in place, taking into account the need to ensure accessibility of remote areas, including those with low incomes of local residents. Thus, only within the framework of Decree No. 1242 of 25.12.2013 there were about 300 routes in the register of subsidized routes, and their total number reached 400 at the federal level. Only at the beginning of 2024, 28 more routes were added,[4] and the number of subsidized passengers by the end of the year is projected at 4 mn people. At the same time, there is a slight decrease in government funding, with Rb 27 bn allocated for subsidies in 2022 and Rb 25 bn in 2024.

In order to implement the goals of the national projects in 2024, the modernization of regional airports continued, both in terms of increasing the number of inter-

1. GTLC expects air transportation to grow by 6% year-on-year. URL: https://www.vedomosti.ru/business/articles/2024/09/04/1059941-gtlk-ozhidaet-rosta-aviaperevozok
2. Which countries Russians are traveling to in 2024. Infographics. URL: https://www.rbc.ru/business/10/11/2024/672e04f09a7947a61591aaeb
3. GTLC expects air transportation to grow by 6% year-on-year. URL: https://www.vedomosti.ru/business/articles/2024/09/04/1059941-gtlk-ozhidaet-rosta-aviaperevozok
4. Flying mood: The government will support air transportation. URL: https://iz.ru/1803453/lubov-lezneva/letnyi-nastroi-pravitelstvo-podderzit-vozdusnyi-transport

national flights and increasing the connectivity of Russia's regions to provide direct flights between cities without transferring to Moscow or other major agglomerations. One example is the modernization of the Tolmachevo airport in Novosibirsk. Interestingly, a group of investors was formed for this modernization (Novaport, S7 Airlines, and the Novosibirsk Region Government), and the first special investment contract (SPIC) in this area was signed, providing substantial benefits for investors to stimulate technological modernization. As a result, the airport's passenger traffic in 2023 was twice as high as in 2017.

Sea and inland waterway transport

One of the priorities in the sphere of water transport in 2024 was the development of the Northern Sea Route (NSR), which can connect Russia's western ports with eastern ports, up to Vladivostok, and further facilitate trade with eastern countries. According to estimates, cargoes can be delivered twice as fast through the NSR as through the Suez Canal; cargo traffic has already reached more than 40 mn tons and is expected to reach 100 mn tons by 2030.[1] However, successful year-round development of the NSR requires an increase in the icebreaking and rescue fleet, as well as improvement of safety and navigation infrastructure. In the meantime, it is noted that the NSR is more focused on the export of minerals (LNG, nickel) and has not become a basic cargo transportation route.[2]

Measures were taken to develop inland water transport, which is increasingly in demand, including in terms of cruise transportation in the context of declining international tourism. Thus, according to the estimates of the Ministry of Transport, in the first nine months of 2024, passenger transport volumes went up by almost 14% (10.5 mn people) and cargo transportation by more than 2.5% (more than 83 mn tons).[3] At the same time, domestic passenger transport is considered as a subject of federal support, which is provided in different formats. On the one hand, funds are invested in the reconstruction of navigable hydraulic structures (Bagaevsky and Gorodets hydroelectric installations), on the other hand, VAT benefits for carriers have been introduced, and 12 subsidized routes have been proposed for the main river system — the Volga River.

The first assessments in 2024 showed the success of such subsidization: while the federal budget expenditure amounted to about Rb 49 mn, the budget revenu-

1. Transportation in Russia. "Transport of Russia — 2024": afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-poslesiovie-o-budushchem-transporta-nakanune-starta-nacproektov
2. The Northern Sea Route is still more of a transit route for fossils than a cargo export route. URL: https://www.interfax.ru/russia/1000634
3. Transportation in Russia. "Transport of Russia — 2024": afterword. On the future of transportation on the eve of the start of national projects. URL: https://tr.ru/articles/5735-transport-rossii-2024-poslesiovie-o-budushchem-transporta-nakanune-starta-nacproektov

es from tourists and operators reached Rb 93 mn. Measures were also taken to simplify the procedure for registration of vessels for river transport. Prospects for deepening the integration of river transport into the cargo transportation system are also discussed. Thus, the Sviyazhsky multimodal logistics center[1] was opened, which provides simultaneous operation of 13 vessels (with the possibility of access to the Baltic, Caspian and Black Seas), integration with railroads with the ability to use up to 1,500 cars per day. If the appropriate infrastructure is created, this kind of cargo river transportation may allow to reduce costs compared to both rail and road transport.

In terms of foreign trade, it is necessary to note the role of new sanctions against the so-called "shadow fleet". This is a fleet that through the use of intermediary firms allows the sale of oil and oil products to third countries, bypassing the restrictions and sanctions adopted by the G7 countries. As a rule, the shadow fleet consists of old ships (older than 15 years) with anonymous owners. Initially, such ships transported the oil of Venezuela and Iran, which were under sanctions.

Western countries have recently tightened their sanction regime, including against ships (including Sovcomflot), insurance companies (Ingosstrakh, AlfaStrakhovanie), oil traders, and individuals. By the beginning of 2025, The US imposed sanctions against more than 180 tankers, Britain — against more than 130 tankers,[2] the EU expanded the list by 74 positions, increasing it to 153 vessels.[3] However, the consequences of the fight against the shadow fleet are not obvious. On the one hand, experts note that the tightening of the policy leads to an increase in costs and discounts when selling Russian oil.[4] On the other hand, sanctions have not led to the complete destruction of the shadow fleet. According to estimates as of November 2024, the shadow fleet accounted for about 17% of the global oil transportation tonnage (more than 100 mn tons).

Pipeline transport

As far as pipeline transport is concerned, the focus has traditionally been on the dynamics of gas and oil supplies. On the one hand, in 2024 Gazprom raised gas production by more than 60 bn cu m to 416 bn cu m, while setting a new record of gas supply through the Unified Gas Supply System — 1 bn 815 mn cu m per day.[5] On

1. Marine News of Russia. The Sviyazh Multimodal Logistics Center was opened in Tatarstan. URL: https://morvesti.ru/news/1679/111090/
2. London added 40 tankers from the "shadow fleet" to sanction lists against Russia. URL: https://www.interfax.ru/business/1010557
3. EU added 74 tankers from "shadow fleet" to sanction lists. URL: https://www.interfax.ru/business/1010475
4. Why sanctions are powerless against Russia's shadow fleet. URL: https://paluba.media/news/183224
5. Gazprom increased gas production by 61 bn cubic meters in 2024. URL: https://www.vedomosti.ru/economics/news/2024/12/26/1083989-gazprom-uvelichil-dobichu

the other hand, there are problems of rising production costs and falling profits from gas sales. For example, Gazprom's loss for the first nine months of operations exceeded 309 bn rubles, while revenues grew by 8%, while production costs rose by 13%.[1] Due to the sanctions regime, gas supplies to European countries decreased. In 2023, about 45 bn cubic meters were supplied. For comparison: in 2018, supplies reached more than 200 bn cubic meters. This is compensated by supplies to China, but it is noted that, according to the agreements, China will buy gas at a price 28% lower than European consumers in the coming years.[2]

As for oil supplies, despite the imposed sanctions, production and supplies remain generally stable. Thus, according to official forecasts, oil exports in 2024 were expected to reach 240 mn tons, compared to 238 mn tons in 2023. 233.5 mn tons are planned for 2025. The sanctions and reduction of oil supplies to Europe are compensated for by increasing trade relations with India and China. Thus, as early as in 2023, exports to India increased 2.6 times to almost 82 mn tons, and in January-October 2024 oil supplies from Russia increased by another 8.1%. In the area of cooperation with China, in 2023 supplies rose to 107 mn tons, making Russia the largest supplier; moderate growth in supplies continued in 2024 as well.[3] At the same time, Europe is actively buying petroleum products from India and China, which are largely produced from the Russian crude oil.

3.4. Food security and agricultural sector in 2024[4]

3.4.1. Integral food security index

Considering the main components of food security (availability and resilience of production; economic and physical access to food; food security), the situation in Russia on the eve of 2024 was not alarming.

Thus, back in 2023, the integral indicator of food security improved[5] after a number of years of steady decline (*Fig. 7*). While the downward trend until 2023 has been shaped mainly by deteriorating economic availability and high volatility of food prices, in 2023 economic availability improved due to lower volatility of food prices

1. Gazprom's parent company's loss under RAS amounted to Rb 309 bn in 9 months. URL: https://www.interfax.ru/business/989213
2. Bloomberg has learned of a discount of up to 28% on Russian gas for China until 2027. URL: https://www.forbes.ru/biznes/511103-bloomberg-uznal-o-skidke-do-28-na-rossijskij-gaz-dla-kitaa-do-2027-goda
3. What 2024 was like for the Russian oil and gas industry. URL: https://www.vedomosti.ru/analytics/trends/articles/2024/12/23/1083310-kakim-bil-2024-god-dlya-rossiiskoi-neftegazovoi-otrasli
4. Authors: *Shagaida N. I.*, Doctor of Economic Sciences, Head of the Center for Agricultural Policy IAES RANEPA; *Ternovsky D. S.*, Doctor of Economic Sciences, Leading Researcher, Center for Agricultural Policy IAES RANEPA.
5. The results obtained as part of R&D RANEPA 2024. Developing approaches to calculate an integral indicator of food security status of the Russian Federation and RF regions.