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The review “Russian Economy. Trends and Outlooks” has been published by the Gaidar Institute since 1991. This is the 44th issue. This publication provides a detailed analysis of main trends in Russian economy, global trends in social and economic development. The paper contains 5 big sections that highlight different aspects of Russia’s economic development, which allow to monitor all angles of ongoing events over a prolonged period: the monetary and budget spheres; financial markets and institutions; the real sector; social sphere; institutional changes. The paper employs a huge mass of statistical data that forms the basis of original computation and numerous charts confirming the conclusions.

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Russian transportation complex in 2022:

3.4.1. New challenges and new tasks

The transportation complex is a key branch of the Russian economy, its most important connecting element. The development of traffic infrastructure is one of the main factors of economic growth and an important tool for overcoming the economic crisis. New economic environment has highlighted the need to ensure the stable operation of transport and logistics. Priority areas for the transportation complex in 2022 are adaptation to changes in the economy and overcoming of the sanctions challenges, promotion of import substitution, technological independence and restorative growth of the transportation sector. The key objectives of the transportation sector are always to support the connectivity of the country's territory and increase the population mobility.²

- 1 Authors: *Yu.Yu. Ponomarev*, Candidate of Economic Sciences, Head of the Infrastructure and Spatial Studies Department, IAES RANEPА; *Rostislav K.A.*, Researcher at the Infrastructure and Spatial Studies Department, IAES RANEPА.
- 2 Mikhail Mishustin participated in the 16th International Forum "Transport of Russia" // RF Government. URL: <http://government.ru/news/47042/>

In 2022, the transportation industry faced unprecedented sanctions challenges affecting all modes of transport, especially their international activities. The restrictions on the full operation of transport in 2022 were not only directly related to the transportation industry, such as reciprocal bans on cargo transportation within countries and entry into seaports, the closure of airspace, but also foreign trade sanctions, which led to the termination of exports to EU countries, a decrease in imports of machinery, equipment and components to Russia. As a result, established supply chains have been disrupted, and the main foreign trade flows of goods have been reoriented from European markets to the Middle East and Asia. According to first estimates, the total losses of the transportation industry in Russia due to the decline in exports of transport services will amount to \$5 bn, which, however, does not include the costs associated with the restructuring of supply chains.¹

Despite the decrease in freight turnover and cargo volume, according to incomplete data available for 2022, the indicators of the volume of total freight services decreased to a lesser extent than in the 2020 pandemic year.² This was facilitated by the reorientation of passenger and freight flows, including transit flows, to the eastern direction and the increase in the volume of haulage services within the country. Air traffic accounted for the largest drop in the transportation operations in 2022. In contrast, the total volume of passenger turnover and passenger traffic increased slightly compared with the corresponding period in 2021.

To mitigate the impact of sanctions and their consequences on the transportation industry and maintain the availability of transportation within the country, comprehensive measures have been taken to support air and rail carriers, transport leasing companies, businesses and employees temporarily idle due to the suspension of transportation operations.

In addition to new challenges, the transport industry faces old problems, such as bottlenecks and insufficient infrastructure capacity and throughput, falling rail freight rates, aging public transportation infrastructure, insufficient in-house fleet, and high transportation tariffs.³ Particular attention is now paid to the implementation of digital solutions in the transportation sector, in particular, the promotion of the transition to domestic software development⁴ (for example, domestic automated systems of registration of air traffic⁵ and

1 International consignments will get support // Maritime news of Russia. URL: <http://www.morvesti.ru/analitika/1691/96191/>

2 On the current situation in the Russian economy // Ministry of Economic Development of Russia. December 2021 – January 2022 URL: <https://www.economy.gov.ru/material/file/6211dc39795bea0da2120d1d8df9d646/20220209.pdf>; On the current situation in the Russian economy // Ministry of Economic Development of Russia. October 2022. URL: https://www.economy.gov.ru/material/file/a9f9be41aeb4681259708168ff7119a78/2022_11_30.pdf

3 Transportation bottlenecks will be liquidated at the expense of the budget // Nezavisimaya Gazeta. URL: https://www.ng.ru/economics/2022-11-15/4_8590_problems.html

4 Chernyshenko D. The transportation industry allocates almost Rb20 bn for the creation and replacement of imported software. URL: <http://government.ru/news/47045/>

5 All domestic airlines have completed the transition to Russian reservation systems // RF Transportation Ministry. URL: <https://mintrans.gov.ru/press-center/news/10467>

software for the aggregation of meteorological data¹). At present, the projects “Green Digital Passenger Corridor” (movement of passengers between regions by various types of transport without presenting documents and paying in cash) and “Free Flow” (nonstop passage of cars on toll roads equipped with fare recording devices) are being implemented. Automated transportation data transmission and exchange systems are also being developed: in 2022, the Agreement on the Use of Navigation Seals in the Territory of the EAEU for Tracking Transportation was ratified.² Within the framework of international transportation cooperation, transport corridors, unified transportation operators and settlements in national currencies (multicurrency) are being developed.³ Unmanned technologies, such as autonomous driving, for example, autonomous navigation,⁴ autonomous cargo delivery using unmanned freight vehicles,⁵ are being actively implemented. In addition to digitalization, streamlining flows and eliminating bottlenecks by introducing intelligent checkpoints, in particular, electronic queues to reserve travel time⁶ (for example, through the Kani — Kurgan checkpoint in the Amur Region) remain relevant.

3.4.2. Transportation operations performance in 2022⁷

According to Rosstat, the share of the transportation sector in gross value added (GVA)⁸ in 2022 was 5.6% (approximately zero growth against 2021 and a decrease of 0.4 p.p. against 2020). Land and pipeline services account for a major part in the structure of GVA of the transportation sector. Balanced financial result (net of losses) of organizations in the transportation industry excluding small and medium-sized enterprises (SME) in 2022 accounted for Rb1,482.6 bn, which is 1.37 fold above the figure in 2021.⁹ The share of profit-making organizations in the industry decreased from 71.4% in 2021 to 69.1% in 2022.

Freight traffic activity

According to estimates of the Ministry of Economic Development of the Russian Federation,¹⁰ the dynamics of freight turnover in 2022 dropped by 2.6% against

- 1 Rossiya airlines announced the launch of Russian meteorological software // TASS. URL: <https://tass.ru/ekonomika/16276305>
- 2 The EAEU will use navigation seals to track shipments // GARANT.RU URL: <https://www.garant.ru/news/1581498/>
- 3 Vgudok. Forum “Russia’s Transportation”. URL: <https://vgudok.com/lenta/o-divnyy-novyy-mir-forum-transport-rossii-perevozki-mezhdu-rf-i-eaes-nastolko-horoshi-chto-o>
- 4 Vitaly Savelyev briefed about new technologies of maritime transport in Russia // Maritime news of Russia. URL <http://www.morvesti.ru/news/1679/99296/>
- 5 By the end of the year, KAMAZ will present an unmanned truck for testing on the M-11 highway // TASS. URL: <https://tass.ru/ekonomika/16363483>
- 6 It won’t hurt for the country // Transportation operations of Russia. URL: <https://transportrussia.ru/razdely/logistika/9368-za-derzhavu-ne-budet-obidno.html>
- 7 Excluding statistical information on the Donetsk People’s Republic (DPR), Luhansk People’s Republic (LPR), Zaporizhia and Kherson regions.
- 8 GDP. Annual data on OKVED 2 in current prices. // Rosstat. URL: <https://rosstat.gov.ru/statistics/accounts>
- 9 Socio-economic situation of Russia. January 2023 // Rosstat. URL: <https://rosstat.gov.ru/storage/mediabank/osn-01-2023.pdf>
- 10 On the current situation in the Russian economy. December 2022 – January 2023. URL: https://www.economy.gov.ru/material/file/c5eae890fdea17276c86004981bd51f2/2023_02_08.pdf

2021. The largest decrease took place in September: -7% vs. the corresponding period of the previous year. The decline in business activity was also observed in the related industries – retail sales (-6.7%) and wholesale trade (-14.5%), industrial output (-0.6%) and manufacturing (-1.3%).

Against the background of positive dynamics of cargo turnover growth in 2022, the freight transport intensity¹ of the economy remains at a relatively lower level than it was before the pandemic, which indicates an increase in the efficiency of transport use in specific terms and added value in the economy due to transportation (*Fig. 4*).

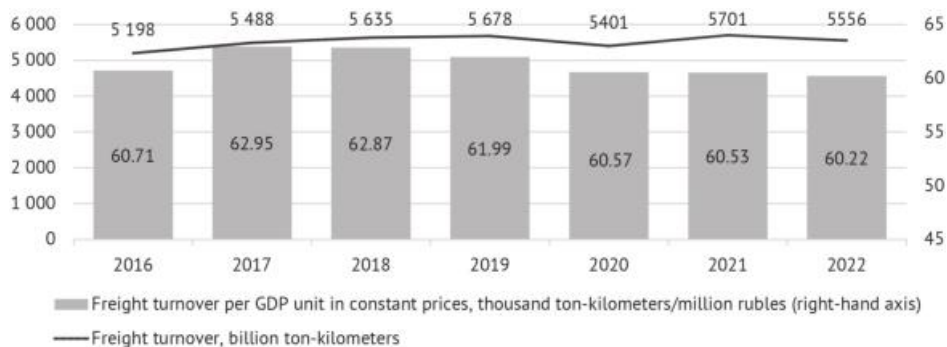


Fig. 4. The dynamic of freight turnover, 2016–2022

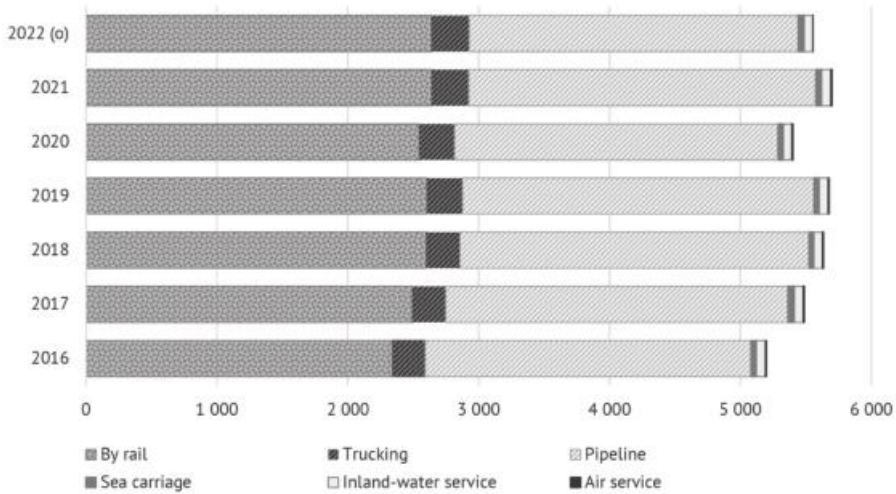
Sources: Rosstat, own calculations.

According to Rosstat operational data, in 2022, freight turnover in Russia decreased by 2.6% vs. 2021. A significant decline was shown by air transport (-69%), which is associated with the extension of transportation routes and the ban on direct transportation of a number of goods.² Cargo turnover of gas pipeline system (-15%) and inland waterway transport (-8%) declined to a comparatively lesser extent. The most stable situation is observed with regard to freight turnover by rail and petroleum product pipeline system (change within 1% downward). The oil pipeline system (6%), freight transport by road (2%) including commercial cargo transportation (5%), and ocean transport (1.5%) showed positive dynamics of freight turnover. Despite the multidirectional dynamic of the indicators of various types of transport, there were no significant changes in the structure of freight turnover (*Fig. 5*).

According to operational data, in 2022, the volume of freight traffic dropped by almost 3% to the corresponding period of the previous year. The dynamics of the volume of freight traffic by modes of transport largely coincides with the

¹ Freight transport intensity, or “overload” of the economy by cargo operations — the value of cargo turnover (sum-of-products of the weight of each batch of transported cargo on the distance of its transportation) per unit of GDP.

² Get out of a cargo dive // RZHD Partner.ru URL: <https://www.RZhd-partner.ru/aviation/comments/vyyti-iz-gruzovogo-pike/>



Note. 2022 is represented by updated information (“0” is close to year).

Fig. 5. Freight turnover by the type of transportation (billion ton-kilometers), 2016–2022

Sources: Rosstat, own calculations.

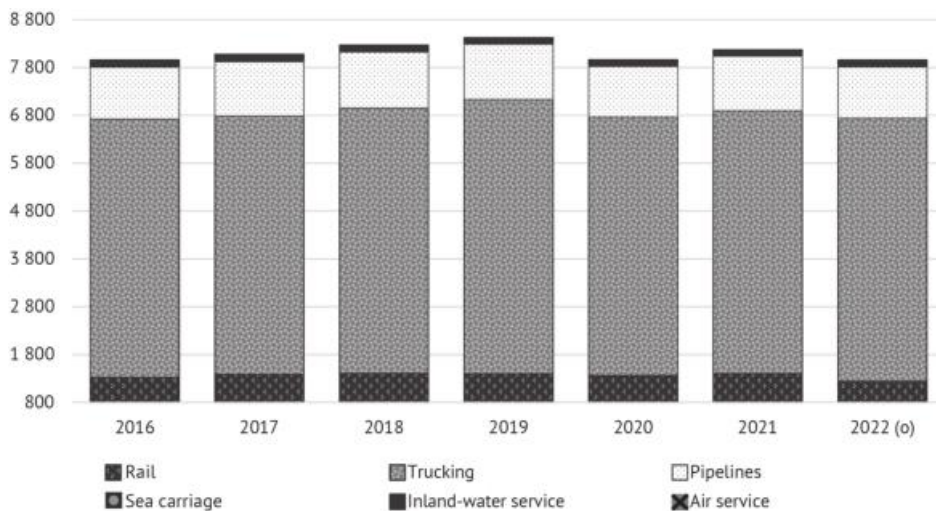
dynamics of freight turnover (Fig. 6). Air traffic accounted for the major part of the decrease in freight traffic (-62%), while pipeline transport (-6%) and rail transport (-12%) declined to a lesser extent. The decrease in freight transportation by rail transport was caused by the reduction of loading on the Russian Railways network and the fact that the growth in freight transportation within the country could not offset for the fall in export shipments.¹ Road (0.3%) and inland waterway transport (-0.4%) showed a near zero growth in freight traffic in 2022. In contrast to other modes, the volume of freight transported by sea in 2022 grew by 23% on the previous year. The positive dynamics was due to the reorientation of cargo from northwestern ports to far eastern ports and an increase in shipments to Asia-Pacific countries by maritime transport,² an increase in cargo shipments along the Northern Sea Route.³

In 2022, the cost of transportation and transit services in a number of directions went up and the share of logistics costs in the cost of goods increased. Also, in order to reduce the funding gap in the transportation sector, freight tariffs were indexed, in particular, by rail transport (twice in 2022: by 7.7% — since the

1 Reduction in loading on the network of Russian Railways by the end of 2022 is expected up to 4% – IPEN // Portnews. URL: <https://portnews.ru/news/339786/>

2 Russian seaports are adapting to the current environment // Maritime news of Russia. URL: <http://www.morvesti.ru/analitika/1691/99515/>

3 In 2022, the volume of traffic along the Northern Sea Route 2022 exceeded the target set in the national project // Rossyiskaya Gazeta. URL: <https://rg.ru/2022/12/15/obem-perevozok-posevmorputi-v-2022-godu-prevysil-celevoj-pokazatel-zalozhennyj-v-nacproekte.html>



Note. 2022 – updated information (“0” close to year).

Fig. 6. Freight traffic pattern by the type of transportation (million tons), 2016–2022

Sources: Rosstat, own calculations.

beginning of the year, by 11% — in June).¹ As a consequence, tariffs on freight transportation in the industry as a whole rose by 28% (*Fig. 7*), which is much higher than the average rate of growth in prices for all goods and services (12% in December 2022 against December 2021²).

In 2023, it is planned to carry out the next indexation of tariffs by 8%³ (tariffs of JSC “Russian Railways” — by 10%⁴). On January 1, 2023, Rosneft tariffs for oil transportation services will be increased by 5.99%.⁵ Further growth of tariffs for freight transportation will increase the financial burden on shippers, which may adversely affect the loading volumes dynamic.⁶

1 Tariffs for cargo transportation by rail may increase by 11% from June 1 // *Vedomosti*. URL: <https://www.vedomosti.ru/business/articles/2022/05/27/924029-gruzovie-perevozki-virasti>

2 Rosstat. URL: <https://rosstat.gov.ru/statistics/price> (дата обращения: 10.12.2022); ЕМИСС. URL: <https://www.fedstat.ru/indicator/31074>

3 The Government of the Russian Federation approved the indexation of freight railway tariffs for 2023. // *Trans.ru*. URL: <https://trans.ru/news/pravitelstvo-rf-utverdilo-indeksatsiyu-gruzovih-zheleznodorozhnih-tarifov-na-2023-god>

4 JSC RZG tariffs will be up by 10% // *Kommersant*. URL: <https://www.kommersant.ru/doc/5651246>

5 Transneft’s tariffs for pumping oil in 2023 will increase by 5.99% // *Interfax*. URL: <https://www.interfax.ru/business/876015>

6 Indexation of tariffs for freight transportation by 8% from 2023 adds anxiety and financial burden to the market // *RZD Partner.ru*. URL: <https://www.RZhd-partner.ru/zhd-transport/news/indeksatsiya-tarifov-na-gruzoperevozki-na-8-s-2023-goda-dobavlyayet-trevogi-i-finansovoy-nagruzki-na->

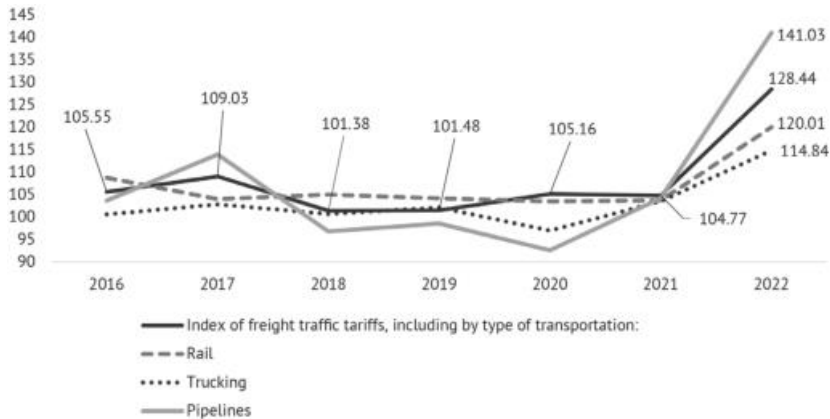


Fig. 7. Dynamics of freight tariffs index (aggregate and by the type of transportation) December against December of the previous year, %

Sources: Unified Interdepartmental Statistical Information System, own calculations.

Passenger traffic

In 2022, the passenger traffic (excluding tram, trolleybus and metro traffic) declined by 2% compared to 2021. Population transport mobility within Russia dropped slightly: 3,024 million passengers-km/million people in 2022 compared to 3,080 million passengers-km/million people in 2021 (Fig. 8). The dynamics of passenger turnover is differently directed by types of transport: increase in passenger turnover by rail (19%) and inland waterway (32%) transport, reduction — by bus (-13%), air (-6%) and sea (-21%).

According to the latest available data of Rosaviatsiya,¹ in January-February 2022, the passenger traffic on domestic and international routes was 1.5-fold higher (on international routes — three times higher) than during the same period in 2021, which is even higher than the rate of recovery growth after the pandemic (in 2021 the increase was 59%).

The increase in passenger traffic by water transport is mainly due to the resumption of cruise navigation after the lifting of coronavirus restrictions in Moscow² and St. Petersburg.³

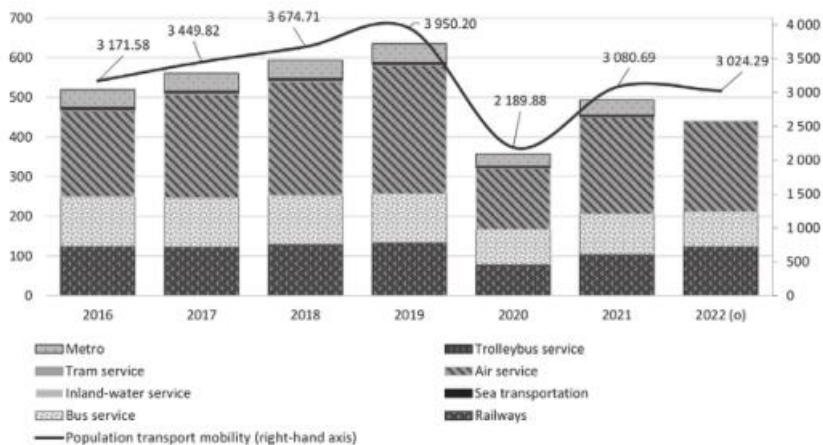
There were no significant changes in the structure of passenger traffic, but there was an increase in the share of rail transport and a decrease in the share of bus transport.

According to the 2022 results, the volume of passenger traffic increased by 3.5% against 2021 mainly due to the growth in transportation by rail (8%), bus (3%) transport. In contrast, the volume of passenger traffic by air (-15%) and sea

¹ Rosaviatsiya. URL: <https://favt.gov.ru/dejatelnost-vozdushnye-perevozki-stat-pokazately/>

² Navigation-2022 in the Moscow basin shows a significant increase in shipments by water // Rosmorrechflot. URL: <https://morflot.gov.ru/news/lenta/n6311.html>

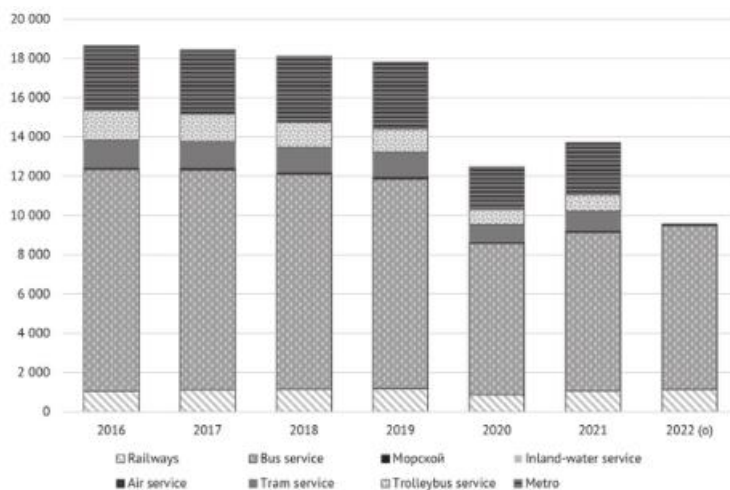
³ Passenger traffic of water transport in St. Petersburg during navigation in 2022 increased by 31% // Maritime news of Russia. URL: <http://www.morvesti.ru/news/1679/99332/>



Note. Transport mobility of the population is a correlation between passenger traffic without tram, trolleybus and metro traffic taken into account and the average annual number of the population (million passenger kilometers /million persons); the year 2021 is represented by updated information without tram, trolleybus and metro traffic taken into account.

Fig. 8. Passenger traffic by type of transportation (billion passenger kilometers), 2016–2022

Sources: Rosstat, own calculations.



Note. 2022 is represented by updated information without tram, trolleybus and metro traffic taken into account.

Fig. 9. Passenger traffic pattern by the type of transportation (million passengers), 2016–2022

Sources: Rosstat, own calculations.

(-32%) declined notably. Decrease is also observed in passenger transportation by inland waterway transport (-0.3%).

The structure of transportation has not undergone significant changes, the shares of all modes of transport are relatively stable (*Fig. 9*).

3.4.3. Transportation dynamic, the state of transport infrastructure and rolling stock

Railway service

In 2022, the number of countries imposed financial and material sanctions against Russian Railways, including an asset freeze, a ban on transactions with securities¹ and transactions with the company, the seizure and expropriation of freight cars² and a ban on the export of locomotives. Financial sanctions prevent the company from borrowing on international markets and material sanctions prevent the modernization and maintenance of rolling stock (for example, trains Strizh — Talgo 9, Sapsan — Siemens Velaro and Lastochka — Siemens Desiro). Because of the ban on deals with Siemens, which supplies Sapsan trains to Russia, the construction of high-speed lines can be suspended.³

Moreover, the sanctions affected rail transport between Russian regions: in June, a short-term ban was imposed on the transit of sanctioned cargo by rail and road through Lithuania to Kaliningrad. At the moment, there are still restrictions on transit transport by refrigerated trucks.⁴

As a consequence of multiple restrictive measures, over 10 months of 2022 the volume of loading on the railroad decreased for almost all categories of cargo, except for building materials (+5%): coal (-5.7%), iron and manganese ore (-3.6%), ferrous metals (-1.6%), chemical and mineral fertilizers (-6.2%), timber (-24%), grain (-8.6%), etc. At the yearend results, general decline in loading comes to 5%. According to forecasts of the Russian Railways, the loading on the railway network in 2023 may fall by 1.2% compared to the previous year.⁵ Analysts of the Institute of Natural Monopolies Research assume a deeper decline — about 3—4% with the main losses in the loading of coal (-8.3%), metals (-2.4%), ore (-0.1%).⁶

Changes took place not only in the structure of transportation, but also in its direction. Cargo flows were reoriented from the west in three directions: to the east, in the direction of the ports of the Azov-Black Sea basin and along

1 Sanctions against Russia and Russian counter sanctions // Russian-German Chamber of Commerce. URL: <https://russland.ahk.de/ru/obzor/obzor-sankcii>

2 Finland and Ukraine seized RZHD freight and passenger cars worth of Rb32 bn // Vgudok. URL: <https://vgudok.com/lenta/finlyandiya-i-ukraina-lishili-set-rzhd-vagonov-na-32-milliarda-zheleznodorozhnye-operator>

3 Will Sapsan stop in Russia because of sanctions? // RZHD Partner.ru URL: <https://www.RZHD-partner.ru/zhd-transport/comments/ostanovitsya-li-dvizhenie-sapsanov-v-rf-iz-za-sanktsiy/>

4 Lithuania imposed a ban on the transit of refrigerators by rail to the Kaliningrad region // Interfax. URL: <https://www.interfax-russia.ru/northwest/main/litva-vvela-zapret-na-tranzit-po-zh-d-refrizheratorov-v-kaliningradskuyu-oblast>

5 Raw materials will leave the wagons // Kommersant. URL: <https://www.kommersant.ru/doc/5707280>

6 Raw materials will leave the wagons // Kommersant. URL: <https://www.kommersant.ru/doc/5707280>

the international transport corridor “North-South”.¹ The regions of Eastern Siberia and the Far East are promising for the development of new supply chains. In 2022, more than 390 Russian enterprises shipped their products by rail for the first time in the eastern direction, including for export.² Moreover, the rail passenger transportation directions have undergone changes: the volume of passenger traffic to southern destinations, in particular to Crimea, has increased by 35%.³

In favor of developing the eastern direction, the construction of the Northern Latitudinal Railway, a railroad in the Yamal-Nenets Autonomous District, has been suspended. The development of the Murmansk rail hub and the construction of infrastructure at the Eastern range remain priorities.⁴ In 2022, new railway infrastructure facilities were opened and existing facilities were modified. In particular, regular shipments began at the new Nizhneleninskoye — Tuntszyan rail border crossing in the Jewish Autonomous Region. Export traffic through the Makhhalino — Hunchun border crossing point in Primorsky Krai in September 2022 increased by 60% after the transition to a 24-hour operation mode.⁵

However, the Far East still has areas with limited traffic capacity and bottlenecks in transportation infrastructure,⁶ which hampers export opportunities and the quick reorientation of freight flows to promising destinations. Due to congestion of railway wagons and delays in railroad deliveries by 20% of the base time, there was a risk of production stoppages, in particular of blast furnace.⁷

Road transportation

Despite the sanctions challenges faced by the road transportation sector (the ban on transportation through the EU, including transit, partial or complete cessation of import of spare parts and components), the volume of road transportation, which accounts for up to 69% of all freight traffic, did not drop in 2022. With the growth of freight transportation by road in 10 months of 2022 by 0.45% over the same period of the previous year, freight turnover increased by 1.87%, which indicates the lengthening of road transport routes and supply chains. As support measures for freight carriers, a partial abolition of weight and dimensions control was introduced and a decision was made not to raise the Platon system tariffs.

1 The “Transport of Russia” forum included a plenary discussion on “International Transport Cooperation-2022. New directions, trends, results”. // RF Ministry of Transportation. URL: <https://mintrans.gov.ru/transport-news/10511>

2 Dmitry Chernenok: Wagons to the East: How the railway responds to sanctions // RBC. URL: <https://www.rbc.ru/opinions/business/01/06/2022/62977ebe9a7947485528b403>

3 “Transport of Russia”: success, luck, optimism. The realists have not been invited to the opening of the transport forum in Moscow // Vgudok. URL: <https://vgudok.com/lenta/transport-rossii-uspeh-udacha-optimizm-na-otkrytie-transportnogo-foruma-v-moskve-realistov-ne>

4 “Transport of Russia”: success, luck, optimism. The realists have not been invited to the opening of the transport forum in Moscow // Vgudok. URL: <https://vgudok.com/lenta/transport-rossii-uspeh-udacha-optimizm-na-otkrytie-transportnogo-foruma-v-moskve-realistov-ne>

5 Coordinate activities. Russian Railways, together with partners, eliminate the negative effects of sanctions // Vgudok. URL: <https://vgudok.ru/content/freighttrans/1620213/>

6 How Russia can reorient supplies to the East // Nezavisimaya Gazeta. URL: https://www.ng.ru/kartblansh/2022-11-10/3_8587_kb.html

7 Transportation bottlenecks will be eliminated at the expense of the budget // Nezavisimaya Gazeta. URL: https://www.ng.ru/economics/2022-11-15/4_8590_problems.html

2022 observed the restructuring of established trade and supply chains, in particular, the development of road transportation in the Far East direction, the International Transport Corridor (ITC) “North — South” and in the direction of ports of the Azov-Black Sea basin. Demand for road transportation to Russia from Armenia and Kazakhstan, Turkey, Georgia, Azerbaijan and Uzbekistan surged (+53% in annual terms). In addition, the development of land routes within the country through new regions: the volume of freight transportation by road in the direction of the DNR, LNR and Kherson region surged by 280%.¹

After the reorientation of traffic flows to new directions and the increase in congestion at existing checkpoints, priority was given to the expansion of checkpoints and the organization of their dynamic operating hours, the introduction of electronic queuing systems, work on bilateral agreements with international partners to optimize documents circulation.²

As a consequence of import restrictions, there has been a shortage of components in the domestic automotive market and an increase in prices for auto parts and consumables, which limits the renewal of the car fleets and public transport fleet. In 84 major cities, 190 bus routes and 10 trolleybus routes were cut during the year.⁴ The decline in automobile production in Russia occurred in almost all categories. As a measure to support the domestic car market, the programs of preferential car loans for owners of old cars were extended.⁵

Air service

In 2022, the airline industry was affected by the largest number of sanctions restrictions: termination of aircraft maintenance and leasing, arrest of aircraft abroad, a ban on the import of components and spare parts, closure of the airspace of the EU, the USA, Canada and other countries for Russian airlines. In addition, the airworthiness of Russian airlines was downgraded as a result of a safety audit by the International Civil Aviation Organization (ICAO)⁶ due to the dual registration of the aircraft in operation. For the same reason, Russian aircraft re-registered in Russia have been banned from flying in Turkish airspace⁷ since November 1, 2022.

- 1 Road freight traffic returned to growth // Kommersant. URL: <https://www.kommersant.ru/doc/5459439>
- 2 Border crossing points are a priority // Transportation of Russia. URL: <https://transportrussia.ru/razdely/avtomobilnyj-transport/9497-punkty-propuska-v-prioritete.html>; Twelve additional vehicle lanes were opened at the Upper Lars border crossing point on the Russian-Georgian border // Trans.ru. URL: <https://trans.ru/news/v-punkte-propuska-verhnii-lars-na-granitse-rossii-s-gruziei-otkrili-12-dopolnitelnih-polos-dlya-transporta>
- 3 Cargo companies warned of the risk of bankruptcy in the market // RBC. URL: <https://www.rbc.ru/business/06/06/2022/629a1f419a794737332869a8>
- 4 Russian cities have cut 200 routes of public transport // RBC. URL: <https://www.rbc.ru/business/14/11/2022/636e73949a79471f6fdbfafa>
- 5 The Russian Federation has extended the program of preferential car loans for 2023 // Moskwa24. URL: <https://www.m24.ru/news/transport/22112022/523835>
- 6 Safety Audit Results: USOAP interactive viewer // ICAO. URL: <https://www.icao.int/safety/Pages/USOAP-Results.aspx>
- 7 Turkey banned the flights of Russian planes with double registration // RBC. URL: <https://www.rbc.ru/business/08/11/2022/636925de9a7947f6ad5f00b9>

In addition to all the sanctions challenges, 11 airports in southern Russia were closed for flights during most of 2022 for security reasons.¹

The sector faced challenges related to the loss of the number of aircraft in the fleet, the work stoppage of professional staff, the deterioration of the financial condition of airlines, and the decline in airport revenues. As a consequence, the volume of operations declined, predominantly on international routes: only 33% of cargo and 94% of passenger traffic was handled against January-October 2021.

In order to minimize losses, the domestic air transport market was reoriented to the eastern direction, in particular to the delivery of cargo from China and countries of South-East Asia.² Measures to stabilize the situation in the industry also included keeping airfares at last year's level³ and increasing the number of domestic flights. Thus, the expansion of passenger traffic within the country stimulates not only the emergence of new hubs (for example, Sochi and Krasnoyarsk⁴), but also the development of local aviation, including in the Far East.⁵

In order to preserve the aircraft and use them for domestic flights, foreign leased aircraft were re-registered and reinsured and Russian certificates of airworthiness were issued. Due to limitations of import supplies and shortage of spare parts, the airliners were disassembled for spare parts to be used for repair of other aircraft. At the end of October all Russian airlines switched to domestic reservation systems — Leonardo and TAIS.⁶

In order to compensate airlines and airports for operating expenses due to the extension of the flight restrictions, budget funds were allocated to preserve the operating activities of airlines, airport infrastructure and qualified personnel. In cities with suspended air service, additional services of ground transport, in particular intercity buses and trains, were launched to ensure uninterrupted delivery of goods and cargo and to preserve the transport mobility of the population.⁷

The main challenges for the industry remain the lack of prompt replacement of foreign aircraft with domestic one, as well as the retirement of existing aircraft due to problems with maintenance and the supply of spare parts. From April 2022 to January 2023 the domestic airlines' aircraft fleet decreased from 1,287⁸ to

1 The head of Rosaviatsiya asked the industry what is lacking // RZhD Partner.ru URL: <https://www.RZhD-partner.ru/aviation/comments/glava-rosaviatsii-sprosil-u-otrasli-chego-ey-ne-khvataet/>

2 Time for transformation: how the airline market will change in 2022 // RBC. URL: <https://ekb.plus.rbc.ru/news/6268cdd97a8aa97357fa6a4d>

3 Rosaviatsiya held a round table discussion on the effectiveness of state support measures during the sanctions // Rosaviatsiya. URL: <https://favt.gov.ru/novosti-novosti/?id=9686>

4 "Russia" is expanding its routes. The airline is actively developing regional networks // Aviaport. URL: <https://www.aviaport.ru/digest/2022/10/14/732829.html>

5 Head of « Aurora » — RBC: «Russians have begun to look more inward // Aviation Explorer. URL: <https://www.aex.ru/fdocs/2/2022/12/6/33203/>

6 The government has clarified the requirements for the domestic airline ticket reservation system // RF Government. URL: <http://government.ru/news/46205/>

7 The government has allocated another almost Rb2.5 billion to compensate operating costs of airports in the south and center of Russia // RF Government. URL: <http://government.ru/news/46261/>

8 The stage of wings. The Ministry of Transport has developed a strategy for the aviation industry until 2030 // Kommersant. URL: <https://www.kommersant.ru/doc/5329222>

1,164.¹ According to the Program of Industry Development until 2030, the number of domestic aircraft to grow from 359 to 1395, foreign — to decline from 738 to 319.² More than a thousand domestic aircraft of different capacity will come to replace the imported ones: Sukhoi Superjet New, MS-21-310, Il-114-300 and Tu-214.³ Massive demand on the part of the airlines will facilitate acceleration of the domestic aircraft industry development. Iran, Turkey and Malaysia could become suppliers of components for domestically assembled aircraft.⁴

Ocean transportation

Before the sanctions were imposed, ocean transportation accounted for 80% of foreign trade shipments. In 2022, the ban was imposed on calls of ships certified by the Russian Maritime Register of Shipping to ports and locks of the EU countries, leasing of ships by foreign manufacturers, import of radio communication and maritime navigation technologies to Russia, export of coal and crude oil from Russia to EU through seaports. Foreign maritime operators refused to work with Russian cargo and to enter Russian seaports, and the EU customs authorities refused to handle and release Russian container cargoes. Insurance coverage was raised for vessels operating in the Russian direction, and port dues payments have been restricted.

Due to the exit of global container carriers from the Russian market, there was an acute shortage of containers and container ships for sea and rail transport. Due to insufficient container, bulk carrier and tanker fleet, there were difficulties with export of containers from ports to the APR countries, and ports were overloaded (example: the port of Vladivostok, which overload comes to 130—140%). Insufficiency of own marine infrastructure and production facilities in Russia restrains implementation of ship-owners plans regarding fleet renewal and expansion.

In response to the sanctions challenges, foreign trade flows from Russia were redirected to the countries of Asia, the Middle East and Latin America. Since the beginning of 2022, seven new shipping lines with friendly countries, in particular China, have been registered with 13 vessels;⁵ however, their small capacity does not allow to fully unload the ports. Cargo flows to Russia from the EU, previously going through the Baltic Sea, are redirected to the ports of the Far East or to Turkey and Iran with subsequent delivery by ferry to the port of Novorossiysk or the port of Kavkaz.⁶

1 Russian airlines plan to increase air traffic to 101 million passengers in 2023 // TASS. URL: <https://tass.ru/ekonomika/16872953>

2 Cannibalism and 500 planes: How the airline industry will live until 2030 // Aviaport. URL: <https://www.aviaport.ru/digest/2022/10/26/733763.html>

3 The EEF-2022 discussed the state and prospects of development of the domestic aircraft industry // Ministry of Transport of the Russian Federation // RF Ministry of Transport. URL: <https://mintrans.gov.ru/press-center/news/10359>

4 Russian civil aviation has good prospects // *Ekonomika I Zhizn*. URL: <https://www.eg-online.ru/article/460710/>

5 Russian seaports are adapting to the current situation // *Maritime news of Russia*. URL: <http://www.morvesti.ru/analitika/1691/99515/>

6 Sanctions against logistics // *Maritime news of Russia*. URL: <http://www.morvesti.ru/analitika/1685/97432/>

Significant reduction in container traffic by sea was in the north-west, namely in the port of St. Petersburg (-35.7% for 8 months of 2022 against the corresponding period of the previous year). In addition, a decline in container turnover was observed in the Azov-Black Sea basin.¹ Due to the redistribution of freight traffic to the ports of the Far East, sea transport freight turnover did not decrease relative to 2021, but even went up by 0.7%.²

Dry cargo (coal, grain, timber, ferrous metals, containers) declined by 5% in the structure of sea cargo shipping (for all ports from January to July), but liquid cargo transshipment went up (+4.5%)³ due to the increase of hydrocarbons deliveries to Asia-Pacific region via the Northern Sea Route.⁴

As support measures for the maritime industry, customs procedures were abolished, certification and reinsurance of ships in Russia were simplified (which is not recognized in a number of countries, including China), the rule on non-discriminatory access of cargoes to railway infrastructure and some sea ports (to redirect cargo traffic from North-Western ports) was suspended.⁵ Retaliatory measures have been introduced to prohibit foreign ships from entering Russian ports.

The Portovy LNG terminal was built and commissioned in 2022, and the berths of the Taman Bulk Terminal were reconstructed increasing throughput capacity to 35 million tons per year.⁶ The number of ships sailing to Kaliningrad moved up from 3 to 18.⁷ The key priority is the development of the Northern Sea Route, which in 2022 transported more than 25 million tons of cargo (the goal for 2024 is 80 million tons).

Inland water service

In 2022, the inland water transportation sector faced an increase in the price of shipbuilding steel, which exceeds its cost twofold,⁸ as well as a rise in the cost and timing of ship construction and repair. In addition, this year, due to the low water content of rivers and geopolitical factors, the terms and geography of navigation were adjusted and shifted, in particular, in the southern part of inland waterways, in the Lena and Yenisei basins.

1 Russian ports are ready to adjust to new economic environment // Analytical Center for the Government of the Russian Federation. URL: <https://ac.gov.ru/news/page/rossijskie-porty-gotovy-podstroitsa-pod-novye-ekonomiceskie-uslovia-27237>

2 Russian seaports are adapting to the current situation // Maritime news of Russia. URL: <http://www.morvesti.ru/analitika/1691/99515/>

3 Ibid.

4 Cargo turnover of the Arctic basin seaports increased by 3.3% // Neftegaz.ru. URL: <https://neftegaz.ru/news/transport-and-storage/746804-gruzooborot-morskikh-portov-arkticheskogo-basseyna-vyros-na-3-3>

5 Western sanctions are changing the logistics of transportation in Russia // Maritime news of Russia. URL: <http://www.morvesti.ru/analitika/1691/95280/>

6 The piers have been reconstructed in Taman // SeaNews. URL: <https://seanews.ru/2022/08/12/ru-v-tamani-rekonstruirovali-prichaly/>

7 Exhibition of water management achievements // Vgudok. URL: <https://vgudok.com/lenta/vystavka-dostizheniy-vodnogo-hozyaystva-na-transportnoy-nedele-rasskazali-o-tom-kak-morskie-i>

8 Actual prices for shipbuilding steel in Russia exceeded the cost by 2-3 times // Portnews. URL: <https://portnews.ru/news/327099/>

Despite the restrictions, there has been an increase in the share of inland water transportation regarding sipping. In addition, the competition between inland waterway and railroad transportation¹ has been overshadowed by the sufficiency of cargoes for both types of transportation. The dynamics of shipping volumes in inland waterway basins was multidirectional: growth in the Yenisei basin (+20% by 2021), a drop in the Amur basin and staying at the previous year's level in the Volga basin.

There were changes in the structure of shipping by inland water transportation. Shipping by inland waterway in the Amur basin was redirected to construction cargo and coal due to the ban on the export of untreated fine wood.² In the Volga basin there was an increase in transportation of dry cargo — crushed stone and grain, which is due to the demand for crushed stone owing to the construction of the M-12 highway, as well as the high grain yield. On the contrary, Volga Shipping Company, the largest shipping company, is exiting the oil tanker segment, selling tankers due to unprofitability of crude oil transportation and reorienting the liquid fleet towards transportation of food cargoes, molasses and liquid chemicals.³

This year, as part of the federal project “Inland Waterways” of the Comprehensive Plan of Modernization and Expansion of Mainline Infrastructure, a new buoy tender “Mikhail Gromov” for the maintenance of ship navigation equipment on inland waterways in the Kama basin has been commissioned.⁴

Construction and commissioning of new vessels is central for the inland water transportation sector. More than 45—50% of the river fleet has exceeded its service life, which indicates the urgent need for fleet renewal and mass retirement of obsolete vessels. Due to the long payback period of investment projects, vessel construction depends almost entirely on state support.⁵

Pipelines

As a result of the reciprocal sanctions policy (ban on gas transit,⁶ transition to payment in rubles,⁷ establishing a price cap⁸) and reduction of Russian energy

- 1 Exhibition of water management achievements // Vgudok. URL: <https://vgudok.com/lenta/vystavka-dostizheniy-vodnogo-hozyaystva-na-transportnoy-nedele-rasskazali-o-tom-kak-morskii-i>
- 2 Results of river navigation — 2022: stability against the background of sanctions turbulence // RZHD Partner.ru. URL: <https://www.RZHD-partner.ru/wate-transport/reviews/itogi-rechnoy-navigatsii-2022-stabilnost-na-fone-sanktsionnoy-turbulentnosti/>
- 3 The Volga Shipping Company will sell eight oil tankers in October 2022 // PortNews. URL: <https://portnews.ru/news/336378/>
- 4 A new buoy tender “Mikhail Gromov” arrived in the Kama basin // PortNews. URL: <https://portnews.ru/news/337650/>
- 5 Results of river navigation — 2022: stability against the background of sanctions turbulence // RZHD Partner.ru URL: <https://www.RZHD-partner.ru/wate-transport/reviews/itogi-rechnoy-navigatsii-2022-stabilnost-na-fone-sanktsionnoy-turbulentnosti/>
- 6 Gazprom explained what happened to the flow of Russian gas through Poland // Gazeta.ru URL: <https://www.gazeta.ru/business/2022/05/12/14846882.shtml>
- 7 Countries that refuse to pay for gas in rubles have already been cut off from Russian supplies // Interfax. URL: <https://www.interfax.ru/russia/845534>
- 8 The EU briefed what prices are being discussed for a price cap on gas // RBC. URL: <https://www.rbc.ru/politics/19/12/2022/63a02a639a79471cccd336d7>

consumption in European countries,¹ restrictions on energy exports from Russia directly affected the volume of pipeline transport in 2022. According to the results of ten months, the pipeline transportation dropped by 6% against the corresponding period of 2021 (cargo turnover — by 4%).

The main decrease in pipeline transportation was due to a decline in gas production and pipeline transportation: gas production fell by 12%,² while cargo transportation and freight turnover declined by 16% and 14%, respectively. Pipeline transportation infrastructure has been subjected to damage: cumulative fuel losses due to damage to the Nord Stream 1 and Nord Stream 2 pipelines have been estimated at \$2 bn.³ In contrast, the volume of transport activity by oil pipeline demonstrates a positive trend.

Companies are taking measures to reorient cargo export flows. For example, Rosneft's shipments in 2022 increased by 3% to 86.9 mn tons, of which 52.4 mn tons were supplied to Asian markets, a third higher than the previous year. According to industry experts, the turnaround of cargo flows to the eastern direction will make it possible to avoid a decline in energy production and exports and achieve indicators comparable to those of 2021.⁴
