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**RUSSIAN ECONOMY IN 2021**

**TRENDS AND OUTLOOKS**

*(Issue 43)*

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The review “Russian Economy. Trends and Outlooks” has been published by the Gaidar Institute since 1991. This is the 43th issue. This publication provides a detailed analysis of the most significant trends in the Russian economy, global trends in the social and economic development. The work contains 6 big sections that highlight different aspects of Russia’s economic development, which allow to monitor all angles of ongoing events over a prolonged period: global economic and political challenges and national responses, economic growth and economic crisis; the monetary and budget spheres; financial markets and institutions; the real sector; social sphere; institutional changes. The work is based on an extensive array of statistical data that forms the basis of original computation and numerous charts confirming the conclusions.

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## **S. Aliev, Ksenia Borzykh, Yuri Ponomarev**

### **4.4. Russia's transportation industry in 2021<sup>1</sup>**

#### **4.4.1. Post-pandemic recovery of the transportation industry**

After a dramatic decline of the main performance indicators of the transportation industry on the back of acute implications of the coronavirus

<sup>1</sup> This section was written by: *Aliev S.A.*, Junior Researcher of the Infrastructure and Spatial Studies Department, IAES RANEPА; *Borzykh K.A.*, Junior Researcher of the Infrastructure and Spatial Studies Department, IAES RANEPА; *Ponomarev Yu.Yu.*, Candidate of Economic Sciences, Head of the Infrastructure and Spatial Studies Department, IAES RANEPА; Senior Researcher of the Center for Real Sector Studies, Gaidar Institute.

pandemic in 2020, the year 2021 saw the signs of recovery of this sector, however, the indicators (the transportation volume) remained below the pre-pandemic level. The rates of recovery of the transportation industry correlate closely with the dynamics of related industries (intersectoral linkages), such as tourism, the building industry and retail trade. A pickup in transportation services was driven by the lifting of restrictions and a revival of global production, business activity and logistics chains.

According to the data of the Central Bank of Russia,<sup>1</sup> in 2021 exports and imports of transportation services sped up and at year end this sector fixed surplus of \$3.518 bn owing to growth in the volumes of transit and container freight between Russia and China, Central Asia and the EU, recovery and integration of global supply chains into the single market of transportation services, for example, on the basis of the Eurasian Economic Union (EEU), as well as a pickup in export shipments by sea.<sup>2</sup> In 2021, exports and imports of transportation services increased by 12% and 27%, respectively, relative to 2020 and 87% and 94%, respectively, relative to 2019. Shortages remain in the segment of business and private travelling: in 2021 exports and imports decreased and amounted to \$3.5 bn and \$11.8 bn, respectively, (32% relative to 2019) primarily on the back of the existing restrictions on international service.

As in 2020, a decrease in the volume of international transportation services was largely made up for by a pickup in transportation and haulage inside the country. Owing to high recovery growth rates in the segment of transportation of staple goods and development of e-commerce,<sup>3</sup> the cargo turnover and freight traffic volumes surpassed those seen in 2020 and approached the pre-pandemic level.

Unlike freight traffic, passenger services recovered only by 80% in 2020 because of the population's low mobility<sup>4</sup> compared with the 2019 level. Full recovery of passenger services can be impeded by enhanced epidemiological measures: as seen from Russian regions' experience the introduction of QR-codes on the public urban transport can lead to a 20%-30% decrease in a daily passenger flow.<sup>5</sup>

According to the Rosstat's data, in 2021 the share of the transportation industry in gross value added<sup>6</sup> was equal to 6% (a decrease of 0.8 p.p. and 0.4 p.p. relative to 2019 and 2020, respectively). Overall, in January-November 2021 across the sector the balanced financial result (profit less losses) of entities related to the "Transportation and Storage" group without mid-sized and small companies taken into account grew by Rb582.6 bn (+110.8%) on the relevant period of 2020.<sup>7</sup> In 2021, the operations of land passenger transport (except for

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1 URL: [https://cbr.ru/statistics/macro\\_itm/svs/](https://cbr.ru/statistics/macro_itm/svs/)

2 URL: <https://iz.ru/1195666/ekaterina-vinogradova/servisnyi-epitcentr-eksport-uslug-iz-rossii-vpervye-prevysil-import>

3 URL: [https://ratings.ru/upload/iblock/9c8/NCR\\_Transport\\_comment\\_Oct2021.pdf](https://ratings.ru/upload/iblock/9c8/NCR_Transport_comment_Oct2021.pdf)

4 URL: <https://www.kommersant.ru/doc/4910137>

5 URL: <https://www.interfax-russia.ru/volga/news/passazhiropotok-v-transporte-tatarstana-posle-vvedeniya-qr-kodov-snizilsya-na-20-30-mintrans>

6 The Rosstat. (GDP produced. The annual data on OKVED 2 (NAC Edition 2) (since 2011) in current prices. URL: <https://rosstat.gov.ru/accounts>)

7 URL: [https://rosstat.gov.ru/storage/mediabank/13\\_02-02-2022.html](https://rosstat.gov.ru/storage/mediabank/13_02-02-2022.html); [https://www.gks.ru/bgd/free/B04\\_03/IssWWW.exe/Stg/d02/16.htm](https://www.gks.ru/bgd/free/B04_03/IssWWW.exe/Stg/d02/16.htm)

railways), as well as mail and courier services were loss-making.<sup>1</sup> At the same time, hyperlocal delivery (a direct delivery from the seller to the buyer within the limits of a confined geographical zone, that is, one district), courier services and all forms of vehicle rental services, including micro-transport (bicycles and electric scooters) picked up.<sup>2</sup> The coverage of the electric scooter rental service (kick sharing) – it is used for 70%—85% for transportation services – increased by 50% as compared with 2020 and is available in 90 Russian cities.<sup>3</sup> Demand for delivery services increased simultaneously with the strengthening of restrictions in individual regions or on the federal level. For example, October saw a 10% growth on the previous month<sup>4</sup> when non-working days were declared. Overall, in 2021 demand for courier services increased five-fold.<sup>5</sup>

It is noteworthy that late in November 2021 the Transport Strategy till 2030 with the Outlook till 2035<sup>6</sup> (Strategy), which development took several years, was approved. Within the scope of this Strategy, it is planned to solve large-scale objectives, such as the formation of the nationwide backbone transportation network, including all types of transport links; fast-track upgrading of transportation infrastructure, including airfields and airports; building of motorways and high-speed railways, as well as the development of city transport infrastructure and upgrading of the public urban transport facilities. A particular attention is paid to the transportation industry’s digital development which gained momentum in the past few years,<sup>7</sup> including the introduction of platform services in logistics, development of remotely piloted (autonomous) transports<sup>8</sup> to reduce the cost of freight and passenger transportation, as well as “decarbonization” with taking particularly into account the development of the strategy of shifting to carbon-neutral transport and ecological fuels in order to reduce an environmental load.

#### 4.4.2. Performance indicators

##### *Freight transportation*

The revival of business activity and related industries’ growth, as well as improvement of the global commodity market environment gave an impetus to the recovery of freight traffic to the pre-pandemic level. By estimates of the RF Ministry of Economic Development,<sup>9</sup> at year-end 2021 freight traffic dynamics surpassed the level seen in 2019 (+0.3%).

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1 URL: <https://www.hse.ru/pubs/share/direct/document/556362954.pdf>

2 URL: <https://www.eg-online.ru/article/446104/>

3 URL: <https://truesharing.ru/tp/28275/>

4 URL: <https://www.superjob.ru/research/articles/113138/spros-na-kurerov-v-rossii-za-god-vyros-v-5-raz/>

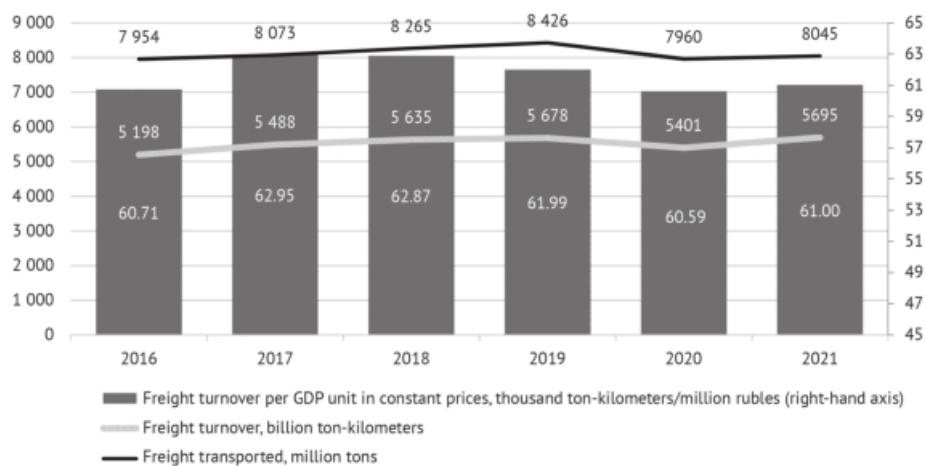
5 Ibid.

6 URL: <http://government.ru/docs/43948/>

7 URL: [https://tv.rbc.ru/archive/rbc\\_plus\\_dnv/61940ece2ae5967c16d43e6e](https://tv.rbc.ru/archive/rbc_plus_dnv/61940ece2ae5967c16d43e6e)

8 In accordance with the Strategy of Digital Transformation till 2021–2030.

9 URL: <https://economy.gov.ru/material/file/6211dc39795bea0da2120d1d8df9d646/20220209.pdf>



Note. 2021 – updated information.

Fig. 5. The dynamic of freight turnover per GDP unit in constant prices of 2016 (thousand ton-kilometers/million rubles), cargo traffic volume (million tons) and transport freight turnover (billion ton-kilometers), 2016–2021

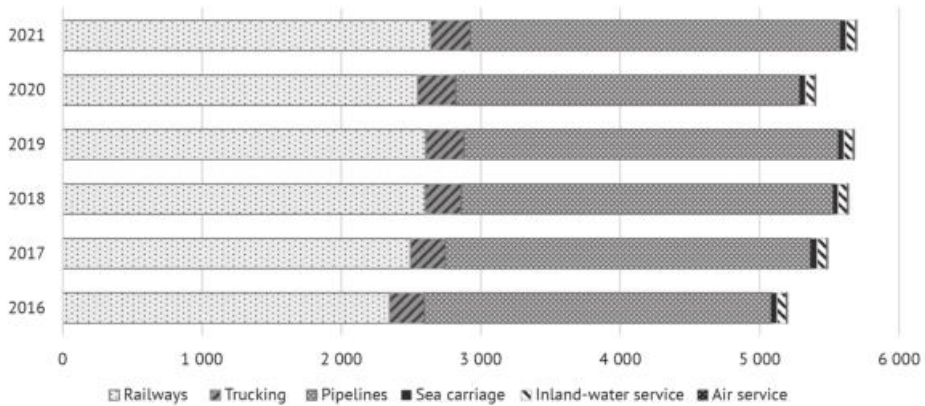
Source: Rosstat, own calculations. URL: <https://fedstat.ru/indicator/30990>; <https://rosstat.gov.ru/folder/23455>; <https://rosstat.gov.ru/accounts>

Freight traffic upside dynamics and volume in nominal terms influenced the indicators of cargo capacity<sup>1</sup> of the economy: at year-end 2021 cargo capacity was below the 2019 pre-pandemic level, an increase of somewhat less than 1% relative to the previous year, that is, a very slight decrease in efficiency of transport utilization (value added creation) in terms of units.

According to the Rosstat’s data, in 2021 overall freight turnover (on the back of upside dynamics of all types of transport) increased by 5.3% as compared with the previous year and surpassed the 2019 pre-pandemic level (Fig. 5). Air service saw the highest recovery growth in freight turnover (29% on 2020), while sea carriage, the lowest one (0.37%). There was almost equal recovery of freight turnover of railway service and inland-water service (growth within the range of 2%–3% relative to 2020), as well as of trucking and pipelines (5%–7%). It is noteworthy that no substantial changes took place in the freight turnover pattern (Fig. 6).

In 2021, freight traffic increased by 2.5% relative to the previous year, however, failed to achieve the level seen in 2019 (-3.2%). Freight traffic dynamics by the type of transport was multidirectional: the volumes and shares of sea carriage and inland-water service decreased in the freight transportation pattern as compared with 2020, while those of trucking, air service and pipelines picked up (Fig. 7).

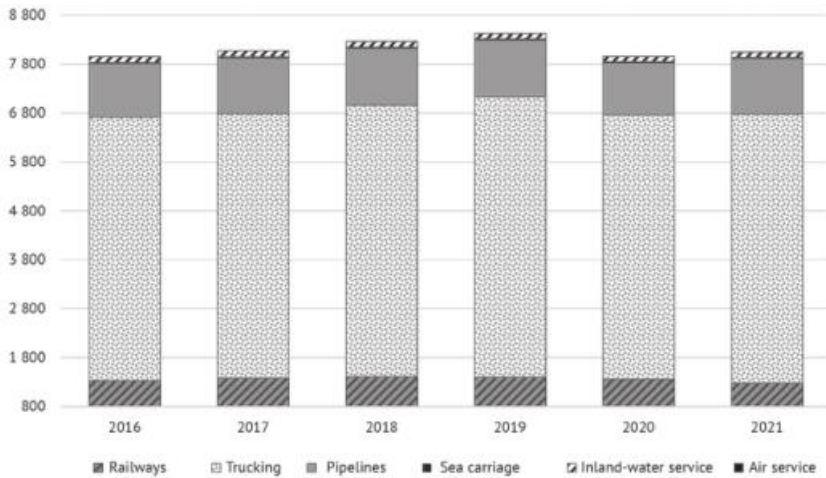
<sup>1</sup> Cargo capacity is the value of freight turnover (sum of productions of weight of each freight shipment by a transportation distance) per GDP unit and shows the extent of the “load” on the economy by the work of transport.



Note. 2021 – updated information.

Fig. 6. Freight turnover by the type of transportation (billion ton-kilometers), 2016–2021

Source: Rosstat, own calculations. URL: <https://fedstat.ru/indicator/30990>; <https://rosstat.gov.ru/folder/23455>

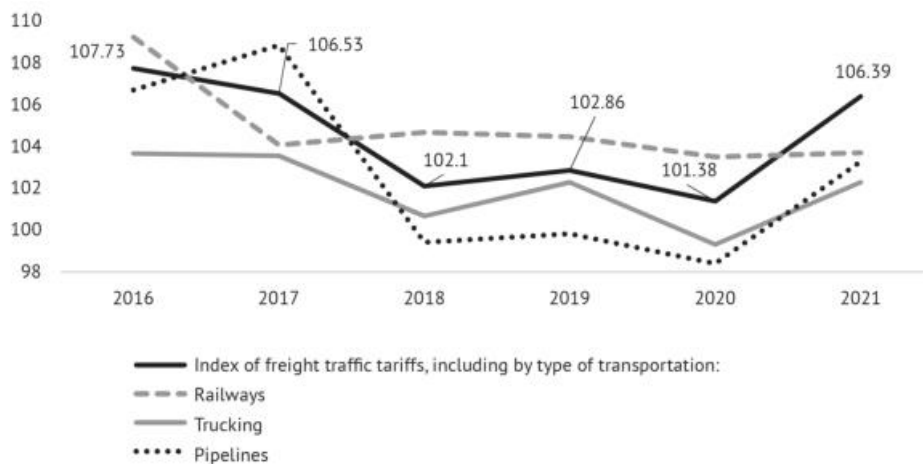


Note. 2021 – updated information.

Fig. 7. Freight traffic pattern by the type of transportation (million tons), 2016–2021.

Source: Rosstat, own calculations. URL: <https://fedstat.ru/indicator/31314>; <https://rosstat.gov.ru/folder/23455>

According to the Rosstat’s updated information, in 2021 the volume of freight traffic by railway increased, too, relative to the previous year.



*Fig. 8. Dynamics of freight tariffs index (aggregate and by the type of transportation), % change relative to the previous year (January-November)*

Source: The Unified Interdepartmental Statistical Information System, own calculations. URL: <https://fedstat.ru/indicator/31076>

The overall dynamics and changes in the freight traffic pattern were affected and driven by freight tariffs dynamics (*Fig. 8*). In 2021, there was fast growth in the average level of freight tariffs comparable with the level seen in 2017; at the same time the index of railway freight tariffs saw relatively sustainable dynamics and stabilized at a higher level as compared with other types of transportation. A pickup in freight tariffs and appreciation of prices for logistics services was driven by a sea freight crisis in 2021: sea freight tariffs growth led to an increase in demand for multimodal freight transportation and sped up tariffs growth in related transportation industries (railways, motor and air transportation).<sup>1</sup> An upward trend of tariff indices correlates with the overall dynamic of consumer prices: according to the Rosstat's data<sup>2</sup> the consumer price index in 2021 on 2020 was equal to 108.39%, including the index of consumer prices for services (104.98%).

### ***Passenger traffic***

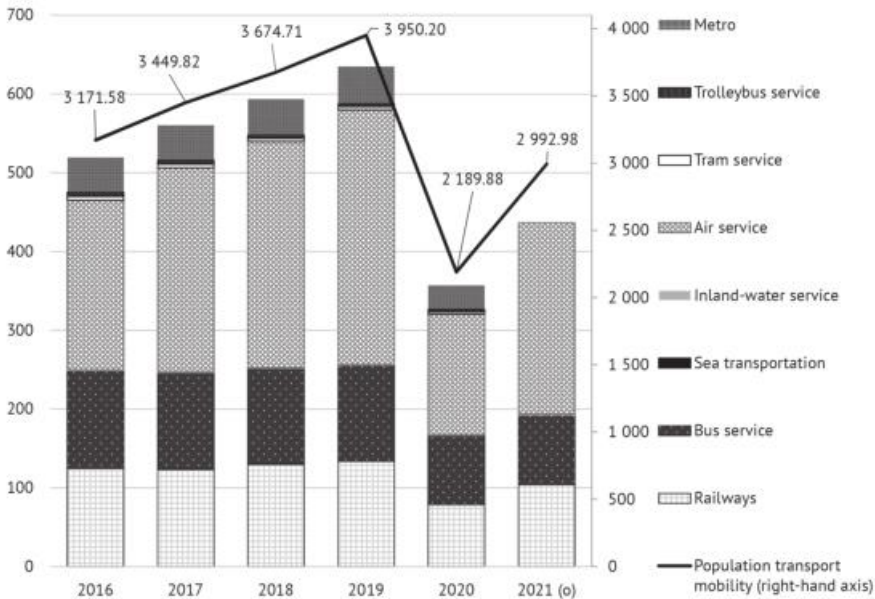
In 2020, passenger traffic was hit hard by the coronavirus pandemic: transport mobility of the population decreased by almost 50% (*Fig. 9*).

At year-end 2021, passenger traffic (without taking into account tram, trolleybus and metro traffic) recovered by 75% relative to the level seen in 2019 and its growth was equal to 39% relative to 2020. Recovery dynamics are similar across the types of transportation: there is growth as compared with the indices of the previous year, however, the pre-pandemic level failed to be achieved. In 2021, the highest pickup in passenger traffic was registered for inland-water

<sup>1</sup> URL: <https://www.retail.ru/articles/pochemu-dorozhayut-gruzoperevozki-v-2021-godu/>

<sup>2</sup> URL: <https://rosstat.gov.ru/price>





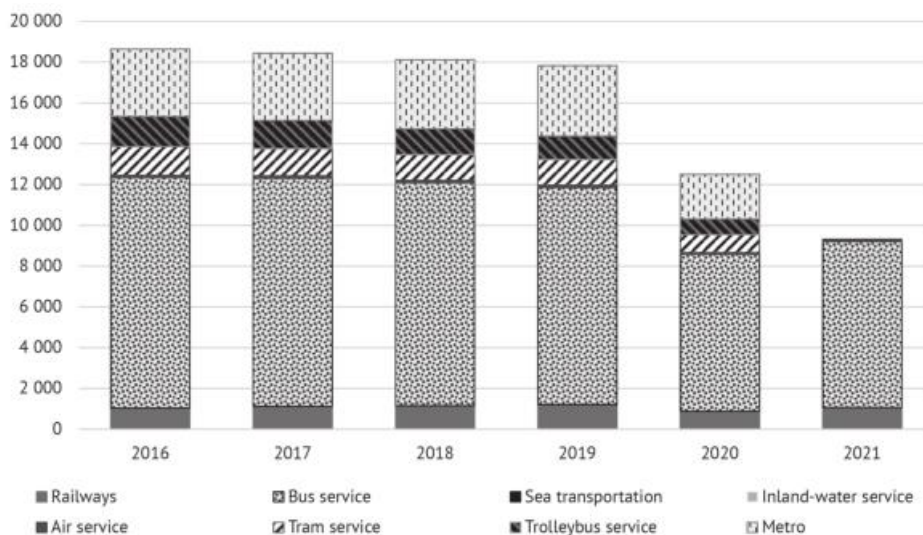
**Note.** Transport mobility of the population is a correlation between passenger traffic without tram, trolleybus and metro traffic taken into account and the average annual number of the population (million passenger kilometers /million persons); the year 2021 is represented by updated information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

*Fig. 9.* Passenger traffic by the type of transportation (billion passenger kilometers), 2016–2021

*Source:* Rosstat, own calculations. URL: <https://rosstat.gov.ru/folder/23455>; <https://fedstat.ru/indicator/43534>; <https://fedstat.ru/indicator/31313>; <https://rosstat.gov.ru/folder/12781>

service (92%) and air service (58%); this can be substantiated by a low base effect on the back of a considerable decrease in transport work in 2020. Air passenger traffic recovered mainly owing to domestic air traffic. At the same time, railway, bus and sea passenger traffic increased only by 32.6%, 10% and 7%, respectively. The passenger traffic pattern did not undergo serious changes, however, the share of air and railway passenger traffic grew as compared with 2020 and this can be explained by the fact that passenger traffic returned to its pre-pandemic pattern.

The year 2021 saw a revival of passenger traffic: its overall volume increased by 11% relative to 2020 and amounted to 80% of the 2019 pre-pandemic level. By the type of transportation, the highest increase in passenger traffic volume was registered for air service (60%), which saw a large-scale decline in 2020. It is noteworthy that there was almost equal passenger traffic growth in railway service (21%), inland-water service (16%) and bus service (10%) as compared with the previous year, while sea transportation saw negative passenger traffic growth (-8%) (*Fig. 10*).



**Note.** 2021 is represented by updated information without tram, trolleybus and metro traffic taken into account.

*Fig. 10.* The passenger traffic pattern by the type of transportation (million passengers), 2016–2021

*Source:* Rosstat, own calculations. URL: <https://rosstat.gov.ru/folder/23455>; <https://fedstat.ru/indicator/31315>

In the passenger traffic pattern, the share of railway and bus services picked up. In 2020, the share of air service decreased and was adjusting to the pre-pandemic level, while the shares of sea transportation and inland-water service were relatively stable.

#### 4.4.3. Transportation dynamics, the state of transport infrastructure and rolling stock of individual types of transport

##### *Railway service*

With a revival of business activity after the pandemic, “delayed” growth potential is carried out by freight traffic. According to the updated information for 2021, overall railway freight traffic increased by 3% relative to 2020, but less than 1% relative to the pre-pandemic 2019.

A pickup in railway carriage was driven by growth in transportation of raw materials (primarily ferrous scrap, fossil coal and charred coal), a switchover from other types of transport (in particular, from motor transportation of grain over a distance of 400 km) and an increase in transit carriage. At the same time, the pattern of railway freight traffic underwent some changes: a decrease in

1 URL: <https://www.gudok.ru/newspaper/?ID=1585044&archive=2021.11.02>

the share of high tariff class freight and a 60.4% growth in the share of low-income freight in 2020,<sup>1</sup> as well as an increase in the share of container cargo in overall freight handling. In H1 2021, an average transportation range of all cargo increased by 1.8% as compared with the relevant period of 2020 on the back of an increase in the range of transportation of the industrial sector's freight (cars, fabricated metal products, engines and machinery).<sup>2</sup>

According to the estimates of the OAO RZhD, in 2021 transit railway carriage increased two-fold<sup>3</sup> on the back of expansion and upgrading of transportation services, diversification of transit routes (for example, the opening up of multimodal transit traffic from China to the UK via the city of Kaliningrad) and establishment of competitive prices.<sup>4</sup> A pickup in demand for railway container carriage was driven by a considerable increase in global sea freight rates in 2021; in the light of this, consignors refused to ship goods by sea and gave preference to multimodal services via seaports, including those in the Far East, which situation led to congestion thereof in October 2021. The development of multimodal freight traffic is limited by an insufficient freight capacity of the railway infrastructure, particularly, shortages of containers and freight trains; the railway network requires upgrades<sup>5</sup> and cargo transshipment port capacities need to be enhanced.<sup>6</sup>

On the back of modernization of the regional railway infrastructure in 2021, its traffic capacity increased, transport operators' maintenance costs declined and conditions for enhanced freight traffic flow to the Far East were created. In particular, the Borzya-Zabaikalsk electrified railway section and the double line working of the Kutykan-Kuvykta BAM run were put into operation.<sup>7</sup>

Like other types of transportation, amid restrictions the railway passenger service reorientated itself on in-country service. To motivate the population's transport mobility and promote demand for railway travelling, a program was endorsed to subsidize family trips in compartments on long-distance trains and new excursion trains and theme railway routes (tours) to cities across Russia were offered.

### *The Metro*

In 2021, the transport work volume was recovering fast: in October the Moscow Metro passenger flow was equal to 83% relative to the pre-pandemic level, having surpassed on this indicator the metro service of other large cities (Paris, Istanbul, Berlin and Beijing).<sup>8</sup>

1 URL: [https://www.ng.ru/vision/2021-08-24/100\\_08\\_24082021.html](https://www.ng.ru/vision/2021-08-24/100_08_24082021.html)

2 URL: <https://www.rzd-partner.ru/zhd-transport/comments/operatory-podveli-itogi-polugodiya-rastut-pogruzka-park-i-stavki/>

3 URL: <https://www.interfax.ru/russia/814821>

4 URL: <https://rg.ru/2021/04/25/rossiia-uvelichila-obemy-zheleznodorozhnyh-tranzitnyh-perevozok.html>

5 URL: <https://gudok.ru/newspaper/?ID=1586407&archive=2021.11.17>

6 URL: <https://www.rzd-partner.ru/logistics/opinions/infrastruktura-portov-dalnego-vostoka-odnoznachno-ne-gotova-k-rastushchemu-obemu-gruzov-sleduyushchi/>

7 URL: <https://rosavtodor.gov.ru/press-center/specproekty/455921>

8 URL: <https://www.m24.ru/news/transport/07102021/186436>

Further, the Moscow Metro infrastructure was actively developing. Overall, 25 kms of metro lines and 12 stations of the Big Circle Line (BCL),<sup>1</sup> including the modernized Kakhovskaya Station and the Sokol electric engine house<sup>2</sup> were put into operation in 2021 (for comparison: 7 stations and 17.9 kms of metro lines<sup>3</sup> in 2020). According to the data of mobile service providers, on the back of redistribution of passenger flows in the metro system and attraction of passengers from land transport modes the daily number of passengers at new stations increased by over 20% in the first few days after these stations were opened.<sup>4</sup>

### ***Road haulage***

In 2021, haulage volumes (68.3% of all freight) remained at the level of the previous year and failed to recover in full because of the following factors: a decrease in a road freight flow, the reorientation of a portion of freight from international routes to railway traffic and some companies' exit from the market.<sup>5</sup> On the back of growth in e-commerce and delivery services, motor freight transportation is still in demand as it accounts for a large volume of haulage of food products and staple goods. However, the pattern of motor freight transportation underwent some changes: the distance of routes decreased with simultaneous growth in intra-city freight transportation. In 2021, the number of vans – placed at the ATI.SU road haulers exchange – which are much in demand for intra-city freight transportation was steadily declining.<sup>6</sup>

A decrease in a motor freight flow is driven by rising tariffs and appreciation of prices for logistics services. According to the data of the ATI.SU index, growth in tariffs on long-distance haulage was equal on average to 23% in 2021.<sup>7</sup> On some routes, road haulage tariffs increased considerably: from Moscow to St. Petersburg — 32.8%, from the Amur Region (on average, on all routes) — 154%, from the Zabaikalye Territory — 114%, from the Maritime Territory — 97% and from the Khabarovsk Territory — 71%.<sup>8</sup> Tariff growth was driven by imbalances between demand and supply (a pickup in domestic demand and import supplies, transport shortages and a lack of drivers), appreciation of prices for fuel, increased costs on modernization of the fleet of vehicles<sup>9</sup> and transportation costs (for example, due to growth in tariffs on heavy-duty transporters)<sup>10</sup>, local limitations of routes, for example, closure of MKAD for transit heavy-duty and medium-duty

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1 URL: <https://icmos.ru/news/mer-moskvy-nazval-itogi-goda-po-stroitelstvu-metro>

2 URL: <https://realty.rbc.ru/news/611d0e829a79472436f8276d>

3 URL: <https://stroj.mos.ru/news/pochti-18-km-linii-i-7-stantsii-mietro-postroieno-v-moskvie-v-2020-ghodu>

4 URL: <https://www.m24.ru/news/transport/10122021/195783>

5 URL: <https://www.kommersant.ru/doc/4967143>

6 URL: <https://transportrussia.ru/razdely/avtomobilnyj-transport/8131-indeks-gruzoperevozok.html>

7 URL: <https://www.rzd-partner.ru/auto/comments/logisticheskiy-sboy-na-rynke-dalнемagistralnykh-avtoperevozok-rastut-stavki/>

8 URL: <https://news.ati.su/article/2021/12/14/rost-stavok-na-rynke-dalнемagistralnyh-avtomobilnyh-gruzoperevozok-nadolgo-li-092300/>

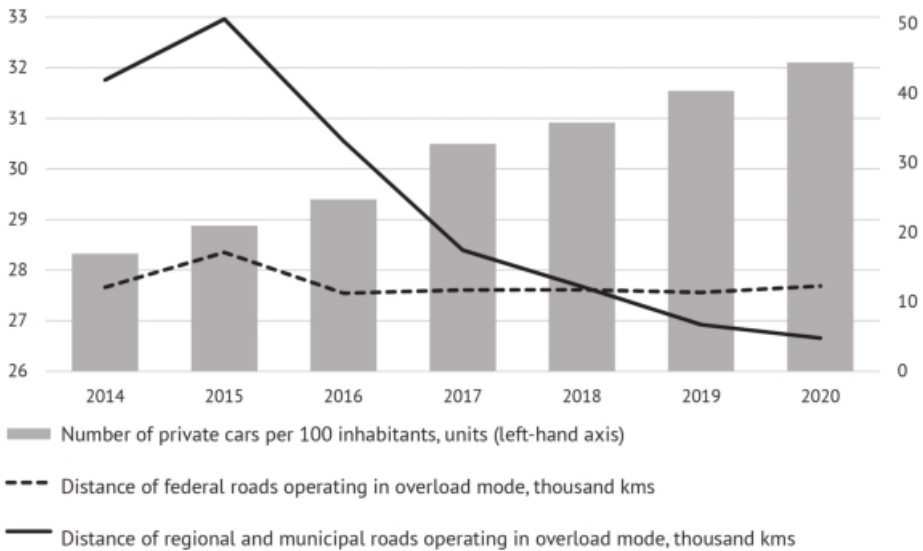
9 URL: [https://logirus.ru/news/transport/ekspert-\\_novye\\_gruzovye\\_mashiny\\_uzhe\\_podorozhali\\_na\\_15.html](https://logirus.ru/news/transport/ekspert-_novye_gruzovye_mashiny_uzhe_podorozhali_na_15.html)

10 URL: <https://tass.ru/ekonomika/10590657>

trucks.<sup>1</sup> Tariffs growth affects to a greater extent small haulers which account for 80% of the road haulage market.

To reduce costs and speed up freight transportation, it is proposed to introduce remotely piloted vehicles and seamless freight logistics. These initiatives are actively debated and elaborated. In particular, the work began within the scope of the pilot project on establishing a high-speed remotely piloted logistics corridor for freight transportation on route M-11 (Moscow-St. Petersburg) by the year 2024.<sup>2</sup> The introduction of a high-tech road infrastructure will ensure a seamless movement of goods en route and seamless border-crossing (owing to e-document flow) and reduce by 10%<sup>3</sup> the cost of freight transportation for logistics companies (with costs exceeding the standard cost of building of 1 km of a federal route by less than 0.5%<sup>4</sup>).

Despite the pandemic, active work on national projects, including those in the field of road building was underway. The construction of the Central Circle Motor Road (CCMR)<sup>5</sup> was completed and the first stage of building of A-289 route, a new federal motor road linking the city of Krasnodar and the Crimean Bridge



**Note.** The values specified in each diagram are the values of the indicator's growth rates relative to the previous period.

*Fig. 11.* The level and growth rates of indicators of overloading of federal and regional roads and automobilization of the population in 2014–2020

Source: Rosstat

1 URL: <https://www.retail.ru/articles/pochemu-dorozhayut-gruzoperevozki-v-2021-godu/>

2 URL: <https://ria.ru/20210603/koridor-1735376880.html>

3 URL: <https://rosavtodor.gov.ru/press-center/specproekty/455921>

4 URL: <https://www.rbc.ru/business/03/06/2021/60b878a09a7947f108341ffb>

5 URL: <https://www.mos.ru/mayor/themes/2299/7482050/>

was started.<sup>1</sup> According to the preliminary results of project implementation,<sup>2</sup> in 2021 the shares of regional roads meeting the existing standards and roads in metropolitan areas were equal to 45.8% (46.4%<sup>3</sup> in 2020) and 73% (71.9%<sup>4</sup> in 2020); death rates in road accidents declined from 10.8 death cases per 100,000 inhabitants in 2020 to 10.2 death cases in 2021.<sup>5</sup>

Despite sustainable growth in automobilization of the population (the number of private cars has increased by 13% since 2014 to 32.1 cars/100 inhabitants in 2020) associated with increased load on the road infrastructure, the length of regional or inter-municipal roads operating in an overload mode tends to decline (*Fig. 11*).

According to the data of the Avtostat think tank, in 2021 the sales volume of new cars was equal to 1.5 mn units, an increase of 3.3% as compared with the volume seen in 2020,<sup>6</sup> owing largely to a revival of the economy and households' increased buying activity early in the year. By estimates, car market capacity in money terms exceeded Rb3 trillion.<sup>7</sup> Also, the market volume of new trucks increased 33% by the year 2020.<sup>8</sup> However, shortages of electronic components and appreciation of prices for cars (an increase of 17% for new cars in 2021)<sup>9</sup> had a negative effect which slowed down growth in commercial road transport.

### *Air service*

Air passenger service was hit the hardest by the pandemic: before the crisis in the economy in 2020, this sector saw sustainable traffic volume growth both domestically and internationally.

In 2021, air service succeeded in overcoming largely the downturn and increasing transport work volumes: traffic flow amounted to 128% relative to the volume in 2019 and passenger flow, to 124%. According to the data of Rosaviatsia,<sup>10</sup> there was a pickup in the percentage of payload (5.3% and 3.2% on domestic and international flights, respectively) and seat occupancy (8.9% and 2.9%, respectively). However, the expected timescales of complete recovery of this sector are shifting and depend directly on stabilization of the epidemiological situation.

Despite growth in domestic traffic volumes, Russian airlines incur financial losses: by estimates of the Russian Air Transport Operators Association (RATO), airlines' overall losses may amount to Rb70 bn–Rb80 bn at year-end 2021 because of appreciation of prices for aviation fuel (an increase of 34.76% from January till December<sup>11</sup>), unutilized capacity,<sup>12</sup> as well as the need to service the leasing debt.<sup>13</sup>

1 URL: <https://rosavtodor.gov.ru/press-center/news/457851>

2 URL: <https://www.rzd-partner.ru/auto/comments/realizatsiya-natsproekta-bkd-v-2021-godu-prinesla-oshchutimye-rezultaty/>

3 URL: <https://www.fedstat.ru/indicator/59308>

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5 URL: <https://www.fedstat.ru/indicator/36230>

6 URL: <https://www.autostat.ru/infographics/50454/>

7 URL: <https://www.autostat.ru/infographics/50249/>

8 URL: <https://www.autostat.ru/news/50479/>

9 URL: <https://www.vedomosti.ru/auto/articles/2021/11/21/896883-snizhenie-prodazh>

10 URL: <https://favt.gov.ru/dejatelnost-vozdushnye-perevozki-osnovnye-proizvodstvennye-pokazateli-ga/>

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12 URL: [https://ratings.ru/upload/iblock/9c8/NCR\\_Transport\\_comment\\_Oct2021.pdf](https://ratings.ru/upload/iblock/9c8/NCR_Transport_comment_Oct2021.pdf)

13 URL: <https://www.rbc.ru/business/16/04/2021/607840769a7947e8ba2ecc09>

In 2021, air carriers took steps to reorientate their activities: a shift to budget service models<sup>1</sup> and a low-price segment of air carriage; a reduction in air fleet<sup>2</sup>; creation of new low-costers<sup>3</sup> (for example, Citrus, a Russian low-coster plans to start flights in June 2022). The pandemic gave an impetus to the emergence of new trends in air service and restructuring of the existing air carriage models to boost demand for transportation services. Particular examples include a sharing economy business model (the launch of a jet rental service for private flights<sup>4</sup>), “door-to-door” multimodal (composite) routes for travelers, including flights and road travel,<sup>5</sup> freighter transportation, that is, reprofiling of airplanes from passenger to freight service<sup>6</sup> and cargo dispatch services on domestic flights for legal entities.<sup>7</sup>

Apart from high operating losses, in 2021 the main obstacles which this sector encountered included the depreciation of the regional infrastructure of the air service and air fleet. It is noteworthy that modernization of air fleet is carried out in compliance with the policy of decarbonization and emission reduction.

### *Sea transportation*

In 2021, freight turnover increased by 1.7% as compared with the relevant period of the previous year and amounted to 835.2 mn tons.<sup>8</sup> Specifically, growth is observed in all cargo shipment routes, except for coastal shipping (*Fig. 12*).

In terms of geographic breakdown, cargo turnover picked up at Baltic seaports (252.8 mn tons or +4.7%), seaports of the sea of Azov and the Black Sea (256.8 mn tons, +1.9%) and those of the Far Eastern basin (224.3 mn tons, +0.6%), while it declined at Arctic seaports (94.34 mn tons, -1.9%) and Caspian seaports (6.5 mn tons, -13.0%) (*Fig. 13*). Specifically, if the share of Arctic seaports fell on the back of a decrease in transshipment both of dry cargo (-2.8%) and liquid cargo (-0.7%), the share of Caspian seaports declined because of a reduction in transshipment of dry cargo (-25.2%).

A gradual lifting of coronavirus restrictions had a positive effect on sea passenger traffic: in 2021, seaports served 20,900 passenger ships (+39.9%), about 12.2 mn persons, with seaports of Sevastopol (11.5 mn passengers), Yalta (about 0.36 mn passengers) and Sochi (about 0.185 mn passengers) accounting for the bulk of sea passengers.

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1 URL: <https://www.interfax.ru/business/736832>

2 URL: <http://www.ato.ru/content/v-rossii-bolshe-net-aviakompaniy-s-flotom-prevyshayushchim-200-samoletov?mpop=yes>

3 URL: <http://www.ato.ru/content/novyy-loukoster-vybral-goroda-rossii-dlya-bazirovaniya-pristupil-k-naboru-ekipazhey>

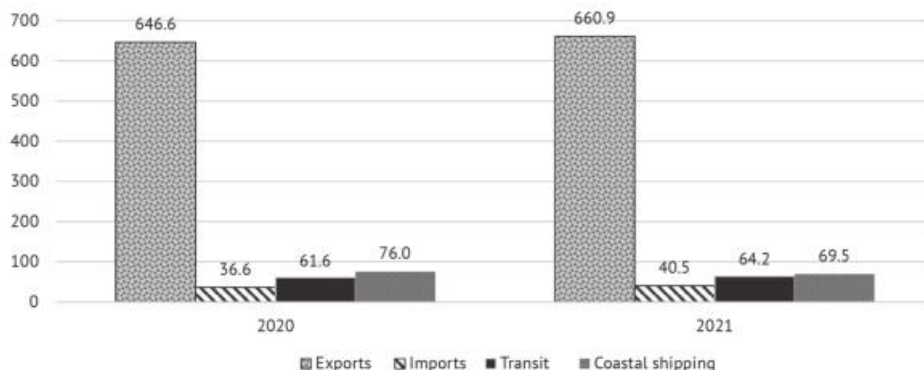
4 URL: <http://www.ato.ru/blogs/blog-alekseya-sinickogo/s7-airlines-testiruet-biznes-model-sheringovoy-ekonomiki>

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6 URL: <http://www.ato.ru/blogs/blog-alekseya-sinickogo/preighters-novyy-segment-rynka-gruzoperevozok>

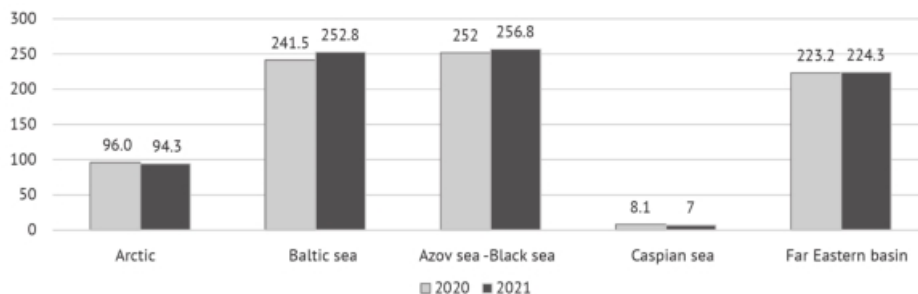
7 URL: <http://www.ato.ru/content/aviakompaniya-nordstar-zapustila-onlayn-uslugu-samostoyatelnoy-otpravki-gruzov?sea=37429>

8 URL: <https://www.morport.com/rus/news/gruzooborot-morskih-portov-rossii-za-12-mesyacev-2021-g>



*Fig. 12. Russian seaports' cargo turnover in 2020 and 2021 across routes, million tons*

Source: The Maritime Merchant Transport Association.



*Fig. 13. Russian seaports' cargo turnover in 2020 and 2021, million tons*

Source: The Maritime Merchant Transport Association.

In 2021, the maritime transport infrastructure included over 900 port complexes with overall capacity of about 1.23 bn tons. The waterside length is equal to about 155.7 thousand running meters.

In 2021, the following terminals were put into operation: one with a capacity of 12 mn tons in the Ust-Luga seaport area, another (25 mn tons) in the seaport of Taman and still another (1.5 mn tons) in the seaport of Novorossiysk.

***Inland-water service***

Based on results for 2021, inland-water transportation amounted to 103.6 mn tons<sup>1</sup>, an increase of 4.5% as compared with the relative period of 2020. Specifically, if domestic traffic increased by 5 mn tons, international traffic fell by 0.85 mn tons. The overall length of domestic water routes is equal to 101,592 kms of which 78% are non-alternative in terms of transportation of cargo and passengers.<sup>2</sup>

1 URL: <https://rosstat.gov.ru/storage/mediabank/otpravlvoda.xlsx>

2 URL: [https://www.gtlk.ru/press\\_room/transport-v-detalyakh/transport-v-detalyakh-vodnyy-transport/](https://www.gtlk.ru/press_room/transport-v-detalyakh/transport-v-detalyakh-vodnyy-transport/)



There are 117 inland harbors in Russia and over 2000 companies engage in inland-water cargo transportation.<sup>1</sup>

The passenger flow tends to recover and slowly returns to the pre-pandemic level. So, in 2021 the passenger traffic was equal to 8.94 mn persons, an increase of 15.8% as compared with the previous year and a decrease of nearly 19% relative to 2019.

At present, Russia operates about 11,000 river cargo vessels and nearly 1,500 passenger ships.

Depreciation of facilities and equipment has been a major problem in this sector. At present, nearly 40% of the fleet is in need of replacement.<sup>2</sup> Further, at year-end 2021 the average age of cargo vessels, passenger ships and cruise ships is 37 years, 38 years and 49 years, respectively. Most ships operate beyond their useful life time. For example, the share of such vessels in the river cargo fleet is equal to 50%, while in the passenger fleet, to 65%.

### *Pipelines*

In 2021, pipeline service managed to reduce the gap to the pre-crisis level owing to gas pipeline transportation (an increase of 12% relative to 2020) which surpassed the 2019 index. Weak dynamics of transportation volumes of oil pipelines and petroleum products pipelines correlates with relatively low production outputs: in 2021 oil production increased by 2.2% (natural gas – 10%) on the previous year.<sup>3</sup>

The introduction of energy-saving equipment is a current trend in the pipeline industry; this reduces the rate of use of electric power in transportation of oil (an overall decrease of 2,000 kW·hrs/mn tons·kms in 2010—2020) and petrochemicals (3,000 kW·hrs/mn tons·kms), as well as facilitates the sector to enhance and upgrade the existing production capacities.<sup>4</sup>

1 URL: [https://morflot.gov.ru/portyi\\_rf/perechen\\_rechnyih\\_portov.html](https://morflot.gov.ru/portyi_rf/perechen_rechnyih_portov.html)

2 URL: <https://news.ati.su/news/2021/09/23/po-kontseptsii-razvitiija-vvt-rossii-dolja-vodnogo-transporta-v-obschem-gruzooborote-strany-vyrastet-s-2-do-44-561016/>

3 URL: <https://neftegaz.ru/news/finance/719930-rossiya-v-2021-g-uvelichila-dobychu-nefti-na-2-2-gaza-na-10/>

4 URL: [https://www.transneft.ru/u/journal\\_file/1381/august\\_2021.pdf](https://www.transneft.ru/u/journal_file/1381/august_2021.pdf)

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