

Section 3. The real sector

3.1. Dynamics and structure of GDP and investments¹

3.1.1. Demand and supply: adjusting to new realia

The 2022 economic dynamic was characterized by extreme volatility. The situation was shaped by the continuing trends, on the one hand, of economic recovery after the coronavirus pandemic and, on the other hand, the creation of new mechanisms to support, adapt and reduce the impact of sanctions restrictions in relation to the real and financial sectors of the domestic economy throughout the year.²

The profiles of the economic development in early 2022 were defined by: continuation of the imbalance of the growing demand and limited changes in the supply at high differentiation of the growth rates by types of economic activities and segments of the internal and external markets; intensification of the inflationary pressure on incomes and consumer behavior of the population; structural transformation of prices and production costs.³ The starting position for 2022 was driven by the output growth by the basic types of economic activities by 5.9% according to the results of 2021, the final demand of the households increasing by 10.0% and the investment demand – by 7.6%. Domestic demand was propped up by raising the scale of foreign trade turnover: the increase in the contribution of net exports in 2021 came to 9.3% of GDP, including exports - 30.2% and imports – 20.9% (by the SNA methodology in current prices).

Changes in the internal and external environment determined the acceleration of inflation to 8.4% against 4.9% a year earlier and its increase in February 2022 up to 9.2% in annual terms. Regulation of inflation by instruments of monetary

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2 *Mau V.A.* Economic policy in times of the pandemic: The experience of 2021-2022 // *Voprosy Ekonomiki*. 2022.No. 3. Pp. 5–28.

3 *Drobyshevsky S.M., Pavlov P.N.* Structure of GDP growth rates in Russia up to 2024 // *Voprosy Ekonomiki*. 2022. No. 3. Pp. 29–51.

policy was accompanied by an increase in the key rate of the Bank of Russia from 4.5% per annum (March 22, 2021) to 8.5% (December 20, 2021) and 9.5% (February 14, 2022).

The change of political and economic environment at the end of February 2022 and the introduction of unprecedented in scale sanctions against the Russian Federation, limiting the access of the Russian business to the world markets of goods, services and technologies, resulted in the breach of established scheme of the domestic economy post-pandemic recovery. Under hard pressure of external factors on the financial sector and destabilization of the domestic market, raising of the key rate to 20% per annum (February 28, 2022) and implementation of exchange regulation measures made it possible in March 2022 to check inflation at 16.7% per annum and the nominal ruble exchange rate at 84.09 rubles/dollar.

The effect of the sanctions on the real sector of the economy turned out to be extended in time, and the situation in March remained in the context of positive values: in March 2022 the gross output by the basic types of economic activities made 101.6% versus March of the previous year (Q1 2022 – 104.5% versus Q1 2021), the minerals production growing by 6.6% (7.3%), in construction – by 5.9% (4.5%) and transport cargo turnover – by 3.6% (4.2%). With the acceleration of inflation, the rush of January-February has been replaced by the slowdown of retail trade turnover in March to 102.0% and wholesale trade – to 99.5% in annual terms. The negative point for the first time since November 2020 was the drop of the manufacturing industries output in March 2022 by 0.7% in annual terms, though the growth of the production in January-February ensured the continuation of the quarter upward trend at the level of 104.5% versus the corresponding period of 2021.

According to the results of Q1 2022 as compared to the corresponding period of the previous year, GDP went up by 3.5%, final consumption of households – by 4.5% and investment in fixed assets – by 13.8%. In the current foreign economic environment, the contribution of the net exports to the cost structure of GDP (according to the SNA methodology) at the level of 19.2% in current prices (8.0% in comparable prices) that was exceptionally high for the period of 20-year observations, had a positive impact.

Since April 2022, there has been an intensification of the negative influence of the sanctions restrictions on the economic dynamics: the output by the basic kinds of economic activities in Q2 made 96.3% of the similar period level of the previous year. The most acute reaction to the changes of the political and economic environment was observed in the manufacturing sector due to the severe violations of the trade and economic and transport-logistic relations: in June 2022 the output of the manufacturing industries dropped by 4.8% versus June of the previous year, while the wholesale trade turnover dropped by 18.2% and transport freight turnover – by 5.8%. The weakening of the dynamics from 103.9% in Q1 2022 to 103.6% in the Q2 against the corresponding figures of the previous year was demonstrated by the construction industry with an increase in prices for construction materials, growing cost of credits and unstable demand at the mortgage market. The situation was aggravated by a 9.8% contraction of

the consumer market with 2.1% contraction of the real money income and 5.4% contraction of the real wages compared to Q2 2021.

The adverse impact of external and internal factors determined 4.1% contraction of GDP in Q2 2022 in annual terms, 5.5% contraction of household final consumption and 13.8% contraction of gross savings as a result of inventory rundown. Although the contribution of net exports to GDP remained at a high level of 16.1% (5.9% in comparable prices) under the current structure of demand and prices, sanctions on financial transactions and the system of cross-border payments narrowed down the possibilities for transferring net income from foreign trade activities to support the domestic market. In the real sector, the sanctions significantly hampered international logistics, imports of high-tech goods and services, and Russian exports. The simultaneous drop in imports and the suspension/exit of foreign companies from the Russian market significantly complicated the situation in industries with a high level of dependence on imported intermediate and final goods, technologies and services.

Russian business, which had already accumulated some experience in resisting the 2014 restrictions and coronavirus lockdowns, reacted quickly enough to the disruption of production and technological, trade and transport-logistics chains and actively refocused on forming ties with new business partners in loyal markets for goods and services: in H1 2022, the value of exports of goods and services went up by 41.9% while imports dropped by 6.7% against the figures recorded the year before. With varying rates of change in foreign trade parameters, net exports in H1 2022 amounted to \$170.9 bn, 2.8 times higher than in the previous year. It should be noted that the damping effect on the output dynamics by types of economic activities was exerted by the anticipatory accumulation of imported and domestically produced material stocks in Q1 2022, which somewhat diminished the negative effect of the import reduction in Q2 by nearly 23.4% against the corresponding index of the previous year (*Table 1*).

The starting positions of H2 2022 formed the conditions for easing of monetary regulation, currency control, repatriation of proceeds and capital flows, and increased credit activity of non-financial corporations. The drop in GDP weakened to 3.7% in Q3 and stabilized in Q4 at a level close to that recorded a year earlier.

In Q3 2022, the differentiation of rates by basic type of economic activity intensified - the positive contribution of agriculture (+12.7% by Q3 2021) and construction (+5.2%) increased. In contrast, the indicators of infrastructure in this period illustrated the deepening of the decline in wholesale trade (-22.6%), freight transport turnover (-5.5%), with significant changes in the transport and logistics chains, the level of buyers' solvency and transaction costs.

The contraction of the retail trade turnover by 9.4% versus Q3 2021 was driven by the change in the consumer behavior with the decrease in the real disposable cash income by 3.1% and the inflationary pressure at the level of 14.3%.

The analysis of the quarter-by-quarter dynamics by types of economic activities in July-September of the last year showed the deceleration of the recession in the industry. In Q3 2022, the recession in annual terms was weakening to -1.8% in the manufacturing industries.

Table 1

Dynamics of main macroeconomic indicators in 2021–2022, in % on corresponding period of the previous year

	2021					2022				
	Year	Quarters				Year	Quarters			
		I	II	III	IV		I	II	III	IV
Domestic environment: production										
GDP	105.6	99.7	110.5	104.0	105.0	97.9	103.5	95.9	96.3	99.9
Output of goods and services by basic economic activity	105.9	100.1	113.1	104.7	106.1	98.7	104.5	96.3	97.3	96.9
Industry	106.4	99.7	111.1	107.1	107.9	99.4	105.1	97.4	98.8	97.0
Agriculture	99.6	100.3	100.1	94.6	107.1	110.2	105.4	108.4	112.7	109.4
Construction	107.0	104.4	111.0	104.0	108.2	105.2	103.9	103.6	105.2	106.9
Transport	105.6	100.5	110.2	107.0	104.8	97.4	104.2	97.0	94.6	94.4
Retail turnover	107.8	99.2	124.3	105.9	104.7	93.3	103.5	90.2	90.6	90.5
Paid services to population	116.7	96.8	153.2	116.4	112.6	103.2	107.8	100.0	101.3	101.6
Wholesale turnover	105.9	104.9	116.9	102.0	102.1	88.5	103.3	84.8	77.6	81.0
External environment										
Balance of foreign trade	221.9	93.4	238.2	314.2	319.9	166.0	307.7	263.9	138.4	73.8
Export of goods and services	144.2	101.6	158.5	163.0	158.5	114.2	160.4	127.6	104.0	84.6
Import of goods and services	124.6	104.6	140.9	132.5	123.0	91.0	112.6	76.6	87.5	90.9
Ruble exchange rate (Average for period) Rb/USD	73.6	74.34	74.2	73.47	72.59	67.5	84.73	66.01	59.40	62.3
Urals price, USD/bbl.	69.1	60.0	67.2	71.2	78.2	77.5	90.5	80.6	76.2	63.2

Sources: Rosstat, CBR.

The formation of new directions of exports of fuel and energy products was the basis of stabilization in the extraction of minerals. Production of oil and natural gas in this period dropped relative to the corresponding indicator of the previous year by 0.1%, but high fossil fuels prices supported the export component and domestic demand. Despite the strengthening of the sanctions restrictions on transportation and supplies to the traditional destinations, the overall dynamics of exports in value terms, taking into account the specifics of the commodity structure, in Q3 2022 remained in the positive area with a slowdown to 104.0%

against the exceptionally high level of the indicators of the corresponding period of the previous year.

The import downturn slowdown was driven by adjustment to the new outline of foreign economic relations: in Q3 2022, the import decline dropped to 12.5% against 23.4% in Q2 2022 against the figures registered a year earlier. Growth of the ruble real effective exchange rate by 23.6% in Q2 2022 and by 39.7% in Q3 as against December 2021 contributed to increase in the value of imports by quarters of 2022. In a situation where all the characteristics of foreign trade have changed, according to the balance of payments, the net export (balance) of goods and services fell from \$91.8 bn in Q2 this year to \$65.6bn in Q3, however, it was by 38.4% higher than in the same period of last year.

The situation in Q4, taking into account the different speed of adjustment of certain sectors of the economy, was influenced by positive results in construction and agriculture. The dynamics of exports of goods and services in Q4 shifted to the area of negative values (-15.4% against 2021). On the whole in 2022, the contribution of net exports (in current prices according to the SNA methodology) to GDP was 12.8%, against 5.1% in the acute phase of the Coronavirus pandemic in 2020 and 6.4% in the crisis situation in 2014. The balance of payments estimates that the value of exports of goods and services in 2022 came to \$628.1 bn (114.1% over the 2021 figure) and imports were \$345.8 bn (91.0%). The share of exports in the value structure of GDP in 2022 is 28.0%, and that of imports – 15.2%, a decline of 2.2 and 5.7 p.p., respectively, vis-à-vis the previous year.

Enhancement of dynamics differentiation by segments of the domestic market was apparent against the backdrop of the annual trend to reduce the scale of imports and to reduce their contribution to the gross resources in the economy. Final consumption in 2022 decreased by 0.6%, including households one by 1.8%, while the investment market showed an expansion of 4.6% (Table 2).

Table 2

Dynamics and structure of use of GDP use in 2019–2022

	As % of total, In current prices					% on previous year, In comparable prices				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
GDP	100	100	100	100	100	102.8	102.2	97.3	105.6	97.9
including:										
Final consumption expenditure	68.1	69.7	71.5	67.3	65.0	103.5	103.4	96.1	108.0	99.4
Gross savings	21.8	22.6	23.4	23.4	22.2	98.4	102.3	95.7	114.2	96.8
– gross fixed capital formation	20.6	20.9	21.5	19.9	20.6	100.6	101.0	96.0	109.1	105.2
– changes in inventories	1.2	1.7	1.9	3.5	1.6	n/a	n/a	n/a	n/a	n/a
Net exports	10.1	7.7	5.1	9.3	12.8	n/a	n/a	n/a	n/a	n/a
– export	30.8	28.5	25.5	30.2	28.0	105.6	100.7	95.8	103.3	n/a
– import	20.7	20.8	20.4	20.9	15.2	102.7	103.1	88.1	119.1	n/a

Source: Rosstat.

The drop in the industrial production in 2022 by 0.4% with the increase in minerals extraction by 0.8%, stabilization of the electric energy supply and the decrease in the manufacturing production output by 1.3% versus the previous year determined the structural changes in the internal market, generation of export and demand for imported goods and services.

The most significant contribution into the dynamics was made by the types of activity oriented mainly to the internal market.

In the consumer complex, the decline in domestic production and imports led to 6.6% slowdown in retail market turnover, including the food market by 1.5% and non-food market by 11.1%.

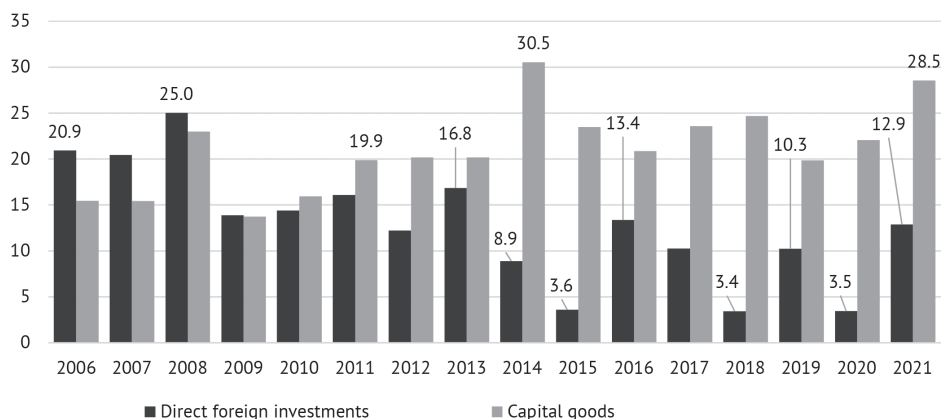
The agricultural growth was translated into productivity progress in the food industry (by 0.5% by 2021); in light industry the dynamics (-2.0%) was significantly influenced by the decline in imports, which account for almost 20% of intermediate consumption of the consumer production complex, as well as disruption of supplies from related industries. Besides, the risks of weakening of the domestic consumer demand increased, with real wages and real incomes falling by 1.0% in 2022 and inflationary pressure intensifying by the end of the year. Rather stable position in the domestic market in the difficult situation of 2022 was preserved by the production of drugs, which remained outside the zone of strict restrictions on trade in chemical and biological substances and had a certain potential for development due to the domestic production base of chemical products and substances. When assessing the state of drugs production, it should be noted that the exit of some foreign companies operating in the Russian market from investment in scientific and clinical research required the actualization of the domestic pharmaceutical market development program, taking into account the new realities of inter-country cooperation and domestic potential.

The nature of functioning of the metallurgical complex was driven by a change in the structure and volume of external demand with the reorientation of product flows to the markets of loyal partners and satisfaction of the domestic market demand for construction materials: production of finished metal products in 2022 went up by 7.0% and was supported by government measures to stimulate purchases with a response of producers to a temporary price restraint. This fact became especially important for the production of construction materials and the introduction of new technologies in construction.

The disruption and rupture of production, technological and trade chains under sanctions has complicated the functioning of export-oriented production of the timber and chemical complexes both due to the cut in supplies to foreign markets and the reduction in opportunities to purchase imported materials and reagents.

Scaling back of import of the investment goods and the components for the high- and medium-tech productions had an extremely painful effect on the dynamics of the machine-building complex, the drop in the production in which in 2022 came to 8.6% and in the fourth quarter it was at the critical level of 88.4% versus the corresponding period of the previous year.

It should also be noted that after the 2008 financial crisis, there was a change in the trend: foreign investments were replaced by imports of investment goods (*Fig. 1*).



Note. At the time of writing this material, data for 2022 was unavailable.

Fig. 1. Ratio between direct foreign investments and imports of capital goods to investments in fixed capital in Russian economy in 2006–2021, %

Sources: Rosstat, CBR.

In the complicated geopolitical situation, it allowed to maintain the participation both at the market of high-tech foreign goods and in the scientific-technological exchange, as well as to compensate for the pent-up internal demand amid the weak dynamics of the domestic production of investment goods. However, the development of this trend stepped up dependence on foreign partners and created potential threats to technological sovereignty. Average annual volumes of direct investment over the period of 2014–2021 were less than 2/5 of the corresponding figure of the recovery development of 2009–2013 and 1/4 of the maximum pre-crisis figure of 2008. The 2022 situation was aggravated by the intensification of capital outflows to the tune of \$223 bn versus \$74.2 bn a year earlier.¹

The most sharp reaction to the suspension/exit from the market of large foreign companies and the disruption of production and technological chains was registered in the production of motor vehicles, the drop of which in 2022 amounted to 44.7% against the previous year.² Readjustment to new markets of suppliers, components and model lines of goods took a long time, and only in August-October the production rates against the previous month of 2022 reached the positive values.

Difficulties in the production of electrical equipment (96.3% against 2021) are also related to the traditional orientation of business partnerships to large foreign companies of unfriendly states, which, when abandoning production and trade

1 The medium-term forecast of the Bank of Russia following the meeting of the Board of Directors on the key rate on February 10, 2023 URL: https://www.cbr.ru/collection/collection/file/43735/forecast_230210.pdf

2 Assessment of Russia's dependence on imports of intermediate products. Series of reports on economic research. No. 106. December 2022. URL: https://www.cbr.ru/Content/Document/File/144138/wp_106.pdf

interactions with them, hindered the recovery of the output of these products, despite the production capacity created in the industry in recent years.

The diversified system of production, technological and trade-logistical interactions of domestic production of computer and electronic equipment in the foreign market determined the conditions for their fairly rapid adjustment to the sanctions restrictions, in particular due to mechanisms of parallel imports, strengthening of traditional partnerships in loyal markets. In 2022, the production of computer and electronic equipment went up by 1.7% relative to the previous year, but the instability of quarterly and monthly dynamics requires a cautious attitude to the assessment of this indicator.

The dynamics of machinery and equipment production, which was actively supported by the state purchases, remained in the field of positive values according to the results of the year. However, violation of intra- and inter-branch connections of machine-building production, difficulties with service maintenance of imported equipment and shortage of qualified personnel resulted in high fluctuations of monthly dynamics. The same reasons explain the drop in the production of other types of transport and repair of machinery and equipment. The unbalanced movement of stocks, high differentiation in capacity utilization, reduced supplies of imported materials, components and finished products, reaching over 40% of intermediate demand (as of 2019) had a negative impact on both the machine-building complex itself and the related economic activities (*Table 3*).

Table 3

Dynamics of production by extraction and manufacturing sectors of economic activity in 2021 and 2022, in % to corresponding quarter of the previous year

	2021					2022				
	Year	Quarters				Year	Quarters			
		I	II	III	IV		I	II	III	IV
Extraction of mineral resources	104.2	92.9	107.5	108.7	108.5	100.8	107.4	98.9	100.1	97.5
Production of crude oil and natural gas	102.6	90.6	105.4	107.8	108.4	100.7	107.5	98.0	100.0	97.5
Manufacturing activity	107.4	102.7	113.6	105.7	107.9	98.7	104.9	96.1	98.2	96.6
Consumer complex:										
– food industry	104.6	100.6	103.5	104.9	106.3	100.5	104.0	99.1	98.8	100.6
– textile, clothing and footwear industry	111.6	104.3	118.3	101.1	102.2	98.0	98.9	93.9	97.8	101.0
Timber processing complex	108.7	102.3	114.9	108.6	109.3	96.3	106.1	96.5	93.1	90.4
Chemical complex	108.7	110.9	109.1	104.5	105.4	98.5	105.9	98.5	98.3	92.8
Petrochemical complex	103.6	93.4	108.5	105.1	108.7	99.6	103.0	94.6	100.8	100.1
Building complex	109.3	97.7	113.8	107.1	109.7	101.1	111.0	101.8	98.0	92.0

	2021					2022				
	Year	Quarters				Year	Quarters			
		I	II	III	IV		I	II	III	IV
Metallurgical complex	104.1	95.7	108.3	101.1	103.3	101.1	106.0	96.1	103.4	99.8
Machine building complex	111.8	112.7	128.1	103.0	104.7	91.4	102.8	89.7	87.6	88.4

Source: Rosstat.

The reduction and radical changes in the movement of commodity flows in the domestic and foreign markets have exacerbated the problems of insufficient development of transportation and logistics infrastructure and financial and insurance services. The growth of costs for transportation and logistics, disruption of the rhythm of cargo delivery have become critical factors in adjusting the economy to the new realities of inter-regional domestic and foreign trade and production relations. In 2022, the turnover of freight transportation declined by 2.6%, wholesale trade – by 11.5%, and the contribution of financial and insurance activities decreased to 4.7% of GDP against 5.3% of GDP a year earlier. This has determined the intensification of government policy on infrastructure development: transportation, logistics facilities located in the vicinity of transportation hubs, as well as expanding opportunities for multimodal transportation, especially in the eastern direction.

The economy's adjustment to the new price proportions in the domestic market and to the ruble exchange rate was accompanied by a change in the structure of GDP by income as a result of a decrease in its share of payments to 39.6% of GDP and net taxes on imports and production to 8.2% against 40.1% and 10.0% respectively a year earlier. The economy's gross profits and gross mixed income in the GDP structure rose to its highest level in the past decade of 52.2% in 2022. This being said, it should be noted that the adaptive mechanisms of business regulation and fulfillment of social obligations allowed to maintain stability in the labor market with a decrease in the general unemployment rate from 4.1% in Q1 to 3.7% in Q4 (Table 4).

Table 4

Structure of GDP by revenue source in 2021–2022, % to GDP

	2021					2022				
	Year	Quarters				Year	Quarters			
		I	II	III	IV		I	II	III	IV
GDP										
Compensation of employees	40.1	46.9	43.6	39.0	37.6	39.6	41.7	42.1	39.7	35.9
Net taxes on production and imports	10.0	11.9	10.6	10.0	10.1	8.2	11.1	5.6	7.8	8.4
Gross profit of economy and gross mixed income	49.93	41.2	45.8	51.0	52.3	52.2	47.3	52.3	52.5	55.7

Source: Rosstat.

If the change in net taxes on production and imports was influenced by the reduction of the scale of foreign supplies, the dynamics of gross profit was driven by the transfer of growing production costs and transportation costs to prices with the persisting imbalance of supply and demand.

In H1 2022, producer prices for industrial goods increased by 25.6% in annual terms this year (by 36.1% in mining, 23.0% in manufacturing) and by 15.6% in construction.

Prompt measures to support backbone enterprises, import/import substitution of common and critical goods and technologies, permission for parallel imports, and the formation of alternative transportation and logistics routes relieved acute tension in the domestic market. Sufficiently rapid easing of inflationary pressure and the formation of a weak monthly deflationary wave in H2 2022 allowed four times in Q2 to reduce the key rate – from 17.0% per annum (11.04.2022) to 9.5% (14.06.2022), twice in Q3 – to 7.5% per annum (19.09.2022) and keep it at this level until the end of the year (Table 5).

Table 5

**Financial conditions: key rate and price index in 2021–2022,
% to the corresponding period of the previous year
(annual data on December previous year)**

	2021					2022				
	Year	I	II	III	IV	Year	I	II	III	IV
Key rate (quarter-end), % per annum	–	4.5	5.50	6.75	8.50	–	20.0	9.5	7.5	7.5
Consumer prices	108.4	102.1	102.0	101.1	102.9	111.9	110.0	101.3	99.1	101.3
Producer prices										
Industrial goods	128.5	110.8	108.2	103.1	104.0	96.7	110.2	95.0	96.0	96.3
Extraction of mineral resources	159.2	125.0	110.1	103.1	112.2	84.7	123.3	80.0	92.6	92.7
Manufacturing	123.5	108.1	109.2	102.6	102.0	99.1	106.9	100.4	95.5	96.6
Agricultural products	113.5	106.2	100.9	100.9	105.0	95.8	102.5	99.1	96.7	97.6
Capital goods	108.8	101.1	102.0	102.6	102.1	114.7	108.9	102.9	101.1	101.3

Sources: Rosstat, CBR.

Decline in inflation, key rate and implementation of the anti-sanction fiscal policy supported the domestic market. The level of economic activity achieved in 2022 determined the starting conditions for the next year, but it is necessary to take into account the continuing risks of changes in the value of Russian exports and redistribution of profits in the economy through tax channels, as well as the influence of exchange rate policy on the dynamics of imports of critical technologies and goods.

3.1.2. Domestic market: consumption and households' income

In 2022, the dynamics of social parameters was characterized by a restrained decline in household consumption with the implementation of an expanded package of systemic measures to support the population. The increase in government spending on final consumption played a key role in mitigating the shocks of the inflationary wave, reducing tensions in the labor market and maintaining social stability of the population. At the end of 2022, real disposable incomes of the population, real wages and real size of assigned pensions decreased by 1.0%. In 2022, final consumption expenditures were 3.2% higher than in pre-pandemic 2019, including households by 1.6% and public administration by 7.8% (Table 6).

Table 6

Dynamics and structure of expenditure on final consumption in 2018–2022

	In % of total, In current prices					In % to the previous year, In comparable prices				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
GDP	100	100	100	100	100	102.8	102.2	97.3	105.6	97.9
Including final consumption	68.1	69.7	71.5	67.3	65.0	103.5	103.4	96.1	108.0	99.4
– households	50.0	51.2	50.8	49.2	46.9	104.3	103.8	94.1	110.0	98.2
– public administration	17.7	18.1	20.1	17.5	17.6	101.3	102.4	101.9	102.9	102.8

Source: Rosstat.

When analyzing the dynamics and structure of the population's income, one should take into account the problems accumulated over the last decade of slowing down the indicators of living standards that were partially solved by indexation of wages in the public sector, increasing the minimum wage and social benefits. The simultaneous increase in wages and the expansion of social guarantees has determined the conditions for reducing the share of the population with incomes below the poverty line in the total population from 12.3% in 2019 to 11.0% in 2021 and 10.5% in 2022.

In the structure of the population's income in nominal terms, the change in the share of remuneration of labor compared to 2020 was compensated by increased contribution of social payments relative to the pre-demand year 2019. The dynamics of income from entrepreneurial activity was influenced by changes in the competitive environment in the domestic market and the appearance of new niches for economic activity of domestic businesses of various institutional structures. The decline in property income was partly due to the weakening activity of the population in the securities and real estate market (Table 7).

Table 7

Structure of cash income generation in 2019–2022, in % of total

	Total	Including					
	Cash income	Incomes from entrepreneurial activity	Labor wage	Employees' wages as part of labor wage	Social payments	Real estate incomes	Other cash incomes
2019	100	5.9	57.3	–	18.8	5.1	12.9
2020	100	5.2	57.2	42.1	21.4	5.8	10.4
2021	100	5.5	57.3	41.9	20.6	5.7	10.9
2022	100	6.2	57.2	41.7	20.7	5.0	10.9
Q1	100	6.5	66.2	48.7	20.5	4.5	2.3
Q2	100	6.0	56.5	42.0	21.2	4.3	12.0
Q3	100	6.4	54.6	38.5	21.7	5.1	12.2
Q4	100	5.8	53.9	39.4	19.7	5.9	14.7

Source: Rosstat.

The reaction of the population to changes in income levels throughout 2022 was extremely heterogeneous. In the context of high uncertainty in Q1 2022, the current spending hit 92.7% of the population's income, while savings dropped to 8.1% due to the reduction in deposits, transactions in the securities and real estate markets, the growth of debt on loans and increased demand for cash. However, the population reacted to the changes in the conditions of the monetary regulation in Q2 2022 by the renewal of the saving model of the consumer behavior. The investment potential of the households was formed while the trend for the increase in the share of deposits in the incomes of the population and in the GDP remained flat. According to the results of the year, the share of savings in incomes of the population increased to 7.3% against 4.3% a year earlier (Table 8).

Table 8

Structure of household income aimed at current expenditure and savings, 2019–2021, in % of total

	2019	2020	2021, quarters				2022, quarters					
	Year	Year	Year	I	II	III	IV	Year	I	II	III	IV
Incomes, total	100	100	100	100	100	100	100	100	100	100	100	100
Consumer expenditure Including:	80.9	75.7	80.2	87.6	80.5	81.7	73.8	77.7	92.7	76.2	77.9	68.8
– purchase of goods	59.6	58.4	61.1	66.8	61.6	61.9	56.2	59.1	70.6	58.4	58.8	52.0
– payment of services	18.3	16.3	17.8	19.9	17.9	17.7	16.3	17.5	20.9	17.0	17.9	15.5
Mandatory payments and contributions	15.2	15.2	15.5	15.4	15.5	15.1	15.9	15.0	15.4	13.7	15.5	15.5
Savings growth, total	3.9	9.1	4.3	-3.0	4.0	3.2	10.3	7.3	-8.1	10.1	6.6	15.7

	2019	2020	2021, quarters				2022, quarters					
	Year	Year	Year	I	II	III	IV	Year	I	II	III	IV
growth (+), decline (-) savings in deposits, securities, real estate, debt on loans and in accounts of individual entrepreneurs	3.4	4.6	3.4	-5.2	3.6	2.3	10.0	5.5	-12.8	12.8	5.1	11.9
growth/decline of cash on hand	0.5	4.5	0.9	2.2	0.4	0.9	0.3	1.8	4.7	-2.7	1.5	3.8

Source: Rosstat.

However, the trend towards an increase in investment activity at the real estate market, despite the prolongation and expansion of mortgage lending programs, including concessional lending, did not get momentum in H1 2022. In 2022, in the context of weakening dynamics of cash income, there was a slowdown of lending activity, including in the mortgage market. The share of loans in personal income dropped by 0.9 p.p., including mortgage loans – by 2.0 p.p. (Table 9).

Table 9

Households investment potential and activity in 2015–2022

	2015	2016	2017	2018	2019	2020	2021	2022*
	in % to GDP							
Deposits of individuals	27.9	28.3	28.3	27.4	27.7	30.6	26.5	27.1
Loans granted to individuals	12.9	12.6	13.3	14.3	16.1	18.7	18.5	18.1
Including housing mortgages	1.4	1.7	2.2	2.9	2.7	4.1	4.2	3.2
	in % to households cash income							
Deposits of individuals	43.7	44.5	46.2	48.5	48.7	51.8	49.6	51.9
Loans granted to individuals	10.9	19.9	21.7	25.4	28.4	31.6	35.6	34.7
Including housing mortgages	2.2	2.73	3.6	5.2	4.7	7.0	8.1	6.1

* Preliminary data.

Source: CBR.

Under a favorable development and the formation of attractive financial instruments, accumulated funds of the population in liquid form will return to the real estate market and become a significant factor in the implementation of investment programs, including housing construction.

3.1.3. Investment and construction complex: structural features 2022

The dynamics and structure of the investment and construction activity in 2020–2022 was formed in the context of restrictions on the capital and capital goods movement, transformation of the production and technological interactions, changes in the ruble exchange rate versus foreign currencies. Despite the pressure of external factors, the government measures aimed at the support of the internal demand and the active use of the instruments of financial and credit regulation

allowed to dampen the influence of the unfavorable environment on the dynamics of the investment in fixed assets.

A slight decline in investment in fixed assets during the acute pandemic period of 2020 (-0.5% on the previous year) and a dynamic recovery of business activity in the construction and investment complex in 2021 (+8.6%) determined the basic conditions for the dynamics of investment in fixed assets.

In 2022, macroeconomic situation was driven by the continued contribution of the investment demand into the dynamics of the domestic market while the measures aimed at the decrease of the risks of the financial instability were implemented. Overall, the rate of investment in fixed capital in 2022 was 104.6%, in construction – 105.2%, with GDP at 98.3% and the final consumption of households – 97.6% relative to the figures of the year before.

The dynamic development of housing construction and social infrastructure facilities was a feature of the Russian economy in 2019–2022. The share of investments in the construction of residential buildings was 12.1% of the volume of investments in fixed assets. Residential space commissioning in 2022 was at an all-time high of 102.7 million square meters, an increase of 11.0% over the previous year. The total residential floor area in houses built by individual developers was 57.2 million square meters, or 55.7% of the total housing commissioned in 2022 (*Table 10*).

Table 10

**Dynamics of investment and construction complex in 2019–2022,
in % to the corresponding period of the previous year**

	2019	2020	2021	2022	Quarters			
					I	II	III	IV
GDP	102.2	97.3	105.6	97.9	103.5	95.9	96.3	99.9
Investment in fixed assets	102.1	99.9	108.6	104.6	113.8	103.3	102.3	103.3
Construction	102.1	102.1	107.0	105.2	103.9	103.6	106.9	100.3
Commissioning of living space	106.2	100.2	112.7	111.0	164.6	124.8	101.7	76.8

Source: Rosstat.

The dynamics of investment in fixed assets throughout 2022 was extremely unstable. In Q1 2022, taking into account the fulfillment of obligations under the previously concluded construction contracts, the growth of investments in fixed assets by 13.8% hit the maximum quarterly values for the last years. The investment activity in Q2–Q4 was considerably supported by the dynamic expansion of public investments in the priority projects, which compensated for the restraint of the private sector in the environment of the risks of the sanctions pressure on the earlier concluded investment contracts and import of capital goods.

In 2022, the proportion of investments in the objects of state property increased to 16.9% (+0.7 p.p. as compared vs. 2021 and +2.1 p.p. vs. 2018) in the structure of investments in fixed assets with the outpacing dynamics of the

investment support of the federal property structures. In 2022, investments in fixed assets of the private Russian property increased by 4.0 p.p. as compared to the previous year, but ceded leadership in the dynamics of investment activity to the economic subjects of the federal property. In 2022, structural changes by institutional investors were driven by the drop of investments in the structures with various forms of foreign ownership by 16.2% (in actual prices), including the decrease in their proportion in the structure of investments by 3.5 p.p. as compared to the previous year (*Table 11*).

Table 11

**Share of investments in fixed capital by form of ownership in 2020–2022,
in actual prices, %**

	Investment in fixed assets			For reference only, in % to GDP		
	2020	2021	2022	2020	2021	2022
Investment in fixed assets	100	100	100	18.9	17.2	18.4
Including:						
Russian ownership	87.4	86.0	90.2	16.6	14.8	16.6
Including:						
State ownership	17.5	16.2	16.9	3.3	2.8	3.1
Federal ownership	8.2	7.5	8.3	1.6	1.3	1.5
Ownership of subjects of the Federation	9.3	8.7	8.6	1.8	1.5	1.6
Municipal ownership	2.9	2.8	2.7	0.5	0.5	0.5
Private ownership	60.4	61.6	65.6	11.4	10.6	12.1
Mixed Russian ownership	5.8	4.4	4.1	1.1	0.8	0.7
State corporations ownership	0.8	1.0	0.9	0.2	0.2	0.2
Foreign ownership, joint Russian and foreign ownership	12.6	14.0	9.8	2.4	2.4	1.8
Foreign ownership	5.7	6.5	3.0	1.1	1.1	0.5

Source: Rosstat.

Financial environment considerably influenced the dynamics of investment activity in 2021–2022. Change in the key rate in 2021 from 4.25% to 8.5% and the surge to 20% in Q1 2022 resulted in the acceleration of price growth for goods and services of the investment purpose to 9.9% per annum in March 2022. The state operational measures of financial support and regulation of the construction and investment activity, such as restructuring of credits for big business,¹ changes in prices of the state contracts due to the increase in the cost of resources, adjustment of concessional mortgage programs,² acceleration of the output of the construction materials into the domestic market,³ reducing the time for approval of territorial planning documents⁴ made it possible to support business activity in the construction sector.

1 RF Government Edict of September 29, 2022 No. 2847-p.

2 RF Government Decree of May 31, 2022 No. 993.

3 RF Government Decree of April 19, 2022 No. 701; RF Government Decree of October 04, 2022 No. 1759.

4 RF Government Decree of October 21, 2022 No. 1878.

Changes in the conditions for financing of investment programs in Q2–Q4 2022 were driven by an increase in the volume and proportion of the budget funds, which enabled to partially compensate the changes in the demand for the bank credits while the interest rates remained high and the dynamics of the use of own funds of enterprises and organizations for the investment purposes weakened. The proportion of own funds of enterprises and organizations in the structure of investments in fixed assets in the economy as a whole made 54.2% in 2022, dropping by 1.8 p.p. vs. the previous year. The state support of the restructuring of credits taken at the floating rate enabled to support the investors and the construction companies, which found themselves in a difficult situation due to the increase in prices and considerable growth of the debt servicing expenses. Compared to 2021, the increase in the share of budget and borrowed funds from other organizations in the sources of funding partially compensated for the weakening dynamics of bank loans and enterprises' own funds (*Table 12*).

Table 12

**Investment in fixed assets by sources of financing
in 2018–2022, in % of total**

	2018	2019	2020	2021	2022
Investment in fixed assets	100.0	100	100	100	100
Own funds	53.0	55.0	55.2	56.0	54.2
Borrowed funds Including:	47.0	45.0	44.8	44.0	45.8
Bank loans	11.2	9.8	9.9	11.0	9.7
Of which:					
Russian banks	6.8	7.8	8.1	9.1	8.4
Foreign banks	4.4	2.0	1.8	1.9	1.3
Borrowings from other organizations	4.3	4.8	4.9	4.5	5.4
Investment from abroad	0.6	0.4	0.3	0.4	0.3
Budget funds	15.3	16.2	19.1	18.3	20.2
Of which:					
Federal budget	7.6	7.6	8.7	8.1	9.6
RF subjects budgets	6.6	7.4	9.2	9.0	9.3
Local budgets	1.1	1.2	1.2	1.2	1.3
State extrabudgetary funds	0.2	0.2	0.2	0.2	0.2
Other	15.4	13.6	10.4	9.6	10.0

Source: Rosstat.

The critical reduction of the raised direct foreign investment in the Russian economy with the weakening dynamics of the supplies of the investment goods, technologies and imported equipment maintenance services against the backdrop of the 2022 geopolitical sanctions and high uncertainty decelerated the economic dynamic.

The movement and structure of the investment and construction activity has been formed in recent years against the backdrop of toughening competition on the world markets, restrictions on the movement of the imported capital goods,

changes in the ruble exchange rate versus foreign currencies. However, despite the pressure of the external factors, the state measures and the active use of the instruments of financial and credit regulation allowed to mitigate the influence of the unfavorable environment.

In this regard, the distribution of risks between the state, private business and the population was of fundamental importance. The state investment policy supported the demand for technological and institutional innovations and, at the same time, determined the correction of mechanisms of attraction of private investors through norms of special investment contracts,¹ agreements on protection and encouragement of capital investments² and formation of the extended package of mortgage programs. Changing the conditions for interaction between the state and private investors has become a significant component of competition on the domestic and foreign markets of capital, goods and services. The model of flexible investment strategic cooperation of business, population and state contributed to the identification of limitations and concretization of measures and instruments of reaching the trajectory of effective growth of investments in fixed assets.

An innovation in strategies and programs for stimulation of investment activity was a shift in the emphasis on the balance of tangible and human resourcing of capital investment, as well as flows of monetary and financial resources. The institutional aspect of the investment policy focused on the formation of the adequate structure and practice of the state regulation and corporate management as well as expansion of participation of development institutions.

Strategic initiatives to create high-tech products are supported by a modified mechanism of special investment contracts, interregional offset contracts (with counter investment commitments under guaranteed purchases); new approaches to import substitution in industry based on large priority projects. Revamping of technological potential of the Russian economy relies on systemic measures of engineering education development and transfer of scientific research results to the real economy, provision of financial resources to fast-growing, high-tech companies.

It is important to expand the norms of the agreement on protection and encouragement of capital investments for projects of innovative nature and the possibility of its use with the forms of investment support mechanisms of territories of advanced development, special economic zones, public-private partnerships and concessions. Harmonization of the principles of activity and accounting of budgetary obligations within the framework of these organizational-legal structures determines the umbrella mechanism of support for private investors.

Sectoral measures to support investment activity in 2022 were effective in relation to a limited range of activities, the main focus shifted to the identification

1 Federal law "On industrial policy of the Russian Federation" of December 31, 2014 No. 488-FZ (version of October 07, 2022 No. 390-FZ). URL: <http://kremlin.ru/acts/bank/39299>

2 Federal law "On protection and promotion of investment in the Russian Federation" of April 01, 2020 No. 69-FZ (version of June 28, 2022 No. 226-FZ). URL: <http://www.kremlin.ru/acts/bank/45357>

of imbalances in the reformatting of significant projects. In terms of industries, in January-September more than 60% of the investments accounted for the extraction of minerals, projects in the sphere of transportation, storage, energy infrastructure and manufacturing industries. Investments in oil and natural gas extraction surged by 9.0%. While fulfilling the guaranteed obligations under the previously signed contracts for supply and maintenance of the technological equipment and the accumulated material reserves, the exit of foreign investors and the suspension of foreign companies has not yet had a significant impact on the continuation of the previously launched projects. At the same time, there have been adjustments to deadlines due to the postponement of imported equipment supplies or exit from projects of contractors from unfriendly states in the associated petrochemical and oil refining facilities.

Adjustment of investments to the changing movement of technological development, lifted the importance of the factors of transportation and logistics, information and communication, social infrastructure, competences and skills of the labor force.

Regarding transportation and storage, the investments in fixed assets surged by 19.2% in 2022. In the environment of reorientation of the freight flows from the western to the southern and eastern directions, the investments in the development of the port and railway infrastructure gained importance. The investments in the activity of the freight railway transportation soared by 25.6% as compared to 2021. Financing of the Complex plan of modernization and expansion of the trunk infrastructure in 2022 spiked by 24.6% as compared with 2021.

The processing industry demonstrated the decrease in the investment activity by 6.2% versus of the previous year due to the difficulties with the equipment supplies. The factors limiting the dynamics of the investments are the decline in demand for the investments in the export-oriented segment with the sharp reduction of the enterprises' own funds in the sub-products of timber processing, chemistry and metallurgy complexes.

The machine-building complex is in a difficult situation, whose share in the investments in fixed assets on the whole throughout the economy dropped to 2.1% versus 2.8% in 2021. The sharpest drop in financing of investment programs is recorded in the production of motor vehicles – up to 44.2% and energy equipment – up to 80.1% from the level of 2021.

In industries with the potential for import substitution, the impact of investment is usually manifested over a long-term timeframe. Operational short-term measures associated with changes in transportation and logistics links and partnerships with new suppliers affect the indicators of commodity output and are weakly related to investment programs.

The accumulated structural constraints of the investment and construction complex form the increased requirements for the determination of trends in the reproduction of fixed capital and the development of machine-building and associated production of construction materials, as well as the production capacity of construction itself.

In spite of the fact that the majority of basic productions in the last 20 years underwent rather active modernization with the outstripping growth of expenditures on renewal of machinery, equipment and transport vehicles, it should be admitted that in general the condition of fixed assets does not correspond to dynamic changes in demand for new product lines and production technologies. With the changes in the access to the world market of the investment goods, structure and dynamics of prices, exchange rate of the national currency there was a gradual shift in demand to the segment of the domestic investment goods. However, the production possibilities of the Russian machine-building complex did not make it possible to meet the demand for some types of technical means entirely, especially in the branches of industry highly dependent on the foreign technologies and ready-made investment goods, which became a factor slowing down the movement of construction and investment complex. The proportion of the import in the gross fixed assets accumulation on the whole throughout the economy came to 18.7% (2019), while in the machine-building complex it exceeded 55% and in the construction complex – 38.5%.

In 2022, the starting level of the capacity utilization on the whole throughout the economy amounted to 65% and in the export-oriented complex of the manufacturing industries – 80%; in the investment complex this figure was estimated to be approximately 40%. The average rate of fixed assets renewal in the economy being at the level of 8.3% (2021), in the manufacturing industries this figure stood at 9.6%, and in machine-building complex it was in the range of 6.3–12.2% by types of activity with high characteristics of the accumulated capital wear and the share of obsolete fixed assets. In the branches of natural monopolies (electric power and transportation), which account for more than 1/4 of fixed capital stock, the renovation ratios were somewhat lower than the average indicators for the economy, which raised the risks of unbalanced development of the transportation and energy infrastructure with other types of economic activity and regions. Increase in the risks associated with the renewal of capital assets updated the development of the concept of technological development for the period up to 2030, which will determine measures of support for institutions of innovative development and active involvement of private business in the implementation of investment projects aimed at ensuring the development of investment productions.

The gap in material and engineering support of capital investments and construction works in industrial and residential construction violates the rhythm of commissioning and leads to an increase in the volume of unfinished construction (*Table 13*).

Amid the 2022 sanctions, the issues of fulfilling construction plans in both housing and production construction demanded the involvement of idle production capacity of the construction industry, machine-building industries focused on the manufacture of machinery, equipment and technical means for the housing and utilities sector, while forming new channels and alternative foreign suppliers of engineering equipment and materials for construction projects. Reducing the share of machinery and equipment in the type structure of investment in fixed

Table 13

Structure of investments in fixed capital by types of major funds 2019–2022, in % of total (excluding small businesses and informal activity parameters)

	2019	2020	2021	2022
Investment in fixed assets, total	100.0	100.0	100.0	100.0
Including:				
Residential buildings and premises	14.4	14.5	12.9	12.1
Buildings (except for residential) and facilities	38.4	37.5	37.0	40.7
Machinery, equipment, means of transportation	37.0	37.1	39.5	36.4
Intellectual property	3.3	4.0	4.4	4.7
Other	6.9	6.9	6.2	6.1

Source: Rosstat.

capital with changes in the proportions of housing and industrial construction increases the risks of technological modernization programs of the industrial sector and related infrastructure. Creation of conditions for the development of own industrial base of the investment complex will have a multiplicative effect on the processes of economic strengthening and expansion of technological capabilities and creation of new jobs.

3.2. Sectoral dynamics of industrial production in 2022¹

In 2022, The trend component of the industrial production index exhibited growth, which was provided by both the extractive sector and the manufacturing industry. In the first case, owing to high prices and growth of external demand for energy resources. In the second case, due to the production of goods replacing foreign brands, which curtailed their activities on the Russian market after the launch of the SMO, as well as due to the growth of demand for intermediate products for the state defense order.

For correct interpretation of the existing trends in separate sectors, it is necessary to decompose their output into components: calendar, seasonal, irregular and trend component;² the interpretation of the latter is of substantial interest. The Gaidar Institute experts made seasonal adjustment of the series of indices of all the branches of industrial production for 2003–2022 and singled out the trend component³ on the basis of the current statistics published by Rosstat on the indices of production in industrial sectors of the economy.

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2 “Trend component” is a well-established term used in the literature, but it should be noted that this component is not a “trend” in the strict sense used in econometrics when analyzing time series: in this case it is the residual from the separation of calendar, seasonal and irregular components from the series. “Trend component” is incorrect to use for time series forecasting (for most of the indexes of industrial production it is non-stationary in levels (and stationary in differences), but it can be used for interpretation of short-term dynamics and its comparison with the events that took place.

3 The trend component was extracted with the Demetra package using the X12-ARIMA procedure.

The results of series processing for the index of industrial production as a whole are shown in *Fig. 2*. *Fig. 3* presents the results for the aggregated indices of the extractive and manufacturing sectors, as well as the production and distribution of electricity, gas and water. For the rest of the series, the decomposition results are presented in *Table 14*.

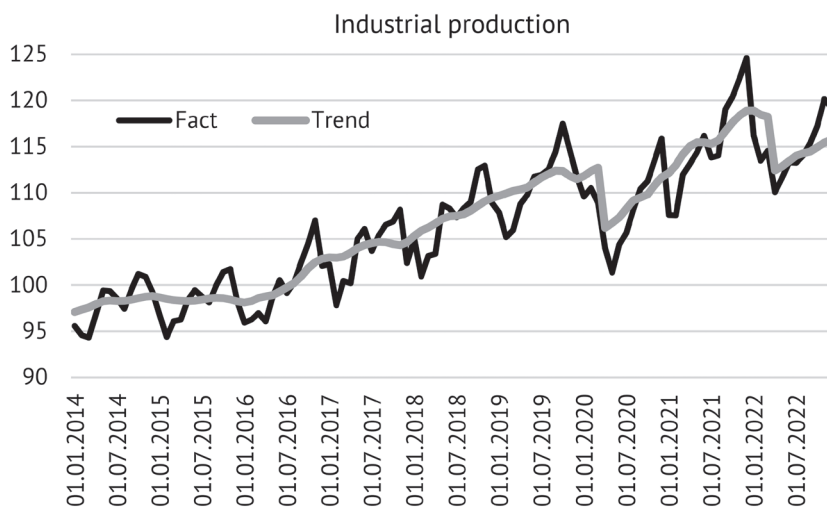
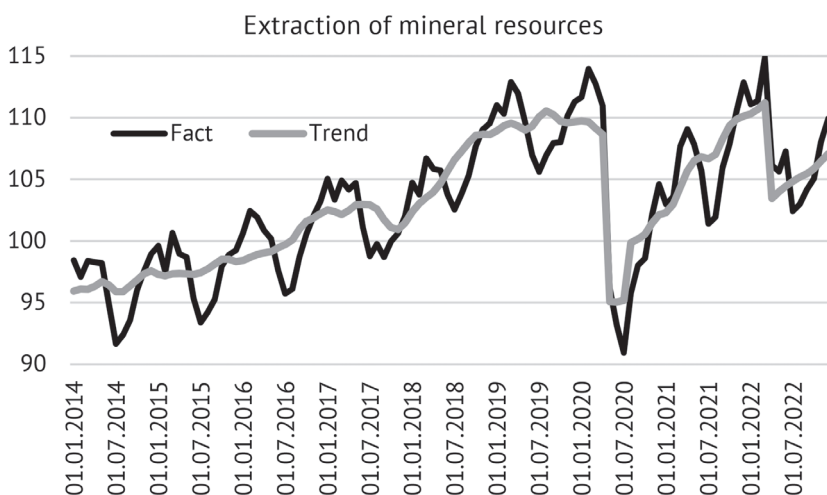


Fig. 2. Dynamics of the industrial production index in 2014–2022 (Actual data and trend component), in % to 2016 annual average

Sources: Rosstat, own calculations.



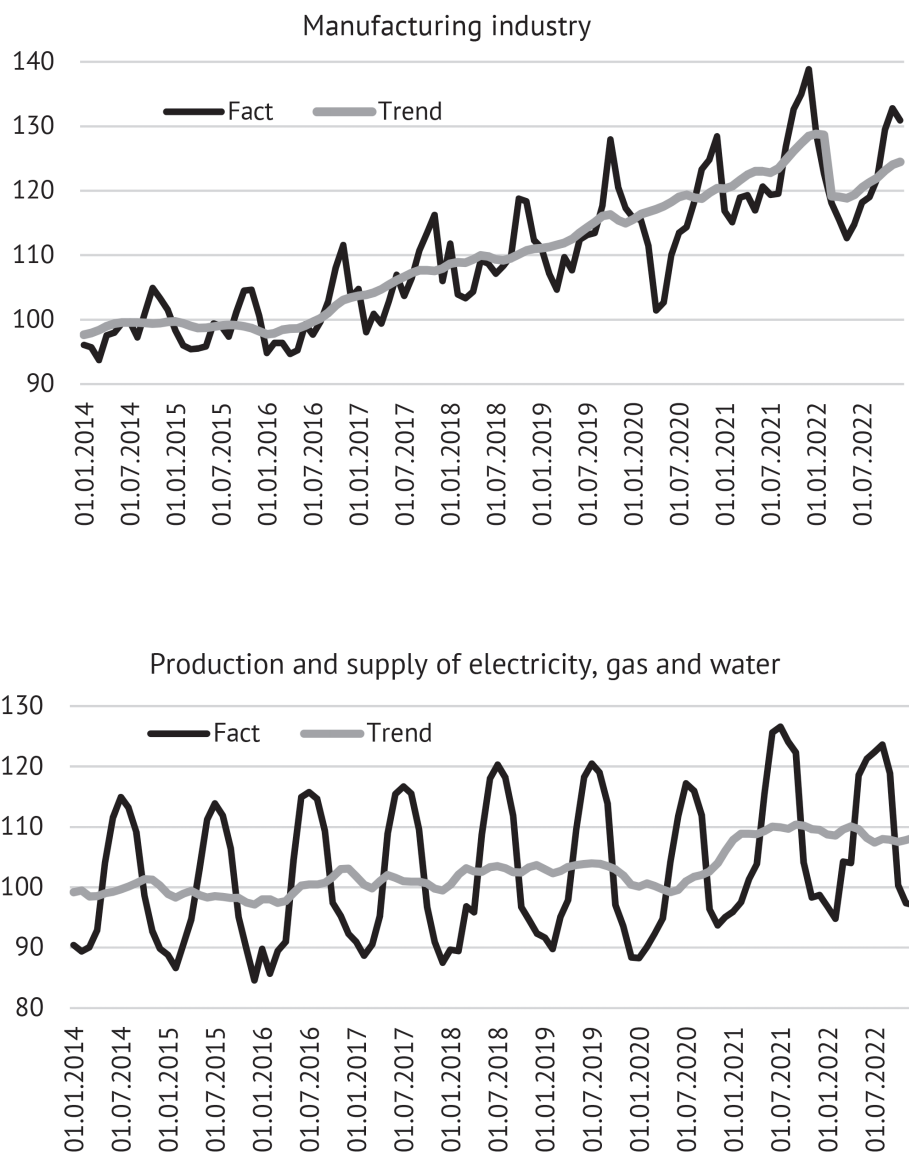


Fig. 3. The dynamics of production indexes by industry in 2014–2022 (Actual data and trend component), in % to 2016 annual average

Sources: Rosstat, own calculations.

3.2.1. Dynamics of the industrial production index in Q1

According to the results of Q1 2022, the trend component of the industrial production index showed about zero growth rates. The main contribution was made by the extraction of fuel and energy minerals due to the growth in oil, gas and coal production. The stabilizing factor in the oil industry was the OPEC¹ deal, which was extended until the end of April 2022. In the gas industry, growth in the period under review was ensured by supplies to China via the Power of Siberia pipeline (including on the back of the reduction of LNG exports to China from the USA and Australia) and domestic demand (economic recovery after the pandemic). The growth in coal production is associated with increased demand in Europe and Asia-Pacific markets, which was facilitated by higher natural gas prices, making coal-fired generation competitive. The growth in demand from Asian countries has not been fully realized due to the existing infrastructural constraints in the Far East, which do not allow the entire additional volume of coal to be transported to Asia and Pacific markets by rail. In March, the existing infrastructural constraints were supplemented by competition with other cargoes, the transportation of which was reoriented to the eastern direction following the imposition of sanctions on supplies of Russian products against the backdrop of the events in Ukraine.

The trend component of the manufacturing sector in Q1 2022 showed a slow decline, the main positive contribution to the dynamics continued, as in H2 2021:

- production of food, textile and leather products. The shift of consumer demand to a lower price segment (as a rule, represented by Russian-made products) was supplemented by the factor of rush demand due to the departure from Russia and the temporary shutdown of some foreign companies triggered by the launch of SMO;
- production of chemical products mainly due to increased domestic and foreign demand for pharmaceuticals, medical materials, and fertilizers;
- machine-building – mainly owing to the growth of agricultural machinery. High world prices on agricultural products in 2021 provided additional funds to their producers, who had the opportunity to invest these funds in the renewal of the machine park, which increased the demand for exports of Russian agricultural equipment and, accordingly, its production volumes. Besides, consumers intensified purchases of equipment due to the apprehension of its appreciation caused by the expected increase in utilization fees, exchange rate fluctuations and increase in prices for metals and polymers observed on the world and domestic markets in 2021. Since March 2022, the restructuring of supply chains, search of new partners (manufacturers and suppliers of components), and other factors constraining export growth of agricultural equipment.

Wholesale and retail sales grew: wholesale trade was mainly due to increased sales of medicines and medical supplies, chemical fertilizers, and agricultural

1 Oil production increases by 400,000 barrels per day each month. This increase is extended until the end of April 2022 26st OPEC and non-OPEC Ministerial Meeting concludes // OPEC. 02.03.2022. URL: https://www.opec.org/opec_web/en/press_room/6830.htm

equipment; retail trade was driven by increased sales of nonfood products due to a rush in demand for the products of foreign companies that were temporarily shutting down operations in Russia.

The trend component of paid services to the population maintained negative dynamic. The trend component of freight turnover showed about zero growth rates. The main reduction in the freight base was owing to a decrease in export shipments as a result of sanctions and restrictions imposed, as well as the Russian government's retaliatory actions.

The sanctions imposed on Russia at the beginning of 2022 did not affect the dynamics of most industrial sectors during the first quarter. The negative impact will manifest itself later, when the following factors will affect the production process of companies: increased transportation costs, the breakdown of old supply chains, the cost of finding new consumers, etc., so the dynamics in the Russian industry may deteriorate amid the geopolitical crisis, which will lead to a narrowing of export markets.

3.2.2. Dynamics of the industrial production index in Q2

At the end of Q2 2022, the trend component of the index of industrial production showed a decline mainly due to the sanctions imposed by several countries after the launch of SMO.

The oil production contraction seen in Q2 2022 was due to: the refusal of consumers and traders from the EU to buy Russian oil; the embargo on oil supplies from Russia by the US and the UK; decrease in oil shipments by sea in March 2022, which led to a mirror reduction in the loading of production capacity in April 2022 amid the exhaustion of port infrastructure and storage capacity in the Transneft system coupled with the lack of formed alternative supply routes, which have already begun to operate since May 2022 (increasing exports to India and China) largely due to a discount in the price of Russian Urals crude oil relative to the price of the benchmark Brent brand.¹

Despite the increase in gas supplies to China via the Power of Siberia pipeline and the active pumping of gas into European UGS (underground gas storage facilities) in April 2022, the volume of gas exports from Russia declined in Q2 2022. The reason is Russia's response to the EU sanctions: the introduction of a new gas payment scheme (converting euros into rubles) for supplies to the European market and the suspension of exports to Bulgaria, Poland, Finland and the Netherlands at the end of May 2022 because these countries refused to pay under the new scheme (according to 2021 data, their share in Russian gas exports was 11%).

An additional factor in Q2 2022 that limited coal export shipments to the Asia Pacific market, in addition to infrastructure restrictions on the Far East railroad lines, was competition with other cargoes that were redirected to the East after the imposition of sanctions.

1 *Malkin V.* Russia raise crude oil production and export in May // *Vedomosti*. 02.06.2022. URL: <https://www.vedomosti.ru/business/articles/2022/06/02/924946-rossiya-eksport-nefti>

The main positive contribution to the dynamics of the trend component of the mining industry was made by the extraction of minerals, except for fuel and energy, due to the growth of external demand for nonferrous metals in anticipation of the introduction of new restrictive measures on export supplies from Russia. In addition, there was an increase in production related to the provision of services in the upstream sector, despite the fact that foreign oil service companies of the Big Four announced their withdrawal from March 2022, the suspension of investment and transfer of technology and equipment to Russian projects, the resale of business to Russian owners.¹

The trend component of the manufacturing sector showed a slow decline at the end of Q2 2022. The restraining factors for the production growth in the manufacturing industries were the sanctions, due to which the logistics of the supply of components and raw materials did not have time to realign to the domestic market or to the markets of the countries that did not impose sanctions against Russia. In addition, there are products that are not produced in Russia and their import is prohibited, which stops the production of industries that use these products. The share of components subject to restrictions depends on the sphere. The greatest import dependence on the EU and the USA in machinery and equipment (40%), medicines (34.5%), cars (28.3%), rubber and plastic products (24.6%).²

Following the industrial sectors, other sectors of the Russian economy also showed a decline: freight transport due to the reduction of export flows of energy, chemical products and timber; wholesale and retail sales due to the departure of foreign firms and the reduction or termination of a number of commodity flows. The construction industry stagnated due to rising prices for building materials and components.

According to the results of the analysis of the dynamics of the trend components of industries, the Russian industry felt the impact of the imposed sanctions on their production processes in Q2 2022. A number of industries, which in retrospective dynamics provided the growth of the Russian economy, depend on imports: the share of foreign added value in their products exceeds 50%, mainly these imports from the countries that imposed sanctions (the EU and the USA). It takes some time to find alternative suppliers and sales channels, it is possible that new partners will supply components of lower quality, raise prices due to lack of competition, and this will again lead to dependence on imports. It takes more time to carry out self-reliant substitution; this way can, on the one hand, help avoid serious problems in future supply chain disruptions, but, on the other hand, lead to higher production costs due to ignoring the advantage of specialization and scale of production established in the global market. Another

1 The share of foreign companies in this market is no more than 20%. See, for example: *Budris A.* Oil servicing companies terminate investment in Russia: what will happen to oil production // Forbes. 23.03.2022. URL: <https://www.forbes.ru/biznes/459711-nefteservisnye-kompanii-prekrasaut-investicii-v-rossii-cto-budet-s-dobycej-nefti>

2 *Kokoreva M.* From the automotive industry to pharmaceuticals: how dependent the Russian economy is on imports // Forbes. 19.04.2022. URL: <https://www.forbes.ru/finansy/462829-ot-avtoproma-do-farmaceutiki-naskol-ko-rossijskaa-ekonomika-zavisit-ot-importa>

risk is the narrow concentration of export flows from Russia only in the Chinese market. It is worth developing other sales channels that do not have a large capacity and are not considered traditional for Russia, but which are ready to buy products from Russia (for example, for timber products it could be the Middle East, the Persian Gulf, South-East Asia). To this end, it may be worth making these destinations more attractive by removing trade restrictions (for example, import duties).

3.2.3. Dynamics of the industrial production index in Q3

Over Q3 2022, the trend component of the industrial production index showed slow growth mainly due to manufacturing industries – in particular, metallurgy, petrochemicals and food production.

The trend component of the mining industry exhibited slow growth in Q3 2022. Oil production and export volumes were growing until September 2022, in October 2022 oil production decreased by 0.6% against the same period of the previous year, and exports dropped by 1%. In early October, the OPEC+ countries agreed to adjust downwards the overall production by 2 mn bpd from the August 2022 required production levels starting November 2022. According to set up schedule, Russia should reduce its daily production volumes by 0.4 mn bpd.¹ Apparently, the decrease in production volumes in October was due to preparations for the implementation of the deal.

Volumes of gas production and exports to far abroad countries declined in Q3 2022 compared to the same period of the previous year, the reason being the problems of export pipelines to Europe: firstly, in May 2022, gas transit through Ukraine was more than halved, as the country refused to agree on supplies through Donbass; secondly, in late August supplies through the pipeline Nord Stream (55 bn cubic meters per year) stopped because of faulty pumping equipment; thirdly, the sanctions imposed against Russia over the SMO in Ukraine and Russia's retaliatory actions² since February 2022 have resulted in the impossibility of gas supplies via Poland through the Yamal- Europe gas pipeline (capacity 33 bn cubic meters per year).

Russian gas is exported to Europe via one of the branches of the Turkish Stream (33 mn cubic meters per day) and through Ukraine (43 mn cubic meters per day). In addition, the EU countries have agreed to reduce gas demand by 15% from August 1, 2022 to March 31, 2023, compared to average consumption over the past five years. Following exports, gas production is also falling. Growth in the period under review was observed in the transshipment of liquefied gas at Russian ports, which can be attributed to the increase in export volumes before the tightening of sanctions.

During the period under review, there was an increase in lignite production, which is used as fuel in thermal power plants and boiler houses, a decrease in

1 33rd OPEC and non-OPEC Ministerial Meeting // OPEC. 05.09.2022. URL: https://www.opec.org/opec_web/en/press_room/7021.htm

2 Introduction of payment for gas in Russian rubles. Poland refused to pay for gas in Russian rubles, gas supplies in this direction stopped.

coking coal production and exports due to infrastructure restrictions on rail lines in the Far East and competition from other cargoes that were redirected to the east after the imposition of sanctions.

The trend component of the manufacturing sector showed growth at the end of Q3 2022. The main contribution was made by:

- Food industry, partly on the back of the withdrawal of foreign producers from the market, and partly owing to the increased production of various types of canned goods, cereals and other durable goods, which is most likely due to increased demand for these products from the population of the regions bordering the SMO;
- Textile and garment production as well as the food industry partly amid the withdrawal of foreign competitors from the market, as well as due to increased demand for workwear, suits and kits for men made of textile materials, bags and travel kits used for personal hygiene;
- Metallurgy against the backdrop of growth in aluminum processing, production of aluminum pipes and structures necessary for heating lines construction and restoration of energy infrastructure in the attached territories, as well as owing to production growth of nonferrous metals, particularly gold (growth in demand for precious metals was due to the crisis in connection with the SMO and the high inflation rate of almost all major world currencies);
- Mechanical engineering due to increased production of tractors for agriculture and forge-and-press machines, mainline electric locomotives owing to the substitution of part of the demand for imported products; in agriculture on the back a good harvest year.

Q3 2022 saw growth in other sectors: in sales due to the departure of major players in the non-food segment of Russia and sales of their products; in construction owing to repair and construction of infrastructure in the attached territories; in agriculture on the back of a record harvest of some crops. Cargo turnover declined in the period under review due to restrictions on the transshipment of FEC products by sea and the low capacity of railroads in the easterly direction.

3.2.4. Dynamics of the industrial production index in Q4

In Q4 2022, the trend component of the industrial production index showed slow growth, with the main contribution coming from fuel and energy extraction and manufacturing; production and supply of electricity, gas, and water had about zero growth rates.

On December 5, 2022, an embargo on sea shipments of oil from Russia to the EU came into force, as well as a “cap” on oil prices at \$60 per barrel. According to the IEA, despite the restrictions, the volume of oil production and exports in 2022 remained stable: oil production rose by 2% to 535mn tons, while export of oil to non-CIS countries via pipelines and the sea rose by nearly 19% to 207mn tons. In early 2023, there may be a temporary reduction in production (wells with a high level of water cut may be taken out of service) with subsequent recovery, as it

takes time to build alternative channels of oil supply. The embargo on the export of petroleum products, which came into force on February 5 will be an additional factor in the reduction of oil production in early 2023.

In addition to infrastructure constraints, gas exports from Russia in Q4 2022 were negatively affected by the EU's gas storage capacity utilization rate of 80%. An increase in demand from the EU is feasible at the end of H1 2023, when preparations for the next heating season commence. The positive effect of strengthening gas cooperation with Turkey, China and Iran can probably be expected beyond 2023.

At the end of Q4 2022, the coal industry kept growing in production of lignite, which is used as fuel in thermal power plants and boiler-houses. Coking coal production and export volumes continued to decline due to infrastructure constraints on the Far East railroad lines and competition from other cargoes whose transportation was redirected to the east.

The trend component of the manufacturing sector at the end of Q4 2022 exhibited growth. The industries oriented mainly at the domestic demand had positive dynamics: foodstuffs manufacturing, including beverages and tobacco; production of finished metal products; manufacture of machinery and equipment; manufacture of vehicles and equipment. The export-oriented branches of industry, in particular, chemical production and wood-working industry, had a restraining influence on the dynamics of the industry. The current dynamic was caused by the substitution of foreign production with the products of Russian producers due to the sanctions imposed on the technologies, termination of direct import of some goods, as well as the growth of demand for the products of industries, which are intermediate for the fulfillment of the state defense order.

The reasons for the growth of other industries in Q4 2022 remained: in trade – due to the departure of major players in the non-food segment of Russia and sales of their products; in construction – due to repair and construction of infrastructure in the attached territories. Cargo turnover drops on the back of the restrictions on the transshipment of FEC products by sea, the low capacity of railroads in the eastern direction, the reduction of gas exports through the main gas pipelines.

Potential challenges for the growth of the Russian industry in 2023 will be:

- Substitution of more complex production by relatively simple products due to the sanctions imposed on technology and reduction of the number of employees owing to the partial mobilization and departure of some specialists abroad;
- Reduced competition amid the departure of a number of foreign manufacturers from the Russian market and restrictions on access to foreign markets;
- Preserving revenues from Russian oil and gas exports under embargoes and price caps;
- Quickly building new logistics and supply chains and providing them with the necessary infrastructure.

Table 14

Change in the output index across sectors of the economy, %

Sectors	Share in industrial production index, %	December 2022 on December 2021	December 2022 on June 2022
Industrial production index		97.34	102.04
Extraction of minerals	34.54	97.19	102.51
Manufacturing, including:	54.91	96.86	104.26
Production of food, including beverages and tobacco	16.34	110.71	106.18
Textile and garment production	1.14	105.52	107.27
Manufacturing of leather, articles thereof and footwear	0.27	96.42	100.47
Wood processing and wood ware manufacturing	2.02	81.29	95.34
Pulp-and-paper industry	3.35	74.25	86.01
Production of coke and petrochemicals	17.25	101.48	101.53
Chemical industry	7.56	101.58	100.59
Manufacturing of rubber and plastic articles	2.14	96.67	104.03
Manufacturing of other nonmetallic mineral products	4.02	91.16	93.58
Metallurgy and manufacturing of ready-made fabricated metal products	17.42	114.76	115.83
Manufacturing of machinery and equipment	6.97	96.50	102.54
Manufacturing of electrical, electronic and optical equipment	6.27	94.54	98.81
Manufacturing of transport vehicles and equipment	6.75	92.49	111.60
Other industries	2.42	93.95	103.39
Electricity, gas and water supply	13.51	98.85	100.09
Wholesale trade		82.53	101.27
Retail sales		90.04	101.06
Cargo turnover		94.57	97.55
Construction		106.17	103.51
Volumes of paid services to households		105.43	102.41
Manufacturing of transport vehicles and equipment		101.23	101.55

Sources: Rosstat, own calculations.

3.3. Russian industry in 2022¹

This section is based on the materials of opinion polls involving managers of industrial enterprises conducted by the Gaidar Institute for Economic Policy (IEP) according to the European harmonized methodology in the monthly cycle since September 1992.

The survey contains a very small number of questions (not more than 15–20). The starting questions of the IEP questionnaire were prepared in 1992

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based on recommendations of the Organization for Economic Cooperation and Development, which “supervises” the opinion polls in all countries of the world. The modern questionnaire of the IEP surveys consists not only of the minimum set of questions recommended by the OECD, but also includes other questions developed in light of many years of experience in monitoring of the situation in the Russian industry and allowing a better understanding of particular dynamics and condition of the industry. A systematic analysis of the situation in the Russian industry based on monthly opinion polls using a modified questionnaire amid “sanctions war” once again demonstrated the advantages of our data source.

Questions of the opinion polls traditionally concern actual and expected changes of the main indicators of the enterprise’s activity, as well as the estimates of their current situation. Enterprises are invited to respond to questions on a scale of “growth”, “no change”, “reduction” or “above the norm”, “normal”, “below the norm”. When analyzing the results of opinion polls, they used a derived index called a balance. Balances are calculated as the difference between the percentage responded “will grow” (or “above the norm”) and the percentage responded “will reduce” (or “below the norm”). The resulting difference allows us to present the distribution of answers to each question by a single number with a “+” or “-” sign. There are practically no classical quantitative questions (familiar to economists) in surveys.

Simple design of questions and answers allows respondents to fill out the questionnaire quickly and without reference to documentation. It is fundamentally important that the respondent at each enterprise was a manager of the highest possible level having a complete picture of the situation at the enterprise and directly related to its management.

3.3.1. Russian industry in January-February 2022

The traditional January decline in demand for industrial products in 2022 was not as strong as in previous years. The initial (before the exclusion of the seasonality) balance dropped only to -14 p.p., whereas in the inter-crisis period the January balances stayed in the interval of -42 to -21 p.p. The exclusion of the seasonal factor demonstrated continuing growth in demand and even a bit more intensive than in December 2021: +12 p.p. after +10 p.p. It should be noted that in August and October 2021 this indicator went up to +17 p.p. However, at that time the absolute maximum (1992–2022) of satisfaction with the volumes of sales was registered: 79% of enterprises considered their volumes as normal. However, the subsequent slowdown in demand growth lowered the share of normal estimates to 65% by December. In January 2022, the figure was 67%.

In the same August 2021, the Russian industry formed extremely optimistic forecasts of changes in demand. The balance reached +23 p.p., which is a little less than the absolute maximum of +25 p.p. shown in March 2008. But then the optimism of the sales forecasts started to decrease and stabilized at +12 p.p. in December 2021 – January 2022.

Even with the obvious growth in demand and high optimism of sales forecasts, Russian industry did not bring its stocks of finished products to the manageable

surplus that was observed in previous periods of positive industry dynamics. Since August 2020, the balance of inventory estimates has been negative: industry responses “below the norm” prevail over “above the norm” responses. A longer period of the stocks shortages was registered after the default of 1998. At that time enterprises hesitated for 30 months to bring their stocks to a reasonable level of redundancy due to uncertainty about the sustainability of the industrial growth that had begun.

However, lack of stocks of finished products allowed enterprises to keep high optimism of their output plans even in the context of negative adjustment of demand forecasts. In January 2022 the balance of expected changes in production reached +34 p.p., which became the best value of the index since June 2008.

With increasing optimism of output plans, enterprises realized that Russia's demographic problems combined with a hypertrophied higher education system, put the lack of qualified personnel at the top of the list of constraints to industrial growth. This problem was cited by 44% of enterprises at the beginning of 2022, whereas at the beginning of 2021 it was cited only by 16%. There was very little left till the record of July 2008 (49%) of the fast-growing economy and industry after the Covid crisis.

The internal demand could share the first place with the staff shortage only as a result of the growth of its citation from 37% in October 2021 to 43% in January 2022. The export demand was considered by 22% of enterprises as a constraint for the growth of output. The uncertainty of the current economic situation and its prospects in the environment of the next wave of morbidity increased its negative influence on the Russian industry from October to January by only 4 p.p.: after 35% (the post-crisis minimum) it was cited by 39% of enterprises.

However, the factor “weakening of the ruble and appreciation of imported equipment and raw materials” demonstrated the highest growth in the number of citations during this period (one quarter). After 15% in October 2021 the weak ruble at the beginning of 2022 was considered as an obstacle by 35% of the enterprises. This growth of the weak ruble negative influence is caused by the shortage of capacities in the Russian industry under the obvious growth of the output and growth of optimism of its plans, growth in prices for imported equipment and raw materials, as well as the insignificant success of import substitution. Indeed, the shortage of equipment restrained the growth of the output at the beginning of the year at 22% of the enterprises (this is the maximum number of the references since 2008). The shortage of investment in 25% of enterprises (this is the maximum since 2014, beginning of this factor monitoring).

In January 2022, inflation expectations in the Russian industry resumed their growth. The balance of the expected changes of producer selling prices rose by 3 p.p. over a month after an increase by the same 3 p.p. over September-December 2021. It should be noted that a year earlier (in January 2021) this indicator went up considerably: by 21 p.p. after the December failure, when the industry (as well as the whole country) expected another surge of incidence and a decline in demand in case a new lockdown was announced. Growth in the incidence of the next strain of coronavirus in early 2022 was perceived more relaxed by both Russian

authorities and Russian manufacturers. The smaller scale of hospitalization, as well as of mortality and the experience of already two years of work under pandemic conditions also had its impact.

At the beginning of the year, Russian industry reported the most significant shortages of production capacity and labor force due to expected changes in demand. Balance estimates of enterprises securities with these resources fell to the absolute minimums of the whole monitoring period, which began in 1993 and 1996. Even in 2008, the scale of the deficit was smaller.

The unprecedented labor shortage forced companies to plan equally unprecedented hiring. In January, these plans reached an all-time high of +24 p.p. surpassing both the post-crisis record of September 2021 and the pre-crisis record of January 2008.

In February, according to the latest estimations of enterprises before the beginning of the SMO, the slow-down of the demand growth continued. The balance lost another 6 p.p. and fell down to the values registered in the spring of the previous year. However, the positive value of the February balance testified that the demand for industrial goods continued to grow.

Moreover, in February there was a sharp revision by enterprises of their estimates of current sales on the scale of “above normal”, “normal” and “below normal”. The share of “normal” answers increased by 11 p.p. reaching 79% and repeating the absolute record of August 2021. The previous record of 14 years (sustained for 168 months) was registered in August 2007 and amounted to 72%. The surge in sales satisfaction occurred in the context of a slowdown in demand growth. Such a combination indicated that by February 2022 the industry got rid of the inflated expectations formed during the “rebound from the peak of the crisis” demonstrated by the industry in 2020–2021. Indeed, demand forecasts fell by another 6 p.p. in February and the decline from August 2021 (a multi-year high) was 17 p.p.

Meanwhile, estimates of stocks of finished products showed that enterprises did not expect a sharp deterioration in the following months. The balance of these assessments remained negative from August 2020: the responses “below the norm” exceeded the responses “above the norm”. In other words, until February 2022, there remained a shortage of stocks in industry, which supported both the current growth in output and the production plans.

The output plans, although they dropped by several p.p. in February after reaching their multi-year maximum in January, remained positive and the enterprises were ready to grow the volume of industrial output. Historically (1996–2022) the record shortage of labor force registered by surveys in January 2022, forced Russian industry to increase hiring plans in February as well. Such an optimistic balance index related to the expected changes in the number of workers was not registered even in 2008.

3.3.2. Russian industry under the first stage of SMO

During the first month of the “total war” declared on the Russian economy by French Minister Bruno Le Maire, demand for industrial products quite expectedly showed a decline, but not as “crisis” as in the previous actual crises of the 1990s,

2008–2009 and 2020. The March 2022 result was comparable with the worst result of 2015, which for the industry was just another year of stagnation in 2012–2016. Such non-crisis growth in demand amid “total war” explains the non-crisis assessments of the March sales volumes by the Russian industry. They were recognized as normal by 64% of enterprises. This result is 15 p.p. worse than the result of February 2022, but it is comparable with the best values of 2017–2019.

The output of industrial products in March also showed no crisis dynamics at all: the balance of the actual index changes became negative (the output was lower than in February), but surprisingly small in magnitude, i.e., only -5 p.p. In April 2020 the same balance dropped to -35 p.p., in November 2008 to -38 p.p., in September 1998 to -31 p.p. and in 1994 to -53 p.p.

The desire of enterprises to replenish stocks of finished products provided support to output in the first month of the next crisis. The experience of the Covid crisis of 2020 clearly showed to Russian manufacturers the relevance of the proverb “store is no sore” when shipment of components and their movement across state borders were limited for medical reasons.

Another reason to produce to stock was again the devaluation of the ruble and a surge in inflation. In such a situation the enterprises preferred most likely not to curtail the production in the crisis sharp way, but to use the Russian components which were not yet much more expensive and the imported ones available on the territory of Russia. However, the result for domestic producers seemed unsatisfactory: there was still a shortage of stocks of finished goods in the industry.

In March, Russian industry demonstrated a decisive growth in its prices. The balance of their actual changes increased by 26 p.p. for the month and reached the level (the intensity of growth to the previous month), which was not registered by surveys since October 1995. All records of this indicator in the XXI century and the post-default record of October 1998 were broken.

Enterprises’ price forecasts assumed further growth of selling prices in April–May. Inflation expectations of the Russian industry increased in March by modest 20 p.p., however, due to the high values of February the March level made +51 p.p., having renewed the record of the XXI century. Though, this level could not surpass the local maximum of post-default September 1998 and even less the absolute record of June 1993. Then, the balance reached +99 p.p.

In March, Russian industry reported layoffs, and the balance of actual changes in employment became negative for the first time since September 2020, but very little for the beginning of the crisis and comparable with the period of industrial stagnation in 2012–2016. Hiring plans, on the other hand, fell in March the way they have never fallen before. They lost 46 p.p. in one month changing the historical maximum of January–February 2022 to pessimism, which yielded only to the crisis lows of 1998 and 2009.

The investment plans of enterprises also experienced an unprecedented decline in March. After a remarkably stable and high 11-month optimism, the desire to invest in domestic production lost 46 p.p. in the first month of the “total

war” between the West and Russia and fell to the low level of the investment crises of 2015–2016 and 2020.

In April the actual dynamics of the demand demonstrated the decline slowdown, i.e., the balance grew but remained negative, that is the sales (according to traditionally underestimated producers' assessments) continued to decrease but not as intensively as in March. At the same time both the March and April values were far from the crisis levels of the 1990s, 2008 and 2020 index.

Demand forecasts after a record dip in March to a record level of pessimism showed a record growth in April. They gained back 32 p.p. from 43 p.p. lost a month earlier. Although the balance of April remained negative (that is the enterprises still expected the decline of the demand), its expected decline in May-June should not have been so catastrophic as compared with the March forecasts.

In such a situation the April balance of the enterprises' production plans demonstrated a logical but still surprising growth by 30 p.p. after the March drop by 50 p.p. Hence, this indicator became positive, i.e., the industry was ready to switch over to growth in production as early as May-June. A similar surge of optimism was registered in May 2020. A surprisingly successful rebound from the bottom of the viral crisis began at that time.

The negative balance of estimates of the finished products stocks, which has persisted in Russian industry since August 2020, demonstrated that the deficit of stocks shaped during the viral crisis, has smoothly turned into the current geopolitical crisis of Russian industry. Both in 2020 and 2022, enterprises feared that worsening problems related to the availability of raw materials, supplies and components could result in a halt in production even if demand remained unchanged. Estimates of stocks of raw materials and supplies also demonstrated enterprises' concern about their ability to ensure normal (i.e. satisfying demand) production processes in the context of sanctions restrictions. The balance of estimates of these stocks fell to a low of 2010–2022.

In April, enterprises maintained intensive growth in prices, even slightly more intensive than in March: the balance increased from +50 p.p. in March to +54 p.p. and reached the level of October 1995. The absolute record for the whole period of its monitoring since October 1994 was registered in December 1994 and amounted to +84 p.p. However, a sharp decline in inflation expectations in April indicated that the Russian industry was not ready to reach the record values of actual price growth of 1994. Inflation expectations of enterprises lost 26 p.p. in April and returned to the “pre-war” level of August 2021 – February 2022.

After a record intensity of hiring at the beginning of the year, which, however, lagged behind plans, March saw a logical crisis decline in employment. However, the March balance was far from its “normal” crisis values recorded in 2008–2009 and 2020. In April the balance of the index increased from -8 to -5 p.p., i.e., the enterprises continued to reduce the staff, but less intensively. At the same time, the actual dynamics of the number of employees of Russian industrial enterprises in 2022 significantly differs from the industry's intentions in this area. Whereas the pre-war hiring plans were full of unjustified optimism, in the first months of the SMO one can speak of unfulfilled pessimism. Thus, enterprises revised their

intentions in March by a record amount from a record +21 p.p. to -23 p.p. with the actual April balance of -5 p.p.

After the April slow-down of the drop in demand in May the intensity of the sales' decline grew again and returned to the March level. However, values of this index in March-May are still far from the real crisis failures faced by the Russian industry in the 90-ies of the 20th century, in 2008 and 2020. Demand forecasts also failed to continue the recovery that began in April and lost in May 5 p.p. out of the 33 p.p. gained a month earlier. However, the output plans in May retained positive dynamics adding another 8 p.p. and making a good stead comparable with the pre-Covid values of the indicator. Finally, production intentions of Russian industry, as in the case of the 2020 Covid crisis, got rid of pessimism already during the second month of the sanctions crisis and consolidated it during the third month.

The main reason for rapid recovery of output plan optimism was the chronic shortage of finished product inventories, which began back in August 2020. The 2022 sanctions crisis did not end in a revision of inventory estimates. The blocking of imports and a powerful inflationary wave, on the contrary, strengthened the desire of enterprises to produce to stock as long as supplies from abroad and prices for components make it possible to support domestic production. Russian industry also has to work under shortage of components, raw materials and supplies, which increased significantly with the onset of the sanctions crisis and surpassed the deficit of the period of the viral crisis of 2020. In April 2022 the balance of estimates ("above the norm" minus "below the norm") fell to -25 p.p., which evidenced the worst value of the indicator since 2009. In May, this indicator rose to -20 p.p.

In May enterprises considerably slowed down the actual growth of selling prices. Whereas in April the balance ("growth" minus "reduction") was +54 p.p. and was a 27-year record, in May it dropped to +14 p.p. and reached the level of the end of 2020. At that time, Russian industry, like the rest of the world, was just getting into a post-Covid inflationary race. However, the industry did not expect any further (in June-July) deceleration in the growth of selling prices. Whereas in April inflation expectations of enterprises dropped record-breakingly (by 26 p.p.), the reduction in May showed only 3 p.p.

The staffing intentions of enterprises in the first 5 months of 2022 experienced extremely dramatic changes. If in January amid a considerable staffing deficit the industry reported record plans for hiring workers, in March these intentions collapsed, surpassing the failure of April 2020. However, by May, the industry had almost completely overcome the pessimism of the early SMO. The balance of staffing intentions became almost zero, i.e., mass layoffs in June-July were no longer planned, but growth in the number of employees was not expected either.

The June sales volumes disappointed the Russian industry as the share of estimates "below the norm" rose to 39%, which was a 20-month anti-record for the indicator. Even in March 2022, the first month of the sanctions' crisis, such estimates were received from only 28% of enterprises. A month earlier, in February 2022, the figure demonstrated an absolute minimum of 17% (1992–2022). However, the June

figure of 39% dissatisfaction with demand was still far from the crisis peaks of 2020 (57%), 2016 (55%), 2009 (80%), 1998 (92%) and 1996 (94%).

Growing dissatisfaction with sales is explained by low dynamics of demand in Q2 2022. After the balance of the actual changes in the demand has logically dropped in March from February +5 to -20 p.p. (the latter value was not related to crisis at all by standards of 2020, 2009, 1998, 1996 and 1994) this figure could neither demonstrate the rebound from the crisis peak nor the fall to the really crisis levels of the mentioned years. The entire Q2 2022 the balance was in the corridor of -20...-14 p.p.

Demand forecasts in May-June failed to continue further recovery after the April rebound. For the whole quarter the balance of this indicator was in the interval of -13...-9 p.p. The uncertainty of the industry in the further recovery of sales definitely had a negative effect on the output plans. The latter showed a sharp drop in June. After two months of the confident growth the balance of the enterprises' production intentions lost 10 p.p. reaching zero. The Russian industry did not expect growth or reduction of the output in July-August. However, the actual output in June demonstrated growth by May 2022 and for the first time since the pre-war February the balance ("growth" minus "reduction") of this habitual index was positive.

However, the main "beneficiary" of the June output growth was not the consumers of Russian industrial products (who never decided to increase their purchases), but warehouses of finished products. The June output growth allowed the industry to reduce the shortage of finished goods inventories to 12%, which was the best (minimum) value of the indicator since August 2020.

At that time, at the stage of a definitive recovery from viral crisis of 2020, a long period of shortage of stocks of finished products began, which did not end by the middle of 2022. However, in June the balance of estimates of these stocks ("above norm" minus "below norm") was only -2 p.p., while in December 2020 it was down to -14 p.p.

Hoping to revive the weak (but nevertheless non-crisis) demand the Russian industry in June refused to increase the selling prices and has already passed to their absolute reduction. This is evidenced by the negative balance of actual changes in June prices compared to their May level. Thus, over May-June 2022 the index lost 59 p.p. after the April 27-year record of this balance. Our surveys in 1994–2022 have never registered such a definitive transition from a rather intensive growth of prices to a reduction within two months.

Hence, the May plans did not imply such a change in the pricing policy of industrial enterprises. The May balance of expected price changes remained positive (pricing growth should have remained) and large in absolute terms (prices should grow significantly). The June balance of expected changes in prices moved from "plus" to "minus" and broke two local records: in May 2019 (-3 p.p.) and in June 1998 (-3 p.p.).

In June, the Russian industry resumed recruitment after a three-month pause and the balance of actual changes in the number of workers became positive, although in May enterprises had no such plans. The hiring plans became positive

only in June, continuing the consistent recovery after the record-breaking failure in March. Apparently, the chronic shortage of personnel forced the Russian industry to recruit workers even under the protracted sanctions crisis.

The July data on a wide range of indicators of surveys indicated a slowdown in the recovery from the sluggish crisis.

In July the drop in demand for industrial products continued and with growing intensity, according to the enterprises' estimates. The balance of actual changes of sales demonstrated the decline after the situation stabilized in May-June. Consequently, its July indexes were worse than those of March, the beginning of the sanctions' crisis. However, this index was still far from the crisis failures of 2020, 2008, 1998 and 1994. The negative dynamics of the balance of actual changes in demand caused growing dissatisfaction with the established volumes of product sales in July. The share of "below norm" estimates increased up to 43% after the 28% level of dissatisfaction with demand registered in March 2022. It should be noted that the pre-crisis value of this indicator in February (2022) amounted to 17% and repeated the historic (1992–2022) minimum registered in August 2021. The changes in product sales expected by enterprises after the extremely vigorous rebound in April of the next three months failed to sustain the positive dynamics. In May-July the balance of these forecasts was in the range of -13 ... -10 p.p. Such a "hang-up" of demand forecasts at the recovery from previous crises had never been registered.

The July output plans did not promise a resumption of an effective recovery from the sanctions' crisis either similar to overcoming the 2020 Covid crisis. At that time, the Russian industry managed to cope very quickly with the shock of the first wave of the disease, and the subsequent infection outbreaks failed to lower the balances of production plans to negative values. In June-July 2022 the output plans, which have considerably benefited by May, began to decrease. During these two months they lost 17 p.p. and became negative again. The intentions to decrease the production volumes began to prevail among the enterprises.

Non-positive dynamics of demand forecasts and output plans relieved the Russian industry in July from the deficit of stocks of finished products registered by surveys since August 2020. This very fact deprived production of another supporting factor, the need to replenish stocks.

In July, Russian industry continued to lower its prices. The balance of their actual changes fell from -4 to -13 p.p. As a result, two local lows were beaten: July 1998 and July 2020. The next step was to overcome the absolute minimum of January 2009, when the balance of the actual changes of prices fell down to -16 p.p. However, the July pricing plans of enterprises did not imply overcoming this absolute minimum. After three months of record-breaking (from +51 to -8 p.p.) reduction in the balance of expected price changes, this index increased by 7 p.p. in July.

The negative dynamics of demand and output forced the industry to abandon recruitment in July, which for the first time since the start of the "special military operation" was registered by surveys in June. Then the balance of actual changes in the number of workers became positive, small in absolute terms, but still

positive. In July the balance became negative again. Nevertheless, hiring plans, successfully recovering from the record March failure, stopped improving in July and froze at zero. The industry was neither ready to switch to hiring, nor to return to downsizing.

The main reason for the industry's reluctance to move to logical layoffs in the context of negative dynamics of demand and output was a chronic shortage of personnel, primarily skilled workers. This fact resulted in a record shortage of personnel in January 2022 and failed to form an overhang of excess employment in April 2022. Then the balance of estimates became only zero, i.e. the share of answers "more than enough" equaled the share of answers "not enough. In July 2022, the balance of estimates became negative again and the industry again faced a shortage of personnel "due to the expected changes in demand."

In August, according to the estimates of enterprises, demand maintained a moderately negative dynamics (that is, less products were sold than in July). However, such dynamics of sales has been observed since April: after the March slump the balance of demand remained steady within the range of -24...-17 p.p. Industrial enterprises have neither witnessed the crisis collapse of this figure (as it happened in 2020, 2008, 1998, 1996 and 1994), nor the rebound from the peak of the crisis. This situation began to disappoint more and more enterprises. The share of the normal estimates of demand after the non-crisis failure in March 2022 and slight recovery in May started to decrease slowly and dropped to 51% by August. The forecasts of demand also remained stable and non-crisis restrained after the record and logical failure in March. The output plans in August got rid of the modest (-5 p.p.) negative of July and returned to the same absolute term (+4 p.p.).

The next period of the finished stocks shortage, typical for the Russian industry had been operations within 24 months, ended in the summer of 2022. In August, the balance of estimates became positive. The record of 1998–2001, when shortage of inventories lasted 30 months and the balance dropped to -25 p.p. (in 2020 the balance dropped only to -14 p.p.), remained unbroken.

Estimates of stocks of raw materials and supplies also had a generally positive dynamics in August. A slight reduction in the usual provision with Russian components and raw materials from 79 to 74% was combined with growing usual provision with imported components from 20 to 29%. Growth in the second of the two indicators amid "sanctions war" seems to be more important than the decline in the first one.

In August, Russian industry continued (despite intentions to abandon it in July) its price decline. The balance fell to -16 p.p. beating the local pre-default July 1998 low. However, industry tried to get rid of deflationary expectations in its forecasts for the second month in a row. After the June multi-year low, the balance of price intentions rose from -8 to -2 p.p. in July and remained at that level in August. The absolute minimum of this index (-21 p.p.) was registered in December 2008.

The record-low official unemployment, which was formed, among other things, as a result of the Russian industry's non-crisis staffing policy, forced enterprises to stop expanding employment. During April-June 2022 the balance

of the hiring plans increased by 25 p.p. and became zero. The industry did not plan either growth or reduction of the number of workers in July-August. However, the actual number of employees in July-August, according to the estimates of enterprises, began to decline. The balance of actual changes decreased from +1 to -4 p.p. This fact forced enterprises to adjust their hiring plans for July-August from 0 to -3 p.p.

The determining factor in the formation of September estimates of the situation in the Russian industry was a considerable improvement in the dynamics of the demand. According to the estimates of enterprises, the balance of actual changes in sales reached the best values since the beginning of the SMO. The worst value of this indicator was obtained in July. However, all six months after the March dip the balance of actual changes in demand was in a fairly narrow range, which was able to breakthrough only in September.

This fact logically resulted in growth of satisfaction with sales volumes. In September the share of normal estimates of the demand has sharply increased up to 67% and was the best among the enterprises participating in the non-governmental IEP surveys since the beginning of SMO. The worst value of this figure for 2022 was registered in August and made, strictly speaking, 51%, which was not crisis value at all. It should be noted that historically (1992–2022) the higher value of the index was registered in February 2022 and it equaled 79%.

Clearly positive dynamics of demand in September allowed Russian industry to increase output and the balance of actual changes in production became positive for the second time during the SMO. For the first time growth of output vs previous month was registered by surveys in June. The output plans also showed growth and almost reached crisis maximum in September registered in May. The crisis minimum of this indicator, which logically fell in March, was comparable with the lows of the previous crises. However, already in April, the production plans of Russian industry managed to get rid of pessimism, which was definitely helped by lack of stocks of finished products.

The Russian industry was able to get rid of the shortage of finished product stocks only by July 2022. In August and September, the balance continued to grow, but very modestly – by 1 p.p. per month. This fact indicated two definitely positive signals. First, industry was able to maintain a small and manageable surplus of stocks. It lost such an opportunity during the 2020 Covid crisis. Secondly, the industry decided to move from policy of crisis minimization of stocks to supporting their excess typical for the stages of recovery from crises.

Another sign of recovery from the sanctions crisis, which began in September and planned by the industry, was a sharp decline in the provision of enterprises with stocks of raw materials and supplies. The share of “normal” answers dropped both when estimating stocks of Russian raw materials, supplies and components as well as when estimating similar imported ones, and significantly: by 10 p.p. in the first case and by 7 p.p. in the second case. The Russian industry’s current supply of raw materials and components does not seem to be sufficient for the sustainable growth of production that has appeared in the enterprises’ plans.

The intensive hiring registered by surveys in September was also a positive signal. After five months of shrinking employment and weak (+1 p.p.) growth in June, September's +9 p.p. fit nicely into recovery from the sanctions crisis that began in September.

In September the industry managed to slow down considerably the reduction of selling prices. The balance grew by 7 p.p., but remained negative, i.e. prices continued to drop, but not as intensively as in July-August. Enterprises' price forecasts promised growth in prices and the September balance of expectations increased to +9 p.p. after zero values of July-August 2022. Minimum inflation expectations of sluggish sanctions' crisis fell on July, when the balance dropped to -9 p.p.

3.3.3. Russian industry after announcement of partial mobilization

The main driver of declining optimism in the Russian industry in October was the deterioration of demand dynamics. After the September surge by 12 p.p., the balance of changes in actual sales lost 15 p.p. in October and returned to the worst values of this indicator registered in July. The deterioration of the demand dynamics logically reduced the satisfaction with the current volumes of sales down to 58% after September's 66%. However, both the October value of this index and the worst in 2022 (51%) in August were also far from the minimums of all the previous Russian crises of the XXI century, not to mention the estimates of the enterprises received in the 90-ies of the XX century. At the same time, demand forecasts maintained high level of September 2022. Sales expectations improved by 1 p.p. in October after a 3 p.p. growth in September. Finally, the above forecast figure cemented its break from stagnation of April-August, when it steadily reached the range of -12...-8 p.p. after the March failure, being the record-breaking in all senses and amounted to -41 p.p. The output plans, as well as demand forecasts, continued to gain optimism in October, having added another 3 p.p. and, consequently, having reached the best values after the collapse in March.

The output plans were supported not only by improvement in demand forecasts, but also by newly emerged deficit of finished product stocks in the industry. In October, the balance of their estimates ("above the norm" minus "below the norm") fell to -5 p.p. after three months of being near zero (0...+1).

Amid negative dynamics of demand and a drop in satisfaction with its volumes, in October the industry was forced to abandon the planned price increase. The balance of actual price changes remained negative (-3 p.p.). Enterprises reduced their prices more often than hiked them. Although the September plans envisaged growth in October with the balance of +8 p.p. Herewith, the October plans of the Russian industry retained the price optimism of September: enterprises still planned to push up prices, but now with the balance of +9 p.p.

The dynamics of employment in the industry also went through negative changes in October. Whereas in September enterprises for the first time during the current geopolitical crisis reported a significant growth in the number of

employees (the balance of change reached +8 p.p. after -5 in August), in October this indicator dropped to +2 p.p. This reduction seems absolutely logical not only due to deterioration of the actual dynamics of demand and output, but also due to partial mobilization. However, positive value of the balance shows that there was no absolute layoff in the industry.

Thus, hiring plans, symbolically improved by 1 p.p. in October after the September jump of 8 p.p., demonstrate the desire of enterprises to return to the recruitment record for the current crisis. This intention of enterprises is based not only on the demand forecasts and the output plans, which are record-breaking for the current crisis, but also on the record shortage of staff registered in October 2022 (and for the whole monitoring period of this index in 1996–2022).

The share of estimates of the current number of workers of the enterprises as “insufficient in connection with the expected changes in demand” reached 33%. The Russian industry has never known such a shortage of personnel before. The previous records, logical for periods of economic warm-up in early 2008 and 2022, were broken by a combination of partial mobilization and record low unemployment.

Positive dynamics of demand with its balance of actual changes improving by 11 p.p. helped to resume enterprises’ November recovery of optimism and almost returned to the September level, which was the best since March 2022. In this situation, November estimates of demand (on the scale “above the norm”, “normal” and “below the norm”) showed a recovery, but not as definitive as the dynamics’ indicators. Whereas the share of normal assessments of demand fell from 66 to 58% in October, in November this figure increased only to 60%. Most likely, the industry was counting on a greater improvement in the dynamics of sales amid the ongoing SMO and the “sanctions war”.

The forecasts of demand after the announcement of partial mobilization demonstrated high stability to all the subsequent events and cemented in the interval of -5...-4 p.p. after they had been within -12...-8 p.p. in April-August. As a reminder, in March 2022 the balance of forecasts fell to -42 p.p., reaching its absolute minimum and breaking the previous record of -38 p.p. registered in September 1998.

The actual output dynamics also demonstrated stability: for the third month in a row the balance was within -1...+2, whereas in March-August this index varied from -7 to +6 p.p. The near-zero values of the September-November balance demonstrated minimal changes in the output of industrial products as compared with the preceding month. However, the worst value of this balance after the beginning of the SMO was not at all the crisis -7 p.p., which is fundamentally different from traditional crisis failures of this index.

The November output plans resulted in reaching the maximum level of optimism in October after three months of growth since the beginning of the SMO, were down by 6 p.p. in November. However, they remained in the positive territory: the intentions to increase output still prevailed in the Russian industry over the plans to reduce it. Such a situation had been registered by surveys since

August, i.e. for the fourth month in a row. The negative balance of output plans in the course of the SMO was evidenced only twice: in March and July.

The shortage of stocks of finished products, which enterprises were able to overcome in August-September 2022 after a two-year deficit, began to increase again in the Russian industry. In October, the balance of estimates of stocks (“above the norm” minus “below the norm”) dropped to -5 p.p., and in November to -7 p.p. This could mean both the enterprises’ lack of confidence in their physical ability to maintain sufficient production volumes in the following months and their unwillingness to replenish stocks of finished products in the context of a prolonged, though shallow, crisis.

Enterprises’ price forecasts remained “in the positive territory” in November. The industry reported its desire to increase prices since September. However, these plans failed to materialize: for the sixth month in a row, enterprises reported a reduction in their prices. For the first time such a situation (an excess in the share of answers “reduced” over share of answers “grew”) in 2022 was registered in June (-7 p.p.), in July and August this excess reached its maximum (-13 p.p.), in November the balance rose to -1 p.p. it should be reminded that in April 2022 the indicator reached a multi-year maximum of +51 p.p. Such an intensive growth in prices as registered in April, has never been recorded since October 1995.

Partial mobilization resulted in a slowdown in the growth of number of employees at Russian industrial enterprises, however it was not an absolute reduction in the number of those employed in the industry. The balance of actual changes in the number of employees after the record +9 p.p. in September dropped in October to +3 and increased in November to +6 p.p.

Thus, the industry was able to continue hiring after the “withdrawal” of 318,000 men from the national economy. The record shortage of personnel, which the October survey registered, and the degradation of the system of vocational secondary education forced the domestic industry to plan intensive recruitment of workers regardless of demand forecasts and output plans. In September-November 2022, the balance of hiring plans showed surprisingly stable and high optimism.

Our monitoring of formal and informal reasons for layoffs at industrial enterprises launched in 2012, showed in November 2022 logical sharp growth of the one – once formal – reason for layoffs. The share of enterprises that lose employees “for formal reasons (conscriptio, trial, death)” rose from the usual 38% in the past to 60%, and came out on top.

Reference to voluntary retirement of pensioners in 2022, although it increased from 48% to 53% of references, was not a record high for the entire monitoring period of 2012–2022. This year this reason switched to the 2nd place. The chronic shortage of qualified workers has for two years now forced the management of enterprises to retain pensioners and even more prevent their layoff when reaching retirement age. Although in 2013 this was practiced by 10% of enterprises. Only 25% of enterprises cite low wages as a reason for layoffs in 2022, being a historic low, and perhaps it indicates that the washout of personnel from industry, those who can find more attractive jobs, has gradually subsided.

December did not bring any fundamental changes in the dynamics of demand for Russian industrial products. The balance of actual changes in sales grew by 3 p.p. and fully recovered the October losses of the index, which occurred, most likely, due to the September partial mobilization. However, this indicator was never able to demonstrate in 2022 either the usual crisis failure or the traditional recovery path observed in the previous crises.

The output in September-December showed a near-zero dynamics, almost unchanged as compared with the previous month. This situation suggests that the industry resisted the pressure of sanctions. The output plans able to quickly get rid of the March pessimism, were quite optimistic for almost all the next months, but failed to demonstrate any growth to the pre-crisis levels in 2022.

Hoping to revive demand, Russian industry once again decided to use the price factor in December, and enterprises reported a renewed decline in selling prices. After almost a complete rejection of price cuts in November, which was evidenced by a balance of -1 p.p., in December this indicator dropped to -12 p.p. It should be noted that the crisis minimum of the balance in 2022 was equal to -13 p.p., while in 2020 the minimum evidenced -8 p.p. The absolute minimum of this indicator (-19 p.p.) was registered in 2009. At the same time, Russian industry has for four months in a row reported an intention to increase its prices - the balance of expected price changes in September-December was in the range of +8...+9 p.p.

Amid record low unemployment, industrial enterprises nevertheless managed to recruit until the end of 2022 and reduce the record shortage of personnel registered by the October (2022) survey. Hence, the plans for hiring employees after positive trends in September were steadily gaining optimism during all the following months and in December, they already exceeded the similar plans for 2010 and H1 2021. It should be noted that the record optimism of this indicator for the whole period of the monitoring was registered in January 2022.

3.4. Transportation complex¹

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

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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/a9fbc41aeb4681259708168ff7119a78/2022_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*).

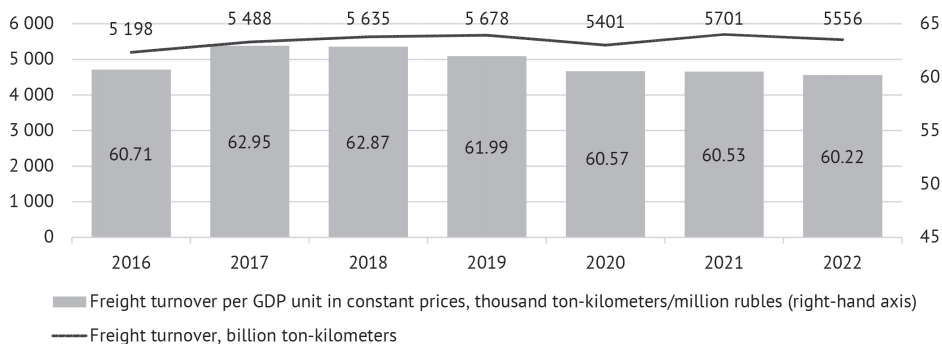


Fig. 4. The dynamic of freight turnover, 2016–2022

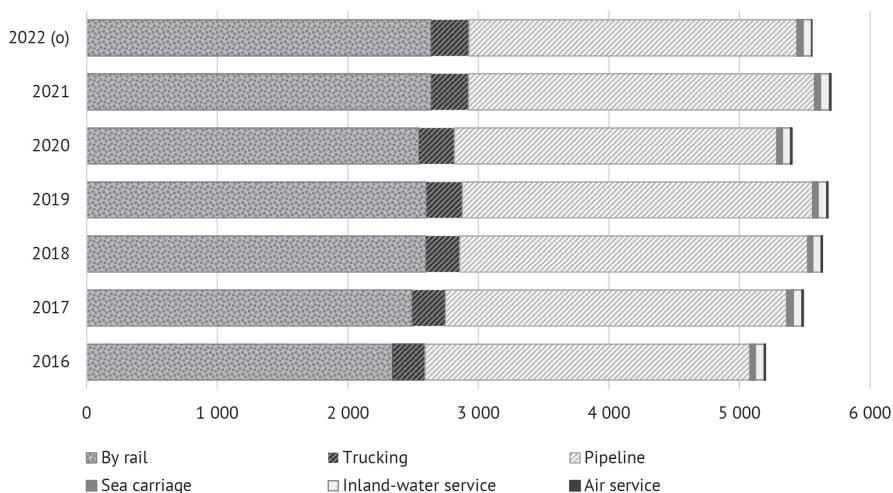
Sources: Rosstat, own calculations.

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.

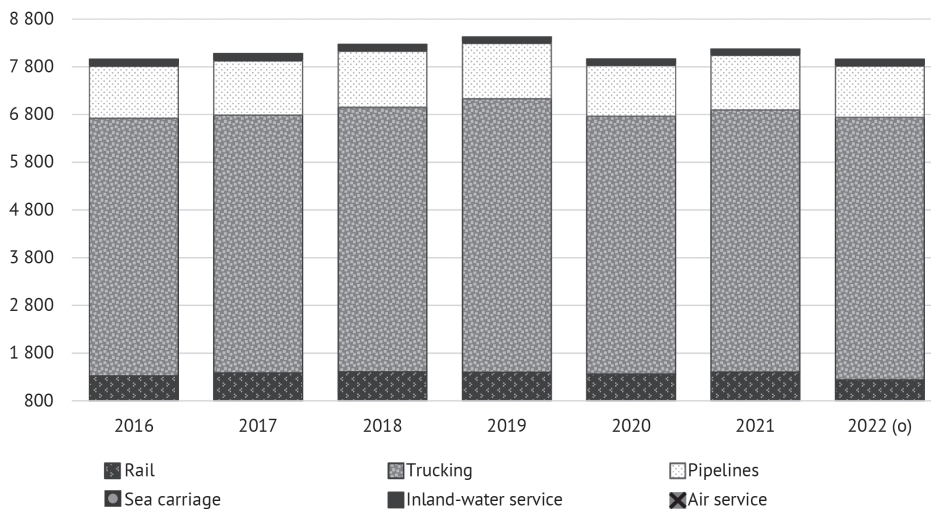
dynamics of freight turnover (*Fig. 6*). Air traffic accounted for the major part of the decrease in freight traffic (-62%), while pipeline transport (-6%) and rail transport (-12%) declined to a lesser extent. The decrease in freight transportation by rail transport was caused by the reduction of loading 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% – IPEM // 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-po-sevmorputi-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-zheleznodorozhnyh-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-dobavlyaet-trevogi-i-finansovoy-nagruzki-na->

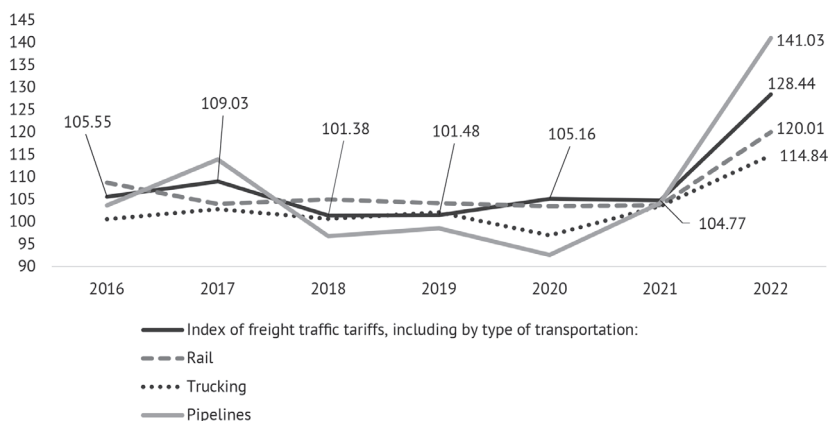


Fig. 7. Dynamics of freight tariffs index (aggregate and by the type of transportation) December against December of the previous year, %

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

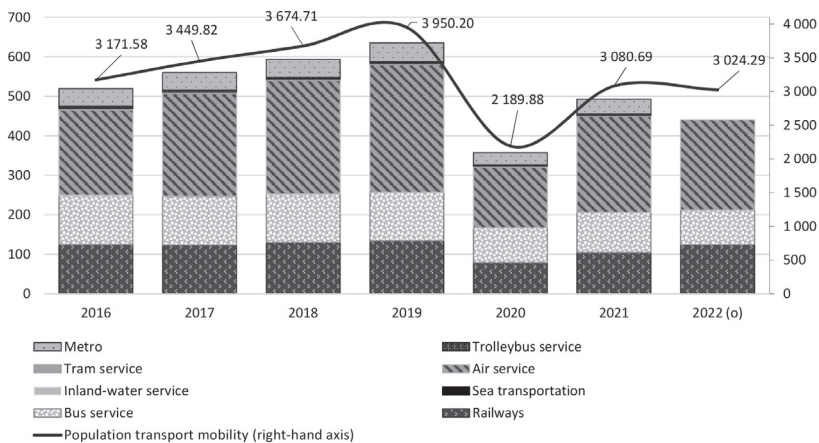
There were no significant changes in the structure of passenger traffic, but there was an increase in the share of rail transport and a decrease in the share of bus transport.

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/deyatelnost-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>

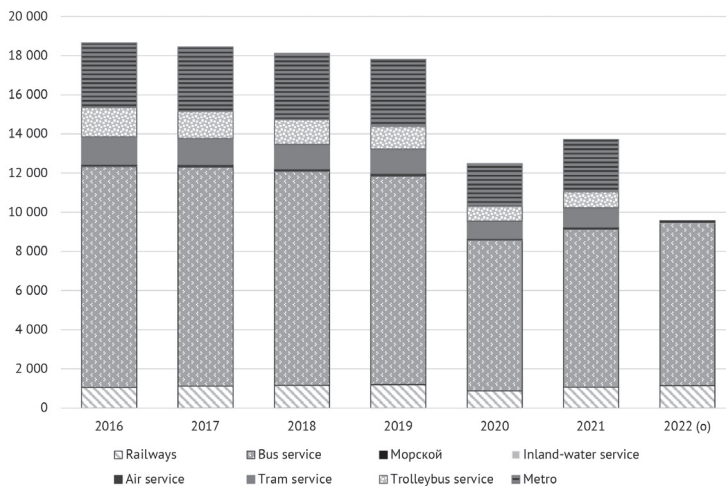
3 Passenger traffic of water transport in St. Petersburg during navigation in 2022 increased by 31% // Maritime news of Russia. URL: <http://www.morvesti.ru/news/1679/99332/>



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://rusland.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-operatoru>

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 – Tuntzyan 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 fleet³ 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

3.5. State of agricultural production and food security⁵

In 2022, index of physical volume of agricultural output in agricultural organizations, peasant (private) farms and household farms grew by 10.2% as compared to the previous year. In monetary terms growth was 14.8% due to rising prices on agricultural products (+4.2%, i.e. much lower as compared to general inflation). Such high growth in physical volume is determined among other things by a lower comparison base – in 2021 index was 99.6% against 2020.

Fig. 10 shows contribution of main products to the change in volume of agricultural production. Main positive factor of change was increase in the gross harvest of grain crops (+29.9% relative to 2021) that led to an increase in physical volume index by 8.0 p.p. for wide range of products.

In 2022, output of livestock went up, however here an impact on overall dynamics of agricultural production is much less significant than in crop production (+1.1 p.p., vs. 9.6 p.p.). Largest increase was observed in pork (+5.0%) which led to a 0.5 p.p. increase in the index. Beef is the only livestock product with negative dynamic (drop in the production of cattle meat in slaughter weight came to 3.6%).

Increase in grain production in 2022 was mainly on the back of a sharp increase in yields (126.9% vs. 2021), which resulted in a record-high gross harvest

1 The EU countries have decided to reduce gas consumption by 15%. What's important to know // RBC. URL: <https://www.rbc.ru/business/27/07/2022/62dfeca29a7947649a78baef>

2 Gas production in Russia dropped by almost 12% // Vedomosti. URL: <https://www.vedomosti.ru/business/articles/2022/12/05/953639-dobicha-gaza-v-rossii-snzilas>

3 Potential losses from leakage at Nord Streams have been estimated // Vzgliad. URL: <https://vz.ru/news/2022/9/27/1179658.html>

4 ACRA announced the recovery of Russian oil exports amid the embargo // RBC. URL: <https://www.rbc.ru/business/08/12/2022/6390756f9a794733bf81beb9>

5 Authors: *Shagaida N.I.*, Doctor of Economic Sciences, Director of Center for Agro-Food Policy, IAES RANEPa; *Ternovskiy D.S.*, Doctor of Economic Sciences, Leading Researcher at the Center for Agro-Food Policy, IAES RANEPa.

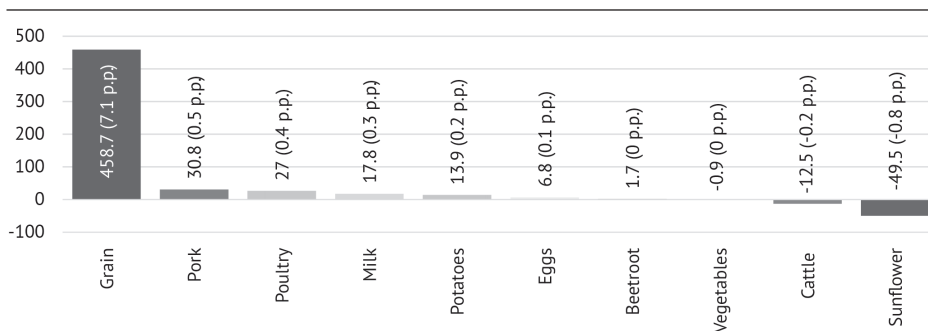


Fig. 10. Contribution of main agricultural products to gross output growth in 2022 (preliminary estimate in 2021 prices, Rb bn)

Source: Own calculations based on Rosstat data.

in country's history. Crop area expansion was negligible at 101.1% relative to 2021 which is within five-year range of crop area fluctuations.

Jump in prices for vegetables in 2021 stimulated an increase in areas sown by agricultural organizations and peasant (private) farms, especially for potatoes (+7.3 and +10.9%, respectively). At the same time, production of vegetables in household farms – main producer of these products, continues to decline (-2.4%) and production of potatoes – slightly increases (+2.0%). Weak dynamics in household farms was compensated by the growth of production of all-farm organizations and peasant farms, which allowed to raise potato production by 4.2% and vegetables production by 3.8%.

Opposed to 2020–2021 when the rise in food prices was mainly owing to higher prices for primary agricultural products or products with a low depth of processing (flour, sunflower oil, potatoes, vegetables) in 2022 rise in prices affected other groups of food products to a greater extent (Fig. 11).

In December 2022 against December 2021, retail prices for basic foodstuffs increased by 11.0%.¹ Main contributors to rising prices were milk and dairy products (2.0 p.p., 18.2% of total increase), meat and meat products (1.8 p.p., 16.4% of total increase) (Fig. 12). It is worth noting that increasing contribution of meat and meat products to growing consumer prices was played by rising prices for sausages and other meat products rather than rising prices for most common types of meat (poultry, pork, beef). Similarly, milk and dairy products drove up consumer prices (by 4-fold) not because of the higher prices for cheese and other products but because of higher price for milk.

At the end of 2022, real prices (current/nominal prices adjusted for general inflation) for a large part of food products remained above the five-year average (Fig. 13). However, lower prices for meat and alcohol (-3.2% and -11.6%, respectively) led to only a 1.3% increase in the value of food consumed in constant prices, given dietary structure.

1 Excluding catering.

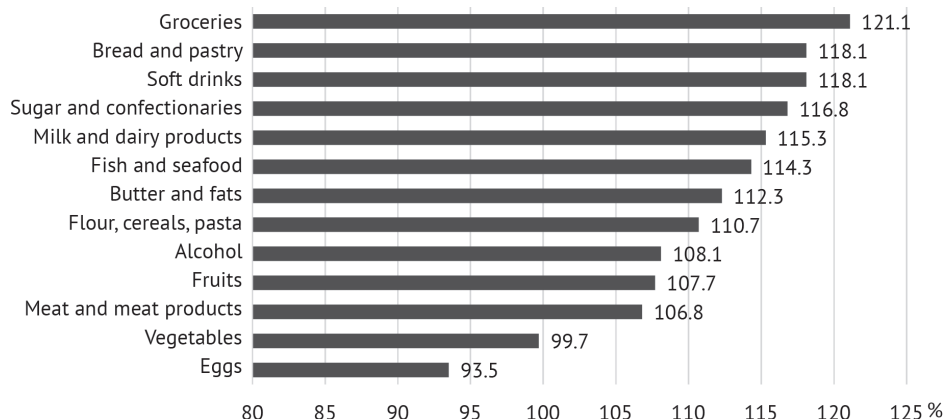


Fig. 11. Growth rate of consumer prices for certain food groups (December 2022 to December 2021)

Source: Own calculations based on Rosstat data.

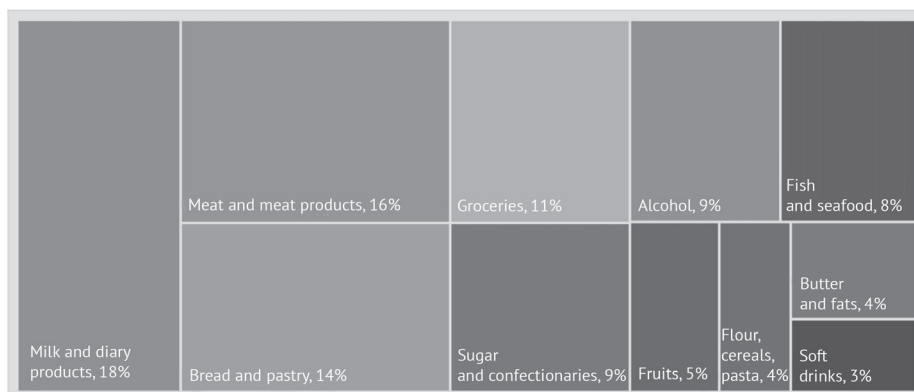


Fig. 12. Contribution of individual commodity groups to overall growth of food retail prices in 2022

Source: Authors' calculations based on Rosstat data.

List of products with a significant contribution to the growth rate of real prices shows that these are the products which are highly self-sufficient (*Table 15*). Thus, grain is the most self-sufficient product but prices for flour, cereals and bread, basis for production of which is grain were the largest contributors to growth of consumer food prices. Fruits are the products with the highest level of import dependence while at the same time they do not contribute to the growth of food prices. As for meat, there is a high degree of import-independence and its contribution to increase in prices was not observed. In other words, level of

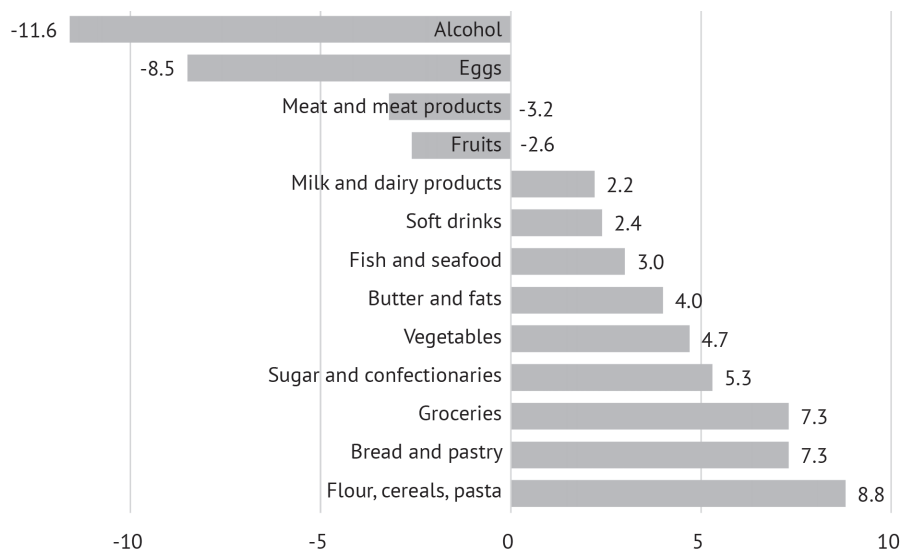


Fig. 13. Growth rate of real prices for individual commodity groups in 2022 to average prices in 2017–2021, %

Source: Own calculations based on Rosstat data.

Table 15

Share of domestic agricultural and fish products in total consumption, %

Products	Produced, mn tonnes		Used for personal, industrial purposes, mn tonnes		Ratio of own production to personal and industrial consumption, %		Value according to the "Food Security Doctrine" (criterion of food independence - at least), %
	2020	2021	2020	2021	2020	2021	
Grain	133.4	121.4	79.4	80.8	170	150	95
Sugar	5.8	5.9	5.7	6.0	101	99	90
Vegetable oil	7.5	6.7	4.7	5.1	158	133	90
Meat and meat products	11.2	11.3	11.2	11.4	100	100	85
Milk and dairy products	32.2	32.3	38.3	38.3	84	84	90
Fish and seafood	5.1	5.3	3.1	3.4	163	156	85
Potatoes	19.6	18.3	20.6	19.3	95	95	95
Vegetables and gourds	15.4	15.4	17.4	16.9	89	91	90
Fruits and berries	4.3	4.7	10.2	10.6	43	45	60

Sources: Rosstat; Food Security Doctrine of the Russian Federation.

self-sufficiency does not guarantee containing increasing prices which directly affects main aspect of food security – economic access to food for the Russian population.

Increase in food prices determined their high volatility. Annual volatility (calculated based on the Food and Agriculture Organization of United Nations (FAO) approach to price warnings¹) from 2006 to 2022 is shown in *Fig. 14*.

High volatility period of 2021–2022 differs from previous periods of high volatility: a shortened period of normal price volatility before the period of high volatility (price alert), the longest period of high volatility since 2006 and the highest amplitude of volatility. Only in October 2022 did the annual volatility indicator move out of the high zone and into the moderately high zone (price watching) and into the normal zone in December.

Based on available information we can conclude that in terms of food availability and stability of food chains epy situation in Russia was favorable in 2022: a high degree of self-sufficiency (main criterion for the state of food security according to Doctrine of Food Security 2020), country is a net exporter of food. By early 2022, most products became competitive with foreign products as evidenced by coefficient of nominal consumer support (*Table 16*).

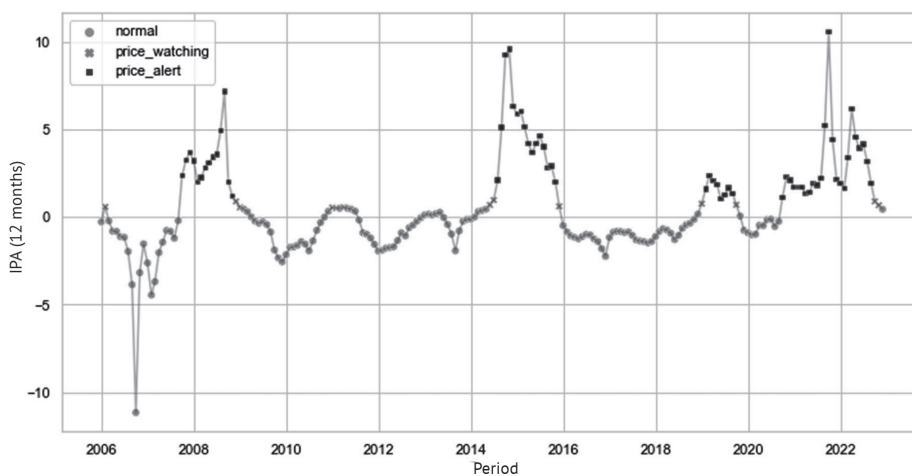


Fig. 14. Level of annual volatility of food prices in Russia (FAO methodology, Price Anomaly Indicator, units)

Source: Rosstat; own calculations.

1 Price volatility is calculated as the difference in the rate of increase in prices in the year under review and the average for the previous 3 years, divided by the standard deviation of the rate of increase. See: Price volatility and food security. Report of the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome, 2011. P. 104. URL: <https://www.fao.org/publications/card/en/c/ca7b994d-715a-5f6e-84ee-6879701d75b2/>

Table 16

Nominal consumer support coefficient in Russia

Products	2012	2017	2018	2019	2020	2021
Wheat	0.89	0.95	0.92	0.99	0.94	0.92
Barley	0.82	0.93	0.80	1.00	0.91	0.91
Corn	0.94	0.97	0.98	1.19	0.99	0.86
Oat	0.84	0.83	0.91	0.77	0.78	0.69
Rye	0.94	1.14	0.96	0.98	1.09	0.93
Sunflower	0.74	0.89	0.94	0.92	0.86	0.90
Sugar	1.00	1.31	1.43	1.30	1.23	1.00
Milk	1.17	1.25	1.42	1.05	1.07	1.00
Beef and veal	1.26	1.23	1.18	1.27	1.23	1.05
Pork	1.53	1.30	1.22	1.24	1.28	1.42
Poultry	1.07	1.13	1.07	1.07	1.11	1.02
Eggs	1.00	1.00	1.00	1.00	1.00	1.00
Potatoes	1.00	1.00	1.00	1.00	1.00	1.00
Other products	1.00	1.01	1.01	1.01	1.00	0.98

Note. Consumer nominal support coefficient: domestic prices + subsidies to agricultural producers / world prices.

Source: Producer and Consumer Support Estimates. OECD Agriculture statistics (database). URL: https://stats.oecd.org/Index.aspx?DataSetCode=MON2022_SINGLE_COMMODITY_INDICATORS

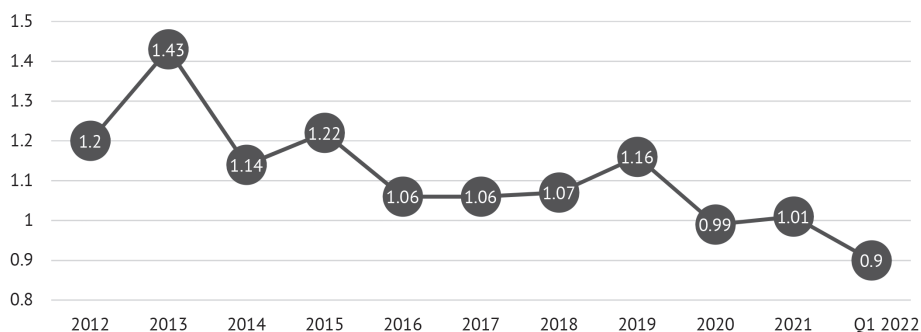


Fig. 15. Share of expenditures on agriculture in total expenditures of the consolidated budget, %

Sources: Federal treasury; Rosstat.

Federal policy in the field of agriculture is implemented through state programs. The budget of these programs in 2022 amounted to 451 billion rubles. (Table 17).

Main part of financing was directed to the “State program for development of agriculture and regulation of markets of agricultural products, raw materials and foodstuffs” (83%), main point of which was stimulation of investment activity in

Table 17

**Federal budget expenditures in 2022 for the implementation
of agrarian policy programs**

Expenditure directions	mn RB	%
State programs, overall	451 444.90	100.0
<i>SP for the development of agriculture and regulation of markets of agricultural products, raw materials and foodstuffs</i>	375 947.50	83.3
FP "Development of branches and technical modernization of the agro-industrial complex"	89 503.20	19.8
FP "Stimulation of investment activity in the agro-industrial complex"	183 181.80	40.6
FP "Development of vegetable and potato growing industries"	0.00	0.0
FP "Export of agro-industrial products"	62 957.40	13.9
KPM "Ensuring activities of the Ministry of Agriculture of the Russian Federation and subordinate organizations"	17 503.10	3.9
KPM "Organization of Veterinary and Phytosanitary Supervision"	12 661.40	2.8
Other	10 140.60	2.2
<i>SP "Integrated Rural Development"</i>	<i>50 136.40</i>	<i>11.1</i>
FP "Development of housing construction in rural areas and improving the level of home improvement"	21 660.90	4.8
FP "Modern Face of Rural Areas".	18 635.60	4.1
Other	9 839.90	2.2
<i>SP "Effective involvement in turnover of agricultural land and development of land reclamation"</i>	<i>25361.00</i>	<i>5.6</i>
SP "Involvement and comprehensive reclamation of agricultural land"	4 927.70	1.1
SP "Export of agro-industrial products"	6 847.10	1.5
VP "Construction, reconstruction and overhaul of land reclamation facilities of state property of Russian Federation"	2 508.10	0.6
KPM "Ensuring effective management of land reclamation complex and organization of rational use of agricultural land"	10 578.10	2.3
Others	500.00	0.1

Source: According to the 2022 consolidated budget schedule

the agro-industrial complex. Additional measures (as compared with financing under general state programs for the whole country) are envisaged under the State Program "Integrated Development of Rural Areas" – which is 11% of the total federal agrarian budget. Despite the fact that Russia has a high degree of self-sufficiency in food, government supports development of export potential. To this end about 6% of federal agrarian budget was allocated for the involvement of unused land in agricultural turnover and for the development of land reclamation.

State support contributes to production of a sufficient volume of products (with the exception of fruit and dairy products for which the self-sufficiency level in 2022 was not reached) and sustainability of food chains. In 2022, the situation in this component of food security is favorable. The situation with possibility of maintaining access to imported resources that also provided the self-sufficiency and sustainability remains unclear. Based on preliminary data, investments in fixed assets of agricultural organizations declined in 2022 if we judge by available

operational data on medium and large business entities (*Table 18*). Meanwhile, in economy the level of investment surged (+7.6%).

Table 18

Index of physical volume of investment in fixed assets in agriculture in the Russian Federation in January-September (without small businesses and volume of investment not observed by direct statistical methods)

Year	Growth rate relative to previous year, %	In % to total
2021	105.3	3.4
2022	91.8	2.8
<i>For reference: total for all types of economic activity</i>	107.6	100

Source: Rosstat.

In terms of economic affordability of food in 2022, it is unlikely to improve in comparison with 2021 (data on consumption in 2022 will be available only in July-August 2023): income growth is not observed as well as annual food deflation. According to data for 2021, a member of an average household could purchase 94% of the cost of his or her diet (in 2020 it was 96%). About 30% of households steadily spend between 47% and 52% (+1/-1% year-on-year) of their final consumption expenditures on food but cannot go beyond 85% of the rational norm of consumption. The fact that consumption situation has not improved in 2022 is evidenced by dynamics of food retail sales (*Fig. 16*).

Access to food has not changed: the share of sparsely populated villages is not decreasing (where it is economically unprofitable to have stores with a wide range of food products), the share of villages with paved roads changes little (which makes it difficult to travel from sparsely populated villages to stores with a wide variety of products as there is no regular public transportation due to the lack of roads with paved surfaces).

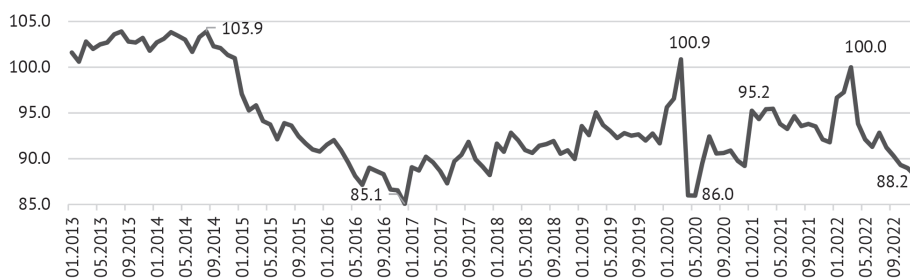


Fig. 16. Retail sales of food products relative to corresponding month of 2012 (in 2012 prices), %

Source: Rosstat.

From the position characterizing the use of food, there were no changes in 2022: average diet boasts of an excess consumption of fats and a lack of consumption of proteins and carbohydrates. Difference in quality of diet can be estimated through the cost per calorie of the actual diet: cost in the first income group (most vulnerable families) was 7 kopecks and in the tenth (most well-off) – 13 kopecks.

In conclusion, it is necessary to note the following. In 2022, agriculture demonstrated its resilience during deterioration of macroeconomic situation: 1) in the short term, industry was provided with resources for production of current year's crop even before the imposition of sanctions; 2) agricultural sector is very inertial and can function for a long time, moving from modern and imported resources to those produced in the country with varying compliance to international level; 3) agricultural products and resources for their production are not subject to direct sanctions and should be taken out from the secondary sanctions (but in fact barriers exist); 4) agricultural sector is largely modernized, machinery and process lines can function until their natural wear and tear.

It is difficult to estimate volume of exports, which in recent years has replaced domestic consumption as the main driver of agricultural growth due to lack of official data. According to industry estimates, since November 2022 the volume of grain exports of the current season began to exceed indicators of 2021, which is facilitated by the grain deal (over July-October 2022, 3.5% less wheat was exported than a year earlier but it is expected that in July-October shipments will exceed last year's level by 9%). In August 2022, total backlog of 2021 exports was approaching 30%. Above trend indicates that Russian grain exporters have overcome implicit sanctions restrictions (refusal of certain carriers to do the job, restrictions on entering ports, restrictions on insurance and financing of shipments). Nevertheless, growth rate of grain production is much higher than its exports: according to estimates of the International Grain Council growth of wheat production in Russia is 25 million tons and exports – 8 million tons. With insignificant growth of domestic consumption this situation will lead to actual doubling of stocks at the end of the season – to the highest level ever in Russia which negatively affects situation on the grain market and income of grain producers.

Export prices for Russian wheat are reduced not only in rubles due to strengthening of exchange rate in H2 2022 but also in dollars (in December 2022, a decrease of 6.3% from prices of the year before while ruble strengthened by 10.8%). Domestic wheat prices in 2022 dropped by 20–30% as compared with 2021 depending on variety and region, approaching level of 2019. A less acute but similar situation is typical for sunflower products of which constitute second most important article of Russian agricultural export.

Given the fact that grain producers are numerous and are mostly small businesses (more than 60% are peasant farms and organizations – small businesses) the problem of their financial standing may outgrow the framework of the sector. Prices for their products are falling while prices for resources are rising: in 2021, the overall growth of prices for agricultural products lagged behind growth of prices for resources (for products it was 14% and for resources

for agriculture – 17.8%). This situation is exacerbated by the fact that this level of domestic prices is due not only to export problems, level of external prices but also to export duties which are only partially returned to agricultural sector and distributed primarily to other beneficiaries. It would be advisable to reconsider refund mechanism if export duties are retained: return the entire volume to the agricultural sector and distribute it among producers in proportion to the volume of sold grain.

In general, the problem of food security in the Russian Federation has finally shifted from the need for self-sufficiency to facilitating economic access to food for citizens while support for functioning of the agro-industrial complex moved to helping producers to export products.

3.6. Business activity of small and medium-sized enterprises in Russia in the context of sanctions¹

2022 demonstrated intensification of sanction pressure on the Russian Federation. Consumer demand contracted against the backdrop of inflation coupled with the rising cost of borrowing, many entrepreneurs faced the risk of bankruptcy. Under pressure from unfriendly countries, many large foreign companies left Russia, and established supply chains were severed. The release of jobs, caused by the closure of a number of industries, created the preconditions for the development of forced entrepreneurship, mainly for people who lost their jobs. Small and medium-sized enterprises suffered both from the imposed restrictions and the ensuing decline in consumer demand, and therefore became one of the objects of the anti-crisis state policy.

In the meantime, the prevailing conditions opened up opportunities for the development of entrepreneurship in the form of vacated market niches, reduced competition in a number of commodity positions, increased demand for domestic high-tech goods and services, as well as for the services of small businesses when participating in parallel imports. Small and medium business plays a significant role in the reduction of sanction pressure and in import substitution due to greater flexibility and adaptability. In addition, small and medium-sized enterprises (SMEs) are less interesting to external regulators because of their scale. According to the Spring 2022 surveys,² SMEs are pessimistic. SMEs were pessimistic about their prospects, but by the end of 2022, it became clear that they had partially adapted to the new conditions: indicators such as the number of SMEs and employment there increased, although we cannot yet say that they returned to the pre-crisis values of 2019.

1 Authors: *Barinova V.A.*, Candidate of Economic Sciences, Head of Innovation economy department, Gaidar Institute; Head of Department of Sustainable development issues studies, IAES RANEPa; *Zemtsov S.P.*, Candidate of Technical Sciences, Director of Center for Economic geography and regional studies, IAES RANEPa; *Demidova K.V.*, Junior Researcher, Department of Sustainable development issues studies, IAES RANEPa; *Levakov P.A.*, Junior Researcher, Department of Sustainable development issues studies, IAES RANEPa.

2 The first wave of rapid socio-economic monitoring among entrepreneurs. March 2022. URL: <https://nafi.ru/projects/predprinimatelstvo/pervaya-volna-operativnogo-sotsialno-ekonomicheskogo-monitoringa-sredi-predprinimateley/>, InFom "Voices of Entrepreneurs". April 2022. URL: <https://smbiz.fom.ru/>

3.6.1. Analysis of the state of the SME sector

As of November 2021, the number of firms in the SME sector surged by about 100,000 units from the height of the 2020 crisis period triggered by coronavirus restrictions (Fig. 17). By November 2022, the number of firms in the SME sector returned to the values of the same period in 2019, but despite the positive trend, the peak values of 2018 have not yet been reached. Compared to values at the end of 2018, however, the pre-pandemic level has been exceeded. This may be due to the post-pandemic recovery and adaptation of the business sector to the sanctions. Probably, the pandemic experience, when logistical links were severed, prepared the business sector for external shocks, in particular, certain stocks of goods were accumulated, experience in dealing with sanctions restrictions was gained, and competences in supplying sanctioned goods to Russia appeared. In addition, a six-month moratorium on bankruptcy was introduced in March 2022, which statistically reduced the number of liquidated enterprises.

Analyzing the data from the Unified Registry of SMEs of the Federal Tax Service, it should be borne in mind that there is a peculiar “seasonality” (Fig. 18)

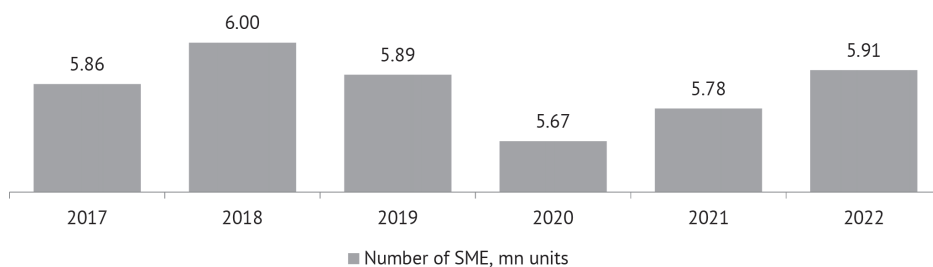


Fig. 17. Dynamic of the number of firms (including IE in SME sector in Russia in 2017–2022 (has of November each year)

Source: According to data of Unified register of SME FTS RF.

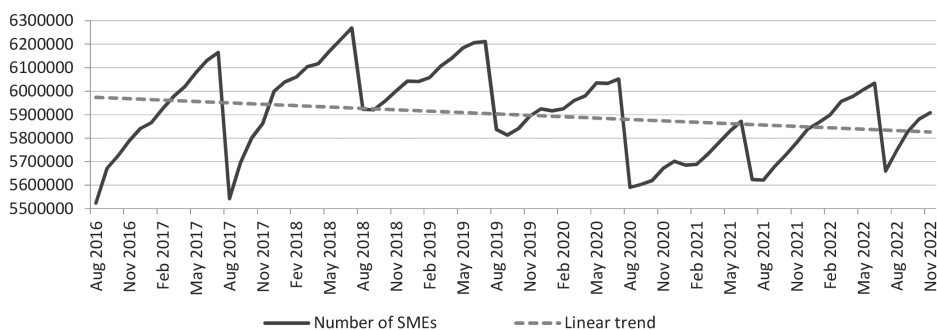


Fig. 18. Dynamics of the number of SMEs in Russia in 2016–2022

Source: According to data of Unified register of SME FTS RF.

associated with the fact that annually in August (from 2021 – July) the registry is cleared of businesses that ceased operations, failed to submit reports, no longer meet the criteria for inclusion as SME subjects (failure to meet the criteria must be recorded for 3 consecutive years). It should also be noted that legal entities and individual entrepreneurs who have ceased their activities are also excluded from the Register on the 10th of each month. For these reasons, the data immediately after the Registry is cleared is the most correct.¹ As of July 2022, the number of SMEs was up from a year earlier, but was still 1.5% below the pre-pandemic 2019 value. The decreasing linear trend in *Fig. 18* demonstrates the overall dynamics of the number of firms in the SME sector – a gradual shift to other business formats, including the self-employed, whose number as of November 2022 was approximately 5.72 mn people.

Over the past 6–7 years, the number of legal entities in the structure of the SME sector has been steadily decreasing (*Fig. 19*), while the number of individual entrepreneurs has been steadily increasing. It is very likely that many legal entities are moving to the format of individual entrepreneurship in order, among other things, to optimize the tax burden.

The dynamics of the number of firms over the period under review is positive for 65 regions. Of the regions with negative dynamics, nine were in the CFD and North Western Federal District, for which this pattern can be explained by the effect of the proximity of the largest agglomerations – Moscow and St. Petersburg, where business could migrate. Among the regions with positive dynamics of the SME sector in 2021–2022, it is worth mentioning the national republics of the North Caucasus Federal District: the Chechen Republic (+15.6%),

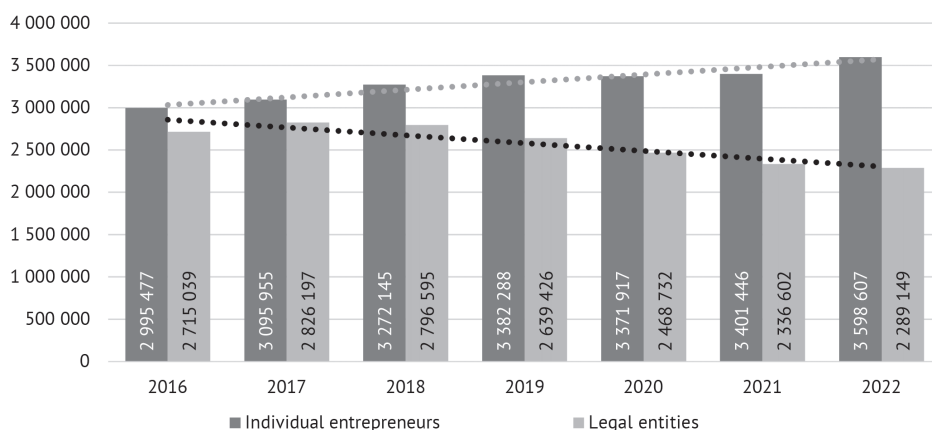


Fig. 19. Ratio of the number of individual entrepreneurs and legal entities - subjects of the SME sector for 2016–2022 (calculated on the basis of the average values for the year)

Source: Own calculations on the data of Unified register SME FTS RF.

1 Russian Economy in 2021. Trends and Outlooks. Issue 43. Moscow. Gaidar Institute Press. 2022.

the Republic of Ingushetia (+11.4%), the Republic of Dagestan (+6.6%), the Republic of North Osetia-Alania (+2.5%), the Kabardino-Balkarian Republic (+2.4%), the Karachay-Cherkess Republic (+4.1%). Two key factors played a major role for these republics – a rather low base and a traditionally large informal sector of the economy. State support measures created additional incentives for the transition to the formal economy, while the proximity to neutral countries (Georgia, Azerbaijan) contributed to the emergence of enterprises focused on parallel imports.

In absolute values, the increase in the number of firms in the SME sector was maximum in the largest city of the Russian Federation and its agglomeration – Moscow (+52,300), the Moscow region (+25,000). These regions are traditionally considered as one of the key centers of SME development. Also, an additional amount of support for starting a business due to the increased sanction pressure and the departure of foreign companies had a positive impact on the indicator under consideration in these agglomerations.

Employment in SMEs is also one of the key indicators of the overall state of the SME sector.¹ According to VCIOM,² in 2022 about 10% of Russians surveyed have their own business, which is higher than in 2016 and 1992 (around 3%). A large proportion of them are self-employed. The share of those who want to start their own business has fallen from 33% to 23% since 2016. Among those who do not plan to open a business, the share of those who believe that the state can liquidate private businesses has increased. The crisis phenomena stimulated forced entrepreneurship when alternatives to employment and income generation are limited. The share of those employed in the SME sector (together with the self-employed) in the total number of the employed in Russia reached 34.8%, in 2021 - around 30%.

By November 2022, SME employment surged by about 15% compared to the same period of the previous year (*Fig. 20*). The key driver of growth was the increase in the number of self-employed, which increased by around 2.53 mn over the past two years (from 2021 to 2022).³ Employment by individual entrepreneurs has also increased and exceeded pre-crisis values. However, compared to 2020, the number of employees in SMEs – legal entities could not recover, although it shows a positive trend. As of July 2022, excluding the self-employed, the value of this indicator was below the 2019 level.

Employment in the SME sector went up in all regions of the Russian Federation. Special mention should be made of the North Caucasian Federal District, where

1 Zemtsov S.P., Tsareva Yu.V., Salimova D.R., Barinova V.A. Small and medium-sized enterprises in Russia: In search of the employment growth factors // *Voprosy Ekonomiki*. 2021. No. 12. C. 66–93.

2 VCIOM. URL: <https://wciom.ru/analytical-reviews/analiticheskii-obzor/pora-predprinimat-monitoring-1992-2022>

3 For correct estimation, it is necessary to distinguish the share of citizens who combine their self-employed status with work in another organization in the SME sector. According to the Unified Register of SMEs, for the period from June 2021 to March 2022, the share of job combinations in the employment structure was about 6%, which is lower than the total growth of employment in the SME sector for the relevant period. Data on the share of part-time workers for earlier periods are not available, but even the current figures suggest that employment growth is not entirely due to an increase in the number of part-time workers.

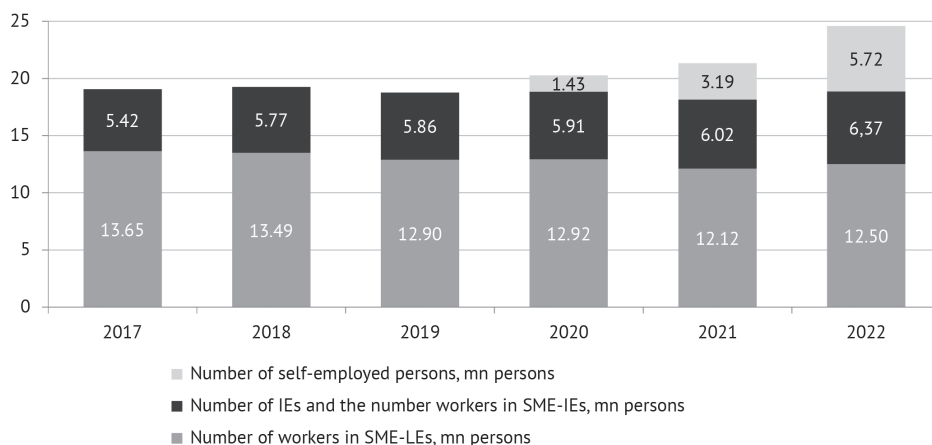


Fig. 20. Employment dynamic in SME sector in Russia in 2017–2022 (data for November each year)

Source: Data of Unified Register of SME FTS RF.

employment in 2021–2022 grew at a record pace, which has already been explained by the “whitewashing” of the economy, including for taking advantage of parallel imports. In absolute terms, employment growth was maximal mostly in the biggest cities and agglomerations – Moscow (+525,100 people), Moscow region (+213,900), St. Petersburg (+224,000).

Between 2017 and 2022, the number of organizations liquidated exceeded the number of newly created ones (Fig. 21), but the gap between the figures in

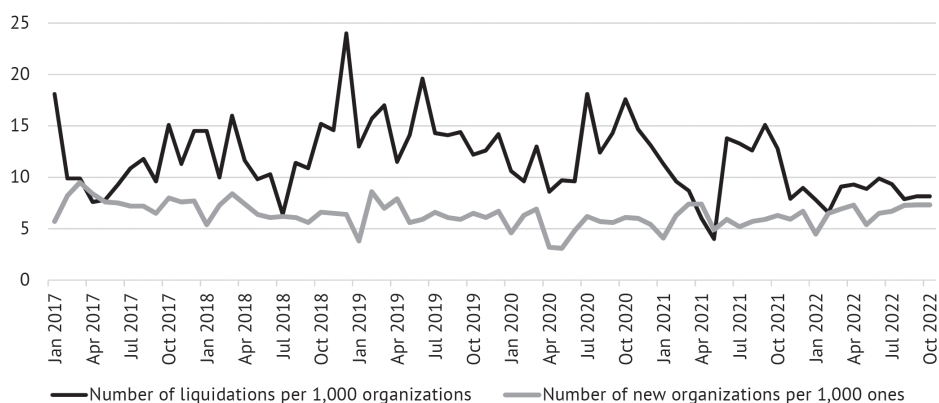


Fig. 21. Dynamic of liquidations and new organizations per 1,000 organizations for 2017–2022

Source: Rosstat.

question was narrowing due to the bankruptcy bans enacted during the pandemic and in 2022 and policies supporting the opening of new businesses.

4.6.2. Sanctions restrictions and anti-crisis support measures of SME

At the beginning of 2022, a number of countries imposed various kinds of anti-Russian sanctions, which directly affected the activities of small and medium-size businesses in Russia (*Table 19*). Foreign economic relations of business were reduced through direct and indirect restrictions on exports and imports of goods, bans on the transportation of goods through certain countries were introduced, refusals to insure cargo from Russian ports became more frequent. Financial sanctions (disconnection from SWIFT system, bans on lending to Russian counterparties, etc.) created difficulties in payment of foreign trade contracts. Under external pressure, the Russian government, on the one hand, adopted a number of counter-sanction measures, which could have had a negative impact on the SME sector, but on the other hand, continued to look for new ways of support.

Table 19

Sanctions and measures of the Russian authorities in response to sanctions that directly affect SMEs in Russia in 2022

Sanctions¹/measures	Possible issues for SME	Support measures and markets adaptation
The United States, the United Kingdom, European Union countries, Japan, and Taiwan have banned exports to Russia of a number of categories of equipment and spare parts, as well as technology, including in high-tech industries (telecommunications, electronics, aircraft, and shipbuilding). Restrictions were imposed on imports of a number of goods from Russia.	The shrinking volume of available markets. Firms using foreign equipment or components may face a lack of analogues or insufficient quality, as well as higher prices when purchasing in other markets.	Authorization of parallel imports. ² Preferential lending program for purchases of priority imported products. ³ «Import substitution exchange». ⁴
Disconnection of a number of Russian banks from the SWIFT system.	Inability to carry out operations for firms that use the services of these banks and work with foreign counterparties.	Expansion of the number of countries where the Mir payment system operates.

1 Guide to sanctions and restrictions against the Russian Federation. URL: <https://base.garant.ru/57750632/>

2 Permission for parallel import means that importers no longer need the consent of the Russian trademark owner to import goods into Russia. Federal Law No. 213-FZ of 28.06.2022 «On Amending Article 18 of the Federal Law «On Amending Certain Legislative Acts of the Russian Federation».

3 Decree of the Government of the Russian Federation of 18.05.2022 No. 895 «On approval of the rules for granting subsidies from the federal budget to credit institutions for reimbursement of lost income on loans extended for the purchase of priority imported products.»

4 URL: <https://etppb.ru/portal/import-substitution/>

Sanctions ¹ /measures	Possible issues for SME	Support measures and markets adaptation
Bans on Russian cargo through a number of ports of sanctioning countries.	Logistical complexities for foreign economic relations.	Expansion of border infrastructure with neutral and friendly countries.
Suspension of Visa and Mastercard payment systems in Russia.	Problems will arise for companies that pay salaries to employees outside the country.	Deployment of the quick payment system, as well as the «Mir» payment system.
The Bank of Russia raised its key rate from 9.5 to 20% per annum in March – early April 2022. Already at the end of July 2022, the rate returned to the values of the beginning of the year.	Increase in interest rates on loans by 10 p.p. or more; increase in penalties for late payment of taxes, fees, contributions; increase in prices for goods and decrease in demand for products from the population.	SME concessional lending programs.
Blocking Facebook and Instagram.	Loss of important channels to promote SME brands and products.	Growth of e-commerce via online marketplaces (Ozon, Wildberries, etc.).

Source: Own compilation on data according to the official pages of authorities and bank on the internet.¹

In our view, the most important decision in response to the sanctions restrictions on imports and exports was to allow parallel imports, which lets entrepreneurs to seek ways to circumvent the sanctions and fill Russian markets with basic goods. We managed to avoid market shortages and create incentives for entrepreneurial activity. Against the backdrop of the closure of certain foreign stores due to the sanctions, some consumer demand moved online, as the sought-after goods imported through parallel imports began to be sold on marketplaces. The share of e-commerce in the total volume of retail reached its maximum on the eve of the sanctions – 11.2% (8.8% in 2021). At the same time, not only the population, but also small and medium-sized enterprises are using the possibilities of online orders. For example, according to Avito, the number of ads for the sale of equipment and consumables has doubled.²

The government also launched a program of preferential lending for purchases of priority foreign-made products at a rate of no more than 30% of the key rate of the Central Bank plus 3 p.p. The program also made it possible to avoid shortages of certain goods, in particular, it applied to the purchase of foreign-made drugs, foodstuffs, vehicles, construction materials, machine tools and electronics. In response to the shortage of components, a digital service “Import Substitution Exchange” was put in place. With its help, customers can order the purchase of industrial products, spare parts and components, and suppliers can send their price lists and offer analogues.

According to Rosstat, the manufacturing sector, which could potentially be affected by the ban on the import of equipment and technologies into Russia, employs about 8% of microenterprises, 13% of small enterprises and 26% of medium enterprises. At the same time, they employ 12, 17 and 33% of workers in

1 Demidova K.V. SME in the context of anti-Russian sanctions: Results of the first half of 2022 and possible areas of support // Russian Economic Development. 2022. No. 11. Pp. 46–58.

2 URL: <https://kommersant-ru.turbopages.org/kommersant.ru/s/doc/5839267>

each sector, respectively. The sanctions primarily affect medium-sized businesses. The main issues could be the lack of components, materials and raw materials, lack of their full-fledged analogues in the Russian market, higher prices both in the domestic and Asian markets. Among the measures of potential state assistance in this direction is the launch on the SME digital platform sales of 112 products of Russian software at a discount of 50% for SMEs and individual entrepreneurs, subsidized from the federal budget. In addition, SME Corporation has extended preferential leasing, the rate of which when SMEs purchase Russian equipment is 6%. The income of the company-applicant must not exceed Rb800 mn, and it can employ not more than 100 people. In order to stabilize the market, the government banned export of a number of goods and raw materials, including among others hardware instrumentation, equipment, means of transport.

In response to shrinking markets, the government stimulated purchases from small businesses. From July 1, 2022, amendments were introduced to the laws No. 44-FZ and No. 223-FZ, through which purchases from SMEs can be made through a non-competitive electronic procurement, outlined the requirements for an independent guarantee for transactions in which they participate. Over the 9 months of 2022, the share of purchases by large companies from small and medium-sized businesses under the law No. 223-FZ was almost a half (48.5%) of the total volume, although in 2021 it did not exceed 30%.¹ Every fifth large company today has purchases from SMEs.² Around 2% of SMEs in 2020 against almost 3% of SME's in 2022 were suppliers to the government customers on average in Russia. The self-employed can participate in procurements under Law No. 223-FZ on the same terms as small and medium businesses. The number of such self-employed people tripled in 2022.

As a response to restrictions on banking operations, the system of fast payments³ became widespread among entrepreneurs, the volume of transactions through which surged by more than 2-fold in 2022. There are 311 banks connected to the system.

One of the most significant issues was the raising of the key rate of the Central Bank (CB) to 20%. Although the rates on loan contracts, which were concluded before February 28, 2022, were supposed to be preserved. For those borrowers who had taken a loan before March 1, 2022, there was an opportunity to request until September 30 this year to have a credit vacation for a period of up to six months. After the imposition of sanctions, the lending banks were recommended to freeze penalties and fines for the borrowers, affected by the imposition of economic sanctions. At the same time, the affected industries are named most types of activities where private business is predominant.

To support SMEs, SME Corporation in cooperation with the Central Bank implemented three lending incentive programs (LIP), under which loan rates did not depend on the key rate of the Central Bank. Among them are "LIP Anti-

1 Companies with state participation made purchases from SMEs this year to the tune of Rb3 trillion. URL: https://www.economy.gov.ru/material/news/zakupki_kompaniy_s_gosuchastiem_u_msp_v_tekushchem_godu_prevysili_3_trln_rublej.html

2 SME Corporation. URL: <https://t.me/corpmospof/1807>

3 FPS: main indicators. URL: https://cbr.ru/analytics/nps/sbp/4_2022/

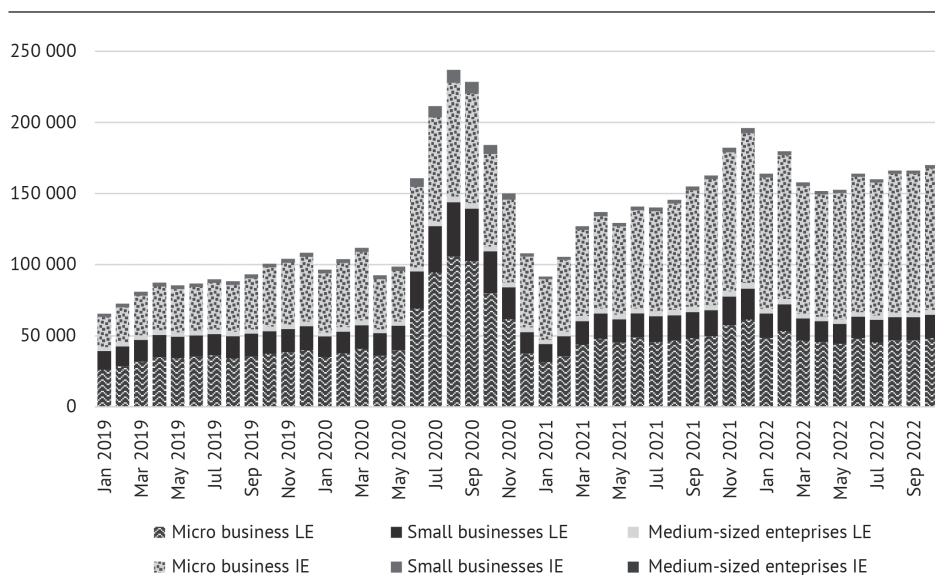


Fig. 22. Number of SMEs dynamic that received loans in 2019–2022

Source: Bank of Russia data.

Crisis” (Rb60 bn, SMEs), “LIP Investment” (Rb335 bn, all SMEs) and “LIP Revolving” (Rb340 bn, all SMEs). The first LIP allowed to obtain a loan for investment purposes or working capital and refinancing at the rate of 8.5% per annum. Rates on the second program differ depending on the size of the business: for medium-sized businesses it is up to 13.5%, for small and micro businesses – up to 15%. Loans for medium-sized businesses were provided at a rate of up to 13.5% and up to 15% for other businesses. Since June 15, 2022, when the key rate of the Central Bank was reduced to 9.5%, the conditions of the main program of turnover loans have also changed, which are now calculated as “the key rate of the Central Bank minus 1.5 p.p. High-tech and innovative SMEs to replenish working capital or investment SME Bank provides concessional loans with an interest rate of 3% for up to 3 years. The volume of possible credit is up to Rb500 mn.

In times of crisis, the demand for credit increases, and the government seeks to provide financial support to SMEs.¹ Fig. 22 shows the peak of credit recipients among SMEs in the summer of 2020 when the state programs commenced operating; during the period of increased sanction pressure in 2022, the values of the indicator increased.

An increase in the number of concessional loans can lead to a rise in debt and an increase in the number of enterprises whose financial condition is unstable. Since

1 Barinova V.A., Zemtsov S.P., Tsareva Yu.V. In Search of Entrepreneurship in Russia. Part. I. What hinders the development of small and medium-sized businesses. Moscow. Delo Publishing House RANEPA, 2023.

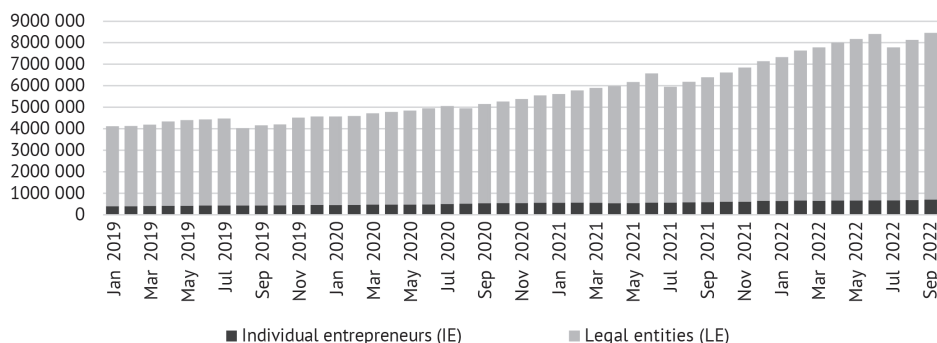


Fig. 23. Credit exposure dynamic (including past-due debt) of SMEs in 2019–2022, Rb mn.

Source: Bank of Russia data.

September 2019, the volume of SMEs’ credit indebtedness has been increasing almost continuously (*Fig. 23*).

Additional SME support measures included: exemption of enterprises from inspections until the end of 2022; provision of tax deferrals; provision of property tax benefits for individual entrepreneurs (IE); temporary reduction of administrative burden, implying automatic renewal of licenses and agreements that expire before December 31, 2022, simplified mode of declaring imported goods, the opportunity not to pass qualification examinations; cancellation of fines under government contracts; limitation of the list of causes for institution of proceedings The launch of the “МСП.РФ”¹ platform was an additional opportunity for SMEs to obtain information about all available types of state support under sanctions and to receive targeted assistance for their specific problem.

Among the support measures announced by the government on March 22, 2022 is the reduction of the barrier to entry for investments in offset contracts from Rb1 bn to Rb100 mn for contracting and construction in different regions. Presumably, this could facilitate the involvement of SMEs in the investment process.

In addition, already in April 2022 reduced rates of insurance contributions for SMEs (reduction from 30 to 15%), paid on the part of the salary above the minimum living wage. Several support measures were also introduced for SMEs operating under the STS (simplified taxation system). In particular, the deadline for payment of tax under the simplified taxation system was moved from 31.03.2022 to 31.10.2022 for legal entities and from 30.04.2022 to 30.11.2022 for individual entrepreneurs. Day of payment of advance payment of STS for Q1 2022 was moved from April 25 to November 30. For the year extended deadline for the payment of insurance premiums. Some regions have reduced rates on STS for small businesses operating in the IT sector. With the object of taxation “income”,

¹ URL: <https://mcp.rf/>

the rate is reduced from 6% to 1% and to 5% in case of taxation “income minus expenses”. A moratorium on bankruptcy was introduced from April to October.

Regarding regional support measures, until December 1, 2025, the subjects of the Russian Federation extended the option to reduce the rate of STS and PST (patent system of taxation) for the first registered IEs that operate in manufacturing, consumer services, providing temporary accommodation, as well as in the social sphere.

A large number of exemptions were introduced in 2022 for the strategic IT sector. Even though some of them were cancelled during the year, the IT sector remains one of the most supported. The following support measures (in addition to those mentioned above) are provided for IT organizations that have received state accreditation:

- Corporate income tax rate at 0% in 2022–2024 and 3% from 2025;
- VAT exemption for operations on the transfer of rights to use software;
- Reduction of insurance premium rates from 14 to 7.6%, their deferral for one year;
- Moratorium on inspections until 03.03.2025;
- In some regions, land tax and rental rates for communications facilities and data centers have been halved.

The agro-industrial complex was also supported, as well as industrial and trade enterprises – for strategic organizations (not necessarily SMEs), preserving employment. For the agro-industrial complex (AIC), the initial amount for concessional investment loans was Rb7 bn for a period of 1 year at 10%; for the rest of the industries – up to Rb10 bn at the rate of 11%. Later, on August 11, the rate for agricultural producers was cut to 5%; besides, the possibility of receiving concessional investment loans was extended to the organizations engaged in transportation of agricultural products. Thus, among the main support measures can be noted the active work of the government in terms of concessional lending and facilitation of payment of interest on loans in the form of rescheduling, etc.; reduction of the burden in terms of mandatory payments on insurance premiums; significant reduction of administrative burden in the form of moratoria on inspections, restrictions on fines, criminal cases, simplified public procurement, etc.; digitalization of services provided via the set-up of an official platform.

3.6.3. Entrepreneurs’ situation assessment and anti-crisis policy

The attitude of business to the situation in the economy in 2022 was unclear.

According to the National Agency for Financial Studies (NAFI)¹ surveys conducted in March 2022, the most common reaction of businesses to the crisis was to cut costs (this was noted by 83% of respondents, and among micro- and small enterprises – 86% and 87%), in particular, firms reduced spending on IT, advertising or marketing, reduced staff and wages, especially its stimulating part, transferred employees to remote working mode, refused to rent offices. In

¹ The first stage of rapid socio-economic monitoring among entrepreneurs. March 2022. URL: <https://nafi.ru/projects/predprinimatelstvo/pervaya-volna-operativnogo-sotsialno-ekonomicheskogo-monitoringa-sredi-predprinimateley/>

April 2022, 28% of surveyed by NAFI SMEs anticipated that it would take them up to six months to resolve supply chain issues.¹ By early May, the proportion of entrepreneurs, according to NAFI research,² assessing the financial standing of their business as good, has increased from 25 to 34%, and the share of those who assessed it as bad has almost halved (from 40 to 23%). Sense of the future has also become more optimistic: 35% of respondents among business representatives assessed the financial prospects of their companies as good (in March – 27%), while 36% expected deterioration of their companies' financial standing (instead of 51% in March). According to opinion polls conducted by Boris Titov in May 2022,³ the majority of businessmen assessed their situation negatively: 67.1% of the respondents' indexes were decreasing, 12% of the respondents were in a state of crisis, and 22.4% “were hovering around zero”.

At the same time, in April 2022, according to the FOM survey,⁴ 33% of the surveyed SMEs expected that new opportunities will open in connection with the sanctions, their business prospects will improve, in particular, on the back of increased demand (13%), the need for import substitution (9%), reduced competition (8%).

According to a November survey conducted by Boris Titov,⁵ around 55% of Russian companies have either already adapted to work under sanctions or hope to do so, although in general the sanctions affected 86.8% of Russian companies.

According to the April FOM surveys,⁶ sanctions or retaliatory measures of the Russian authorities had a negative impact on business of 80% of surveyed small and medium-sized enterprises, and negative impact concentrated in the following areas: general price hike, an increase in purchase prices for goods and services, depreciation of the ruble (57%), reduced demand for goods and services (less work, orders, customers) (25%), problems with deliveries (16%).

Surveys of entrepreneurs are aimed at finding out the SMEs' response to the crisis, identifying the most sought-after areas of support and are used to adjust existing areas of support based on previously established targets. Many support measures are inaccessible to SMEs due to asymmetry of information. According to FOM estimates,⁷ less than a half of the respondents know about the support measures (the share dropped by 12 p.p. from 60% in Q2 to 48% by the end of 2022), only 33% were planning to receive support (43% in Q2). The share of those who applied went up from 4% in Q2 to 6% among all respondents in Q4, but among them 49% were dissatisfied with the results. The surveyed SMEs have an understanding of what measures are really needed. 67% of SMEs surveyed by

1 Entrepreneurs plan to fix supply chains within six months. 25.04.2022. URL: <https://nafi.ru/analytics/predprinimateli-planiruyut-naladit-tsepochki-postavok-v-techenie-polugoda/>

2 NAFI Business Climate Index: Dynamics for 3 months. 17.05.2022. URL: <https://nafi.ru/analytics/index-delovogo-klimata-nafi-dinamika-za-3-mesyatsa/>

3 Business rights commissioner. May 2022. URL: <https://www.vedomosti.ru/business/news/2021/12/07/899413-opros-pokazal-vosstanovivshih-sya-predpriyatii>.

4 FOM Voices of entrepreneurs. April 2022. URL: <https://smbiz.fom.ru/>

5 Business rights commissioner. November 2022. URL: <http://www.finmarket.ru/news/5836006>

6 FOM Voices of entrepreneurs. April 2022. URL: <https://smbiz.fom.ru/>

7 URL: <https://smbiz.fom.ru/post/otnoshenie-predprinimatelej-k-meram-podderzhki-malogo-biznesa>

FOM, confirmed the need for additional measures, of which 17% consider lower taxes, fees, payments, 14% – lower interest rates, 12% – restriction of price growth, 9% – increase in purchasing power of the households, improvement of living standards, 8% - development of domestic production, import substitution.

According to FOM,¹ in Q4 2022 compared to Q1, the number of entrepreneurs focused on survival dropped from 35% to 28%, and the number of those focused on growth moved up from 10 to 15%; the proportion of those who believe that the situation in the economy has deteriorated (from 66% to 44%) is decreasing. Sufficiency of available income to cover direct business expenses is noted by 74% of respondents at the end of 2022 (66% at the beginning of the year).

* * *

The greatest damage from the crisis of 2022 for small and medium-sized enterprises is associated with a drop in demand, rising prices and problems with supplies. According to open surveys, business assesses the crisis ambiguously, but by the end of 2022 more optimistic estimates began to occur. Many government support measures are modeled on the experience of supporting business in the Covid period (reduced administrative burden, provided tax vacations, extended concessional lending programs), and business itself was to some extent more prepared by the experience of the Covid period and the previous sanctions restrictions (use of online, stocks of goods, import of subsanctioned products, etc.). The most relevant support measures for entrepreneurs are tax cuts and increase in the loan availability coupled with an increase in government procurement. It is important to ensure that SMEs are promptly informed about the current situation in the economy, as well as about available support measures. Establishing ties with companies from friendly countries and expanding the relevant infrastructure at the border and in the ports of the Far East can be useful. As in the period of the Covid crisis, the digitalization of business and the transition to online sales have become one of the tools for enterprises to adapt to the sanctions restrictions.

3.7. Foreign trade²

3.7.1. The state of the world economy and the global trade

In late 2021 and early 2022, the global recovery from the pandemic was expected to continue in 2022 and 2023, supported by continued progress in vaccination, favorable macroeconomic policies in major economies, and financial conditions. In December 2021, the OECD projected global GDP growth of 4.5% in 2022 and 3.2% in 2023.³ National accounts data in early 2022 were broadly in line with this forecast, with business activity recovering quickly in most countries following a decline in the number of people infected with the Omicron strain.

1 FOM. Stabilizing perceptions of the business environment: optimism grows. URL: <https://smbiz.fom.ru/post/stabilizaciya-vospriyatya-biznes-sredy-optimizm-rastet>

2 Author: *Volovik N.P.*, Head of Foreign Economic Activity Department, Gaidar Institute; Senior Researcher at the World Trade Studies Department, IAES RANEPА.

3 OECD official website. URL: <https://www.oecd.org/economic-outlook/december-2021/>.

However, higher food and energy prices, supply constraints associated with the pandemic, and a rapid recovery in demand since mid-2020 have accelerated inflation in most OECD countries, especially in the United States, Latin America, and many Central and Eastern European countries.

As a result, after a rapid but uneven recovery in 2021, the global economy finds itself in the midst of multiple crises. With incomes in many major economies still below 2019 levels, growth is slowing everywhere. Cost-of-living crises are hurting most households in developed and developing countries. Damaged supply chains remain fragile in key sectors. Government budgets are under pressure from fiscal rules and highly volatile bond markets. Countries with debt problems, including more than half of low-income countries and about a third of middle-income countries are moving ever closer to default. Financial markets are turbulent as questions arise about the soundness of certain asset classes. In some countries, the economic difficulties stemming from these worsening crises are already causing social unrest that could escalate into political instability and conflict.

While the effects of the pandemic were still being felt in major economies in Q1 2022, the launch of the Russian Federation's special military operation in Ukraine has increased the level of global economic uncertainty. This conflict has exacerbated a number of problems, including rising commodity prices, which have further exacerbated global inflation. Moreover, the gradual loosening of bottlenecks in global supply chains has been compounded by the disruption of trade flows and transport logistics as a result of the conflict.

In 2022, global growth has slowed to the point where the global economy is dangerously close to slipping into recession. The main economic problem of the past year was a decade high inflation in developed economies caused by pandemic demand overstimulation and supply shocks (lockdowns, the geopolitical conflict between Russia and Ukraine, the break-up of almost 50 years of successful energy cooperation between Russia and the EU). High inflation triggered an unexpectedly rapid and synchronized tightening of monetary policy around the world in order to curb price increases, including in the largest advanced economies. While this tightening was necessary for price stability, it has contributed to a significant deterioration in global financial environment with significant effects on business activity. Given the lag between changes in monetary policy and their economic effects and the fact that real rates are expected to continue to rise, this slowdown will increase.

According to the World Bank, the global economy will grow by 2.9% in 2022.¹ Global economic growth is expected to slow to 1.7% in 2023, the third weakest pace of growth in nearly three decades, comparable only to the pandemic induced global recessions in 2020 and the global financial crisis in 2007–2009. Growth forecasts for 2023 have been downgraded for almost all advanced economies and about two-thirds of emerging and developing economies (EMDEs), and for 2024 for about half of all countries.

¹ World Bank official website. URL: <https://openknowledge.worldbank.org/bitstream/handle/10986/38030/GEP-January-2023.pdf>

The world's three main growth engines – the US, the euro area, and China – are undergoing a period of pronounced weakness with adverse secondary effects for EMDEs countries, many of which are already struggling with deteriorating domestic conditions.

In the United States, inflation reached its highest level in decades, leading to the most aggressive monetary policy tightening in more than 40 years. Activity declined in H1 2022, while domestic demand remained weak in the second half of the year, with residential real estate investment particularly weak. Overall, growth in 2022 is estimated to have slowed to 1.9%. Economic growth in 2023 is projected to slow to 0.5%, 1.9 p.p. below previous forecasts, the weakest rate outside of official recessions since 1970.

In the euro area, activity in H1 2022 exceeded expectations, resulting in revised annual growth to 3.3%. However, activity declined substantially in the second half of the year as a result of sharp increases in energy prices and supply uncertainty, exacerbated by rising borrowing costs. Inflation reached record highs. Growth in the euro area is forecast at 0% in 2023, a downward revision of 1.9 p.p. due to continued energy supply disruptions and greater than expected monetary policy tightening. Activity is projected to decline in H1 2023 and then stabilize later in the year. Inflation is expected to decline as labor markets cool and energy prices fall.

Overall, growth in advanced economies is projected to slow from 2.5% in 2022 to 0.5% in 2023.

Economic activity in China declined markedly in 2022. COVID-19-induced restrictions, unprecedented droughts, and continued stress in the real estate sector constrained consumption, production, and investment in housing. Real estate sales, housing starts, and new home prices continued to drop, and several real estate developers defaulted on their debt obligations. Fiscal support focused on infrastructure, lower interest rates and reserve requirements, and regulatory easing measures, including cash subsidies and lower down payment requirements, only partially offset these headwinds. Overall, the Chinese economy is estimated to have slowed to 2.7% growth in 2022, 1.6 p.p. below previous forecasts. With the exception of 2020, this is the weakest growth rate for the PRC economy since the mid-1970s. In 2023, growth is also expected to be below trend, around 4.3%, although higher growth rates are possible if progress is made in solving the main accumulated problems.

Despite the expected slowdown in growth, India, Indonesia, Saudi Arabia, Thailand, and Turkey may have relatively good dynamics in 2023.

On January 30, 2023, another IMF report, "World Economic Outlook: Inflation Peaking amid Low Growth,"¹ was released, which updated the short-term forecast. World economic growth, estimated at 3.4% in 2022, is projected to decelerate to 2.9% in 2023, before rising to 3.1% in 2024. Compared to the IMF's October forecast, the 2022 estimate and 2023 forecast are higher by about 0.2 p.p., which reflects the greater-than-expected resilience of many economies. Negative

1 IMF official website. URL: <https://www.imf.org/en/Publications/WEO/Issues/2023/01/31/world-economic-outlook-update-january-2023>

growth in global GDP or global GDP per capita, which often occurs during a global recession, is not expected.

Nevertheless, global growth projected for 2023 and 2024 is below the historical (2000–2019) annual average of 3.8%. The expectation of slower growth in 2023 reflects an increase in central bank rates to combat inflation (especially in advanced economies), as well as a special military operation in Ukraine. The decline in growth rates in 2023 compared to 2022 is due to the state of affairs in developed economies: the IMF expects the US economy to grow by 1.4% this year, and the euro zone by 0.7%.

In emerging and developing economies, economic growth is estimated to bottom out in 2022. In 2024, projected growth in both groups of economies reflects a gradual recovery in business activity and lower inflation. The IMF forecasts global inflation to decline from 8.8% in 2022 to 6.6% in 2023 and 4.3% in 2024, still above the pre-pandemic level (2017-2019) of about 3.5%.

The IMF expects global trade growth to decline to 2.4% in 2023, despite easing supply issues, before rising to 3.4% in 2024 (*Table 20*).

Table 20

**Growth rates of world GDP and world trade (growth rates, in%
on the previous year**

	2014	2015	2016	2017	2018	2019	2020	2021	Estimate	Forecast	
									2022	2023	2024
World GDP	3.6	3.5	3.3	3.8	3.6	2.8	-3.1	6.0	3.4	2.9	3.1
Developed economies	2.1	2.3	1.7	2.5	2.3	1.7	-4.5	5.2	2.7	1.2	1.4
USA	2.5	2.9	1.6	2.4	2.9	2.2	-3.4	5.7	2.0	1.4	1.0
Euro zone	1.4	2.1	1.9	2.5	1.9	1.3	-6.4	5.2	3.5	0.7	1.6
Germany	2.2	1.5	2.2	2.5	1.5	0.6	-4.6	2.6	1.9	0.9	1.4
France	1.0	1.0	1.1	2.3	1.7	1.5	-8.0	6.8	2.6	0.7	1.6
Great Britain	2.9	2.3	1.8	1.7	1.4	1.5	-9.4	7.4	4.1	-0.6	0.9
Emerging and developing economies	4.6	4.0	4.3	4.7	4.5	3.7	-2.0	3.7	3.9	4.0	4.2
Russia	0.6	-3.7	-0.2	1.5	2.3	1.3	-2.7	4.7	-2.2	0.3	2.1
Developing countries in Asia	6.8	6.6	6.4	6.5	6.4	5.5	-0.9	7.2	4.3	5.3	5.2
China	7.3	6.6	6.7	6.9	6.6	6.1	2.3	8.1	3.0	5.2	4.5
India	7.3	7.6	7.1	6.7	6.8	4.2	-7.3	8.7	6.8	6.1	6.8
Latin America and the Caribbean	1.3	0.0	-0.9	1.3	1.0	0.0	-6.9	6.9	3.9	1.8	2.1
Brazil	0.1	-3.8	-3.6	1.4	1.1	1.1	-3.9	4.6	3.1	1.2	1.5
Mexico	2.1	2.5	2.3	2.2	2.0	-0.3	-8.1	4.8	3.1	1.7	1.6
World trade in goods and services	3.3	2.6	2.2	5.2	3.9	0.9	-8.2	10.4	5.4	2.4	3.4

Source: IMF official website World Economic Outlook. URL: <https://www.imf.org/en/Publications/WEO/Issues/2023/01/31/world-economic-outlook-update-january-2023>

According to the WTO,¹ the global merchandise trade grew by 9.7% in 2021, following a 5.2% decline in 2020. In 2021, the trade growth was significantly higher than the average growth rate (2.7%) for 2010–2019 (the period between the global financial crisis and the beginning of the pandemic). In value terms, trade in goods showed even greater growth, rising 26% (to \$22.46 bn) in 2021 after falling 7% (to \$17.76 bn) in 2020. More significant growth in value than in volume terms is explained by the growth of export and import prices by an average of 15.4%.

Despite the start of the SWO and the subsequent sanctions imposed on the Russian Federation, as well as the ongoing quarantine in China, especially affecting Shanghai, world trade showed resilience in H1 2022. Perception has emerged that other difficulties that have hampered the movement of goods around the world since 2020 were gradually easing: freight rates began to decline in Q4 2021 and disruptions in international supply chains and logistics decreased after they peaked in late 2021.

According to the latest Global Trade Report, released by UNCTAD² on December 13, 2022, global trade hit a record \$32 trillion last year, but the slowdown that began in the second half of last year is expected to worsen in 2023 as geopolitical tensions and tight financial conditions continue. Despite the SWO in Ukraine and the lingering effects of the pandemic, trade in both goods and services grew strongly in 2022. Trade in goods increased 10% from the previous year to an estimated \$25 trillion, due in part to higher energy prices. Trade in services rose 15% to a record \$7 trillion.

But according to UNCTAD, slowing growth in H2 2022 points to expectations of tighter conditions in 2023. Forecasts of economic growth for 2023 are being revised downward due to high energy prices, rising interest rates, persistent inflation in many economies, and the negative global economic impact of the special military operation in Ukraine. Continued tightening of financial conditions is expected to further increase pressure on highly indebted governments, increasing vulnerabilities and negatively impacting investment and international trade flows.

Despite the slowdown in the growth of the value of world trade, the physical volume of trade continued to grow during 2022, indicating the sustainability of global demand. Part of the decline in the value of international trade in H2 2022 is due to the drop in commodity prices.

Uncertainty about supply chain formation remains high. Mitigation strategies, including supplier diversification, reorientation, close and friendly cooperation, will have an impact on global trade patterns this year.

According to the WTO Merchandise Trade Barometer released March 1, 2023,³ global merchandise trade growth lost momentum in Q4 2022 and is likely to remain weak in Q1 2023. The current Barometer value continues to point to

1 WTO official website. World Trade Statistical Review 2022. URL: https://www.wto.org/english/res_e/booksp_e/wtsr_2022_e.pdf

2 UNCTAD official website. URL: <https://unctad.org/news/global-trade-set-hit-record-32-trillion-2022-outlook-increasingly-gloomy-2023>

3 WTO official website. URL: https://www.wto.org/english/news_e/news23_e/wtoi_01mar23_e.htm

weakening trade growth in physical terms - it is now 92.2 points on a 100-point scale, down from 96.2 points in November of last year. All constituent Barometer indexes fell below trend except for the auto index (105.8), which was supported by stronger sales and production numbers in the U.S., Europe and Japan than the decline in those numbers in China. The export orders index (97.4) remains below trend but is rising, giving hope for a possible rise in the near future. Meanwhile, the indexes for shipping containers (89.3), air freight (87.8), electronics trade (84.9) and commodities (92.0) remain below trend and continue to decline, suggesting that the weakening trade is broad-based and affects many sectors.

3.7.2. Terms of Russian foreign trade: price trend for the main goods of Russian exports and imports

In 2022, the World Bank's energy price index was 154.6%, up 64.7% from 2021. All components of the index (coal, crude oil, natural gas) saw price increases.

Following a steady growth in H1 2022, in June the price of crude oil hit its maximum value since April 2012 (Brent – \$120.08/bbl, WTI – \$114.59/bbl), after which oil started to fall in price. In September 2022, prices were on average 25% lower than their June highs. The fall in prices reflects a combination of factors: the slowdown in global growth and growing fears of an impending global recession, continued restrictions due to COVID-19 in China and significant release of crude oil from the strategic reserves of some countries. Oil prices recovered partially in October (Brent to \$93/bbl and WTI to \$87.26/bbl) as OPEC+ members agreed to cut production by 2 mn bpd.

Concerns about the global economy slowdown amid tightening financial conditions, exacerbated by ambiguous signals from China's COVID-19 policy, continued to put pressure on crude oil prices, which reached their lowest level in a year in December. Nevertheless, prices in December 2022 exceeded the prices formed in December 2021. Thus, the Brent oil rose in a year by 8.9%, WTI – by 7%.

A barrel of Urals crude oil in December 2022 was worth \$50.47, which is 30.6% lower than in December 2021 (\$72.71/bbl). At the end of 2022, the average Urals crude oil price was \$76.09/bbl. In 2021, the average price of Urals oil was at the level of \$69/bbl. Thus, in 2022, the average annual oil price for the year increased markedly – by 10.3%.

Natural gas prices were volatile throughout the year. After reaching record highs in Q3 2022, prices began to decline. While the natural gas market is becoming increasingly global, there remain significant regional price differences due to different supply dynamics. European natural gas reached a record high of \$70/MMBTU in August 2022 as some European countries sought to rebuild their storage capacity and offset declining gas supplies from Russia. EU storage was over 90% full at the beginning of October, pushing prices down to \$45/MMBTU, and consumers reduced consumption in response to higher prices and warmer-than-normal weather. Contract prices in Japan rose to a record high of \$23.73/MMBTU in September, well below European prices. Natural gas prices in the United States rose to \$8.8/MMBTU in August the highest level since 2008, due

to strong domestic demand and record LNG exports, but fell to \$5.28/MMBTU in November.

Natural gas markets have been largely driven by developments in Europe, leading to major changes in trade patterns. Pipeline exports of natural gas from Russia to Europe plummeted, leading Europe to turn to the LNG market as its main alternative (as well as some additional pipeline flows from the North Sea and North Africa).

Overall, for 2022, natural gas prices in Europe surged 2.9 times compared to 2021, in the United States by 66.9%, and in Japan by 78.1%.

Coal prices held high throughout 2022. After reaching a record high of \$330/t in July, prices began to decline. Coal markets were greatly influenced by high natural gas prices, which prompted many countries to switch from natural gas to coal in power generation, a marked turnaround from the trend toward decommissioning of coal-fired power plants. In 2022, Australian coal prices were, on average, 2.5 times higher than in 2021; South African coal prices were 2.4 times higher.

The European Union's August 2022 ban on Russian coal imports altered trade flows, with Europe importing more coal from Colombia, South Africa, the United States and even Australia. Meanwhile, Russia diverted cargoes that would normally go to the European Union to other countries, including India and Turkey. These diversions resulted in significantly longer transport distances and thus higher transportation costs because coal is bulky and expensive to transport.

The WB price index for non-energy commodities in 2022 was 10.6% higher than in 2021. Among the four major components of this index, there was an increase in prices for agricultural products and fertilizers – by 13.3% and 62.6%, respectively, while metals and precious metals fell in price by 1.2% and 2.4%, respectively (Fig. 24).

The World Bank's metals and minerals price index for Q3 2022 took steep dive by 20% from the previous quarter and was 31% below its March peak in September.

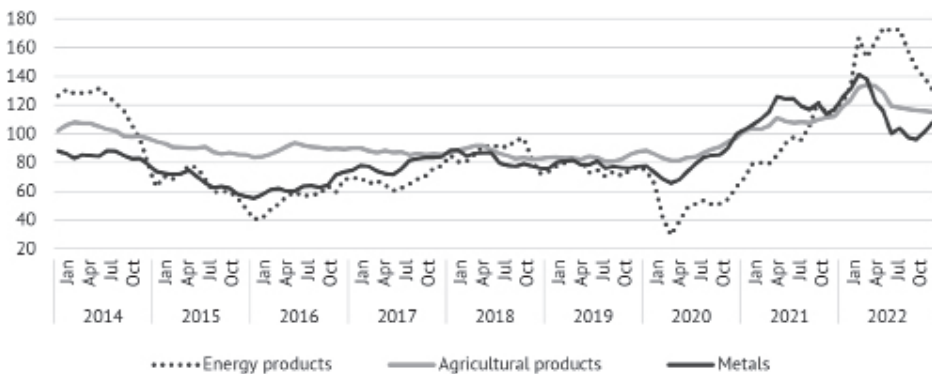


Fig. 24. World Bank commodities price indexes (2010 = 100%)

Source: URL: <http://www.worldbank.org/en/research/commodity-markets#1>

The decline primarily reflected deteriorating global economic activity and fears of a possible global recession. Global demand for industrial metals continued to weaken following the post-pandemic surge, while in China, the world's largest metals consumer, demand remained weak due to COVID-19-related restrictions and stress in the real estate sector.

Over the past three years, there have been significant fluctuations in aluminum and copper prices. The COVID-19 pandemic caused a severe global recession, and in the three months since January 2020, global aluminum and copper prices have fallen to a record low. This episode was followed by the strongest economic recovery and price spike in eight decades. By March 2022, inflation-adjusted prices for copper and aluminum reached their highest level in 10 years: aluminum rose to \$3,498.37/t, copper to \$10,230.89/t. It should be noted that in November the prices of aluminum and copper fell back from the highs by 32.8 and 21.3% respectively. Overall for 2022, aluminum was 9.4% more expensive than in 2021, while copper was 5.3% cheaper.

Nickel prices fell 24% in Q3 2022 and in September were a third below their unprecedented highs in March (\$33,924.18/t). Lower demand from the stainless steel sector and strong production growth in Indonesia contributed to the drop in prices. Production of stainless steel, which accounts for more than two-thirds of refined nickel consumption, slowed markedly after a surge in 2021 due to weak demand for consumer durables, high energy prices and electricity shortages. The use of nickel in batteries also slowed, especially in China. However, nickel supplies have increased significantly, especially from Indonesia, which is rapidly expanding nickel pig iron production to produce nickel for both stainless steel and battery use. Nickel was 39.9% more expensive in 2022 than in 2021 (*Table 21*).

Table 21

Average annual world prices

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Crude oil (Brent), USD/bbl.	111.97	108.86	98.94	52.37	44.05	54.39	71.07	64.03	42.3	70.44	99.82
Natural gas (USA), USD/MMBTU	2.75	3.72	4.37	2.61	2.49	2.96	3.16	2.57	2.01	3.85	6.37
Natural gas, European market USD/MMBTU	11.47	11.79	10.05	6.82	4.56	5.72	7.68	4.80	3.24	16.12	40.34
Natural gas (Japan), USD/MMBTU	16.55	15.96	16.04	10.93	7.37	8.61	10.67	10.56	8.31	10.76	18.43
Coal (Australia), USA/t	96.36	84.56	70.13	58.94	66.12	88.52	107.02	77.86	60.79	138.05	344.9

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Copper, USD/t	7962	7332.1	6863.4	5510.5	4867.9	6169.9	6529.8	6010.2	6173.8	9317.1	8822.4
Aluminum, USD/t	2023.3	1846.7	1867.4	1664.7	1604.2	1967.7	2108.5	1794.5	1704	2472.8	2705
Nickel, USD/t	17557	15032	16893	11863	9595.2	10409	13114	13914	13787	18465	25834
Iron ore, USD/t	128.50	135.36	96.95	55.85	58.42	71.76	69.75	93.85	108.9	161.71	121.3

Source: Calculated on WB data

Agricultural products began to rise in price in 2020. In Q1 2021, the WB price index for agricultural products rose more than 9% on Q4 2020, building on the momentum of the previous quarter. For 2021, prices soared by 20% and were close to a seven-year high. The price increases were driven by supply shortages in some food commodities, especially corn and soybeans, strong demand for forage commodities from China, and the depreciation of the dollar. Cereals rose the most because of production shortfalls, followed by oils and meal. Beverage prices rose modestly, while agricultural commodity prices remained generally stable as supply disruptions due to the pandemic were resolved.

Food prices continued to rise in early 2022, reaching an all-time high in April with the WB Agricultural Price Index came to 134.07%.

Larger-than-expected global supplies of food and oilseeds, a UN-brokered agreement that allowed Ukrainian grain to enter global markets, and a worsening global growth outlook contributed to a decline in agricultural commodity prices. As a result, the price index decreased by 11% in Q3 2022 relative to Q2 2022. Wheat prices fell nearly 20% from the previous quarter (while remaining 24% higher than a year ago), corn prices dropped 10%; rice prices generally remained stable. The price index for edible oils and meals fell 18% in Q3 2022. Beverage prices for the group as a whole have remained fairly stable over the past three quarters, with moderate increases in tea and coffee prices offset by declines in cocoa prices. Agricultural commodity prices declined nearly 11% over Q3 2022 following increases in cotton and natural rubber supplies.

At the end of 2022, the average value of the FAO Food Price Index (FPI) was 143.7 points – 18 points higher than in 2021. Thus, the cost of cereals reached a new high, beating the 2011 figures. Average wheat prices were 15.6% higher than in 2021, while corn prices were 24.8% higher. The FAO attributed the rise in cereal prices to “significant market disruption, increased uncertainty, higher energy and input prices, adverse weather conditions in some major supplying countries, and strong demand.” Average prices of vegetable oils, milk, meat at the end of 2022 were the highest in the history of FAO observations (since 1990), sugar prices – the highest since 2012.

The World Bank Fertilizer Price Index jumped 24% in Q1 2021 relative to Q4 2020, driven by higher phosphate and carbamide prices due to strong demand and higher raw material costs. Potash prices remained broadly unchanged, with ample supply. Prices continued to rise until April 2022, when the fertilizer price index reached its highest level since August 2008 at 254.97%, after which prices began

to decline. In Q3 2022, the WB Fertilizer Price Index dropped nearly 8% from Q2 2022, while still remaining at historically high levels. The recent price decline reflects lower demand as farmers reduce fertilizer applications in the fields due to affordability issues. Overall, the WB fertilizer price index is up 62.6% for 2022 compared to 2021.

After reaching year-end highs in March 2022, precious metal prices began to decline. The World Bank Precious Metals Price Index fell 9% in Q3 2022 from the previous quarter, driven by weak investment and physical demand due to a stronger dollar, as well as higher yields due to rising interest rates. These factors outweighed the impact of increased demand for safe-haven assets related to the SMO in Ukraine and rising inflation. Silver prices were down 15% amid lower industrial demand, while gold and platinum dropped 8%. For the year as a whole, platinum fell by 11.9% and silver by 13.4%. The price of gold remained at the level of 2021.

According to the World Bank's forecast,¹ Brent crude oil prices will average \$92/bbl in 2023 and then decline to \$80/bbl in 2024. Despite the expected weakening, prices will remain well above their recent five-year average of \$60/bbl. The forecast envisages a worsening macroeconomic prospects, offset by increased natural gas consumption in favor of oil and lower production among OPEC+ countries (including Russia). The outlook is highly uncertain, and the continuation of increased price volatility with further spikes in the short term is likely due to low levels of spare capacity and reserves, the European Union ban on Russian oil imports and potential price caps, and ongoing geopolitical events.

Natural gas and coal prices are projected by the WB to decline in 2023 and 2024, but remain at much higher levels against the 2017–2021 average. By 2024, U.S. prices for Australian coal and natural gas are still expected to be twice as high as the past five-year average, while European natural gas prices could be 4 times higher. The expected price decline in 2024 is due to lower demand for natural gas as households and industries reduce their consumption and switch to substitutes, while coal production is expected to increase significantly as China, India and major coal exporters ramp up production. Giving up natural gas could jeopardize climate change goals, given that alternative fossil fuels have higher carbon dioxide emissions.

The outlook for natural gas supplies will depend on the severity of Europe's winter and the ability of consumers to reduce their demand. While current expectations are for a mild winter, a worse-than-expected outcome could still result in very low inventory levels by the end of the winter. Policy coordination among key importers will be vital to ensure a fair burden of high energy prices or supply disruptions. The European Union has announced several policies to address these issues, including joint gas purchases and a focus on reducing demand. Natural gas price controls have also been discussed, but this must be balanced with ensuring sufficient supply.

1 WB official website. Commodity Markets Outlook. October 2022. URL: <https://openknowledge.worldbank.org/bitstream/handle/10986/38160/CMO-October-2022.pdf>

With declining imports of Russian gas, Europe will face further problems in replenishing supplies. The International Energy Agency (IEA) forecasts¹ that European LNG imports will increase by 60 bcm in 2023, helped by new import terminals, including floating terminals. However, this increase is more than double the expected increase in global LNG export capacity, which will put upward pressure on prices as Europe competes with other markets, and the disruptions seen this year at some LNG importers could continue through 2023. One additional risk to natural gas exports is the potential damage to critical infrastructure from explosions at Nord Stream 1 and Nord Stream 2 pipelines in September. Future growth in natural gas consumption may also be weaker than expected, as high price volatility and lack of access to LNG may prompt some countries to reconsider its role as a reliable fuel. Partly reflecting this, the IEA cut its forecast for natural gas consumption growth by half over the next five years.

The WB forecasts that metal prices will fall by 15% in 2023 after a slight decline in 2022. Risks to the outlook are skewed to the downside and include a global recession as well as prolonged lock-ins and further deterioration of the real estate sector in China. Risks to higher prices include the possibility of further closures of energy-intensive smelters if energy prices rise more than expected. Aluminum and zinc are particularly vulnerable to fluctuations in energy prices because they are the most energy-intensive metals to process.

After rising in 2022, aluminum prices are expected to decline by 11% in 2023. Risks to the outlook include lower production due to electricity rationing, especially in Europe. On the policy side, the U.S. has announced its intention to impose additional sanctions on Russian aluminum exports, which could lead to higher prices. In the longer term, the energy transition could increase the use of aluminum, especially in electric cars, solar panels and long-distance power lines.

According to the World Bank, copper prices will fall another 16% in 2023 after slumping in 2022. In the long term, copper would benefit from increased production of electric vehicles (which consume 2.5–4 times more copper than gasoline-powered cars), renewable energy production (more copper-intensive than conventional power plants), and wiring for associated grid infrastructure and recharging.

Nickel prices, after rising in 2022, are projected by the WB to fall by 16% in 2023. The long-term risk is that demand for nickel, and subsequent prices, could decline as non-nickel alternatives for batteries, such as lithium-iron-phosphate (LFP), which increasingly dominate the electric vehicle market in China, are developed. Other battery makers are also exploring LFP or other technologies such as sodium-ion.

After rising in 2022, agricultural commodity prices are expected to fall by nearly 5% in 2023 before stabilizing in 2024 as supplies of most food commodities increase owing to higher yields. Despite the expected decline, most prices will remain at historically high levels.

1 IEA official website. World Energy Outlook. URL: <https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf>

There are many risks to the price outlook for agricultural commodities. They include the likelihood of higher-than-expected commodity prices or energy supply disruptions, adverse weather conditions (including an intensification of La Niña for the third consecutive year), and restrictive trade policies.

After a significant increase in 2022, the fertilizer price index is projected to fall by 12% in 2023 as supply disruptions gradually subside. Upside risks to the outlook include higher raw material costs, additional sanctions against Belarus and Russia, and expanded export restrictions from China.

Because of expectations of historically high interest rates and concerns about the possibility of a global recession affecting industrial activity, the WB forecasts that the precious metals price index will fall another 4% in 2023 after falling in 2022.

3.7.3. Main indicators of the Russian foreign trade

According to the Central Bank of Russia,¹ in 2022, the foreign trade turnover of the Russian Federation amounted to \$973.9 bn, which is 4.7% higher than in 2021. The foreign trade balance amounted to \$282.3 bn which is 66% higher than in 2021.

While the physical volumes of goods exported abroad decreased due to the growth in prices for energy carriers, the value volumes of export increased considerably. In 2022, export of goods and services from Russia amounted to \$628.1 bn, thus exceeding the relevant index of the preceding year by 14.2% (\$550.0 bn in 2021). It is worth noting, the negative dynamics of the increase in the value of exports of goods and services during the year: while in Q1 2022 as compared to Q1 2021 it increased by 60.5%, in Q2 – by 27.6%, in Q3 – by only 4%, and in Q4 it dropped by 15.4%. This was due to a decrease in the annual growth rate of world prices for many commodities. In addition, the physical volume of energy exports declined, mainly due to the stoppage of gas transportation via Nord Stream 1 and Nord Stream 2 pipelines, as well as due to the growing effect of restrictions imposed by unfriendly states on the supply of Russian goods to the world market.

Russia's imports of goods and services in 2022 stood at \$345.8 bn, down by 9.0% from \$379.9 bn in 2021. After a 23.4% decline in imports in Q2 2022 compared to Q2 2021, the situation has stabilized since mid-July. In Q3 the decrease slowed down to 12.5%, and in Q4 – to 9.1%. The improvement of the dynamics of imports was promoted by the formation of new logistic routes and expansion of the list of goods allowed for parallel imports from August. By weight of goods, there is a stable growth of 18% per month on average, by their statistical value – by 20%. Thus, in August 383,000 tons of various goods were imported via parallel import and since the beginning of this regime – more than 1.3 mn tons. The ruble's appreciation also contributed to the increase in imports.

In 2022, current account surplus of the balance of payments of the Russian Federation amounted to \$227.4 bn, which is by 85.9% higher than in 2021 (\$122.3 bn). A record-breaking increase in the surplus of the balance of goods and

1 CBR official website. URL: <https://cbr.ru/statistics/?CF.Search=&CF.TagId=183&CF.Date.Time=Any&CF.Date.DateFrom=&CF.Date.DateTo=>

services as a result of growth in the value of export of goods due to favorable price situation with a decrease in the value of imports played a decisive role in expansion of the surplus of the current account of the balance of payments.

Russia's foreign trade surplus in goods and services soared by 66% to \$282.3 bn in 2022 from \$170.1 bn in 2021.

Thus, in 2022, due to changes in the geography of supplies and high world prices for energy resources, Russian exports managed to significantly exceed the 2021 volume. By the end of 2022, the volume of imported goods slowed down owing to the reorientation of the supplier market to other countries and the expansion of the list of goods of parallel imports.

On March 13, 2023, the Federal Customs Service of Russia partially resumed publication of customs foreign trade statistics. According to the FCS, Russia's foreign trade turnover in goods in 2022 stood at \$850.5 bn, an increase of 8.1% compared to 2021. Exports for 2022 amounted to \$591.46 bn, which was 19.9% higher than in 2021. Imports for the previous year amounted to \$259.083 bn, which was 11.7% lower than in 2021 (Fig. 25). Thus, last year's trade surplus reached a record \$332.377 bn.

The value of export of mineral products in 2022 exceeded the level of 2021 by 40.8%, foodstuffs and agricultural raw materials – by 14.8%, chemical products – by 10.9%, textiles, textile products and footwear – by 8.5%, metals and their products – by 2.3%. The value of exports of wood and paper products decreased by 16.7%, precious metals – by 41.4%, machinery, equipment and transport vehicles – by 20.5% (Fig. 26).

In 2022, there was a decline in the value of imports across almost the entire expanded commodity classification. Thus, import of mineral products dropped by 6%, timber and pulp and paper products – by 6.9%, textiles, textile products and footwear – by 7.3%, metals and metal products – by 10.2%, machinery, equipment and transport vehicles – by 18.4% (Fig. 27).

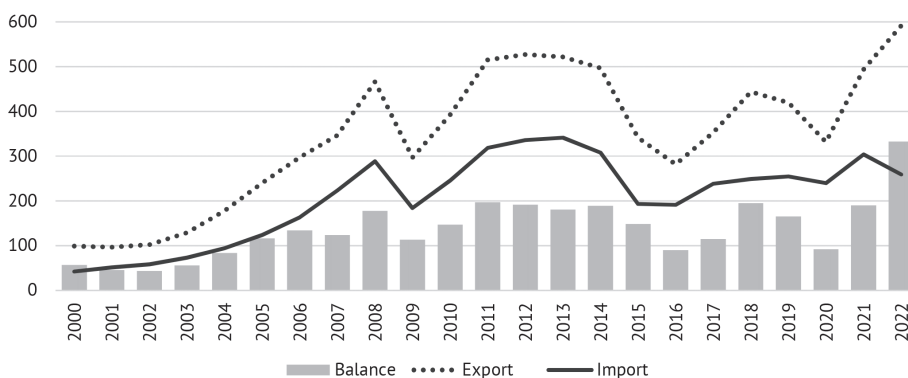


Fig. 25. Main indicators of Russian foreign trade in goods, USD bn

Sources: RCB official website, FCS of Russia.

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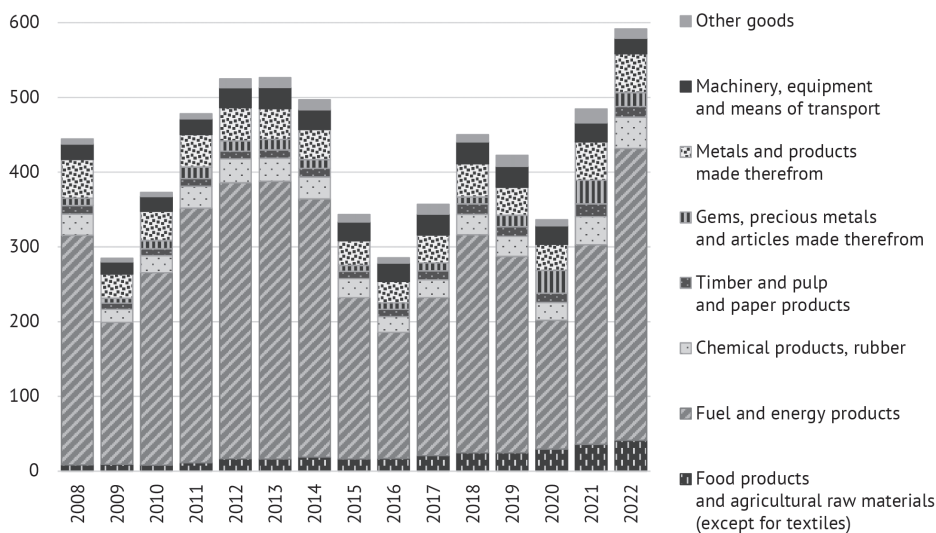


Fig. 26. Goods-wise dynamic of Russian exports, USD bn

Source: FCS.

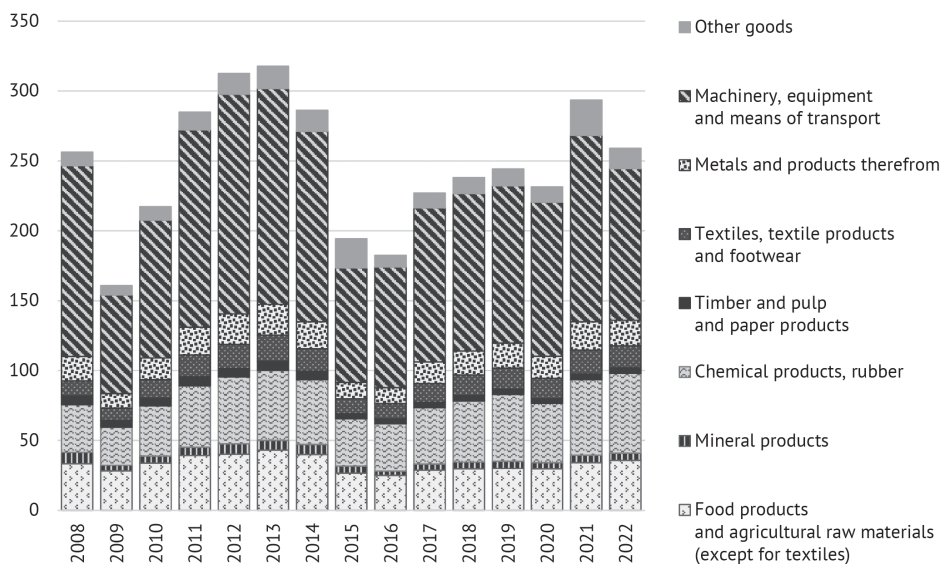


Fig. 27. Goods-wise dynamic of Russian imports, USD bn

Source: FCS.

3.7.4. Regional pattern of Russian foreign trade

Sanctions imposed by unfriendly states have dealt a heavy blow to logistics and foreign trade of the Russian Federation. Ten years ago, the EU countries accounted for 54% of Russian foreign trade. After the imposition of sanctions in 2014, this share gradually contracted and reached 35.9% in 2021.

EU trade with Russia suffered even more after the start of SMO, when the EU imposed restrictions on imports and exports of certain goods. The effect of these measures was especially noticeable in the last months of last year. On a seasonally adjusted basis, both exports and imports fell well below pre-SMO levels. Between February 2022 and December 2022, the value of Russian supplies to the EU slumped by 51%, and Russia's share of EU imports fell from 9.5% to 4.3%. Over the same period, Russia's share of total EU exports fell from 4.0% to 2.0%.¹

The EU trade deficit with Russia peaked at €18.2 bn in March 2022 and then gradually declined to €6.0 bn in December 2022. The value of Russian exports plummeted by 53%: from €21.8 bn in March 2022 to €10.3 bn in December 2022.

As other trading partners gradually replaced Russia, Russia's share of EU imports of key commodities declined with the most significant declines being seen in coal, natural gas, fertilizers, petroleum products, and ferrous metallurgy. In particular, the biggest nosedive was recorded for Russian coal, the share of which fell from 45% in 2021 to 22% in 2022, natural gas (from 36% to 21%), fertilizers (from 29% to 22%), heating oil (from 28% to 21%) and ferrous metallurgy products (from 16 to 10%).

Nevertheless, the trade turnover between Russia and the EU in 2022 reached a maximum for 8 years, having increased by 2.3% to €258.6 bn. The EU's trade deficit with Russia reached a record €148.2 bn, twice as high as in 2021.

Supplies of goods from Russia to the EU in 2022 increased by 25% and reached €203.4 bn (€230 mn less than the historical maximum of 2012). Imports of mineral products increased by 41%, nickel and its products by 45.1%, aluminum and its products by 22.1%, copper and its products by 8.8%, other non-precious metals by 90.1%, fertilizers by 45.1%, oilseeds and fruits by 14.9%. At the same time, the volume of supplies of ferrous metals to the EU decreased due to the EU ban on imports of steel and iron products from Russia. Imports of alloyed steel to the EU from Russia almost ceased in May. Volume of supplies of timber and timber products dropped significantly in the context of EU restrictions and Russia's ban on exports of timber to a number of countries.

Imports of goods from the EU into Russia fell by 38.1% to €55.2 bn, the lowest since 2005. The contraction in imports of European goods into Russia made the largest contribution to the reduction of Russian imports. According to the International Trade Centre² (ITC), imports of means of land transport, except for railway or tramway rolling stock and their parts and accessories into Russian territory from the EU declined for 11 months of 2022 as compared to the same period of 2021 by 75.7%, nuclear reactors, boilers, equipment and mechanical

1 Eurostat official website. URL: <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/w/ddn-20230303-1>

2 Trade Map – Bilateral trade between European Union (EU 27) and Russian Federation.

devices – by 53.4%, electrical machinery and equipment – by 64.3%, optical instruments and apparatus – by 31.3%, plastics and articles thereof – by 43.4%, alcoholic and non-alcoholic beverages – by 13.3%.

The People's Republic of China is the Russian Federation's largest trading partner. In 2021, the trade turnover between the countries soared by 30% and reached the mark of \$145 bn. In 2022, according to Chinese customs data, the trade turnover hit a record point of \$190.27 bn, which was 29.3% higher than the same indicator of the previous year. Chinese exports of goods to Russia rose 12.8%, to \$76.1 bn and imports from Russia rose 43.4% to \$114.1 bn. Both countries want to reach the goal of \$200 bn by 2024.

Russia has more than doubled its LNG exports to China in 2022 as part of the drive to diversify its energy imports. According to Gazprom, Russia's largest gas producer, Russian natural gas imports to China via the Power of Siberia pipeline surged by at least 50 percent in 2022. Russia's crude oil imports to China rose by 10% year on year in the first 11 months to nearly 80 mn tons.

China accounts for about 20% of Russia's trade turnover. In 2022, this share went up markedly due to the reduction in trade relations with Western countries.

According to OPEC forecasts, by 2030, two countries, China and India, will account for a quarter of global oil demand. Consequently, these countries will continue to increase their energy purchases from the Russian Federation. Given this and the growth of parallel imports in Russia, we should expect a further increase in Russian trade with China.

If we compare April-November 2022, when sanctions and restrictions began to take full effect, with the same period in 2021, we can note the complete collapse of Russian trade with the United States and Great Britain. Imports to Russia from the United States collapsed sevenfold, and from Great Britain fivefold (in fact, all financial, investment, and trade transactions with these countries were terminated).

As a result, India entered the top 10 of Russia's largest trading partners, replacing the United States. In 2022, the foreign trade turnover between Russia and India increased rapidly, exceeding the same indicator in 2021 by 3.7 times. The growth in trade turnover was due to a significant increase in the supply of Russian goods to India, while the supply of Indian goods to Russia declined. According to India's Ministry of Commerce and Industry,¹ India's imports of goods from Russia went up 4.8 times in 2022, as compared with 2021, while India's exports of goods to Russia dropped by 12%. The main factor behind India's import growth is a sharp increase in Russian oil supplies. According to Vortexa, Russia became India's largest oil supplier in October 2022, overtaking the traditional leaders Saudi Arabia and Iraq. In October, Russia supplied India with 946,000 bpd, or 22% of India's total crude oil imports. Iraq accounted for 20.5% and Saudi Arabia for 16%.

As a result, India's negative trade balance went up 7.5 times in 2022 compared with the previous year. Indian authorities intend to increase their exports to Russia to almost \$10 bn in the coming months. However, some Indian companies

1 Ministry of Commerce and Industry of India official website. URL: <https://tradestat.commerce.gov.in/meidb/default.asp>

are wary of exporting to Russia because of possible sanctions from the West, lack of clarity on payments and problems with insurance.

In a difficult geopolitical environment, the development of trade relations between Russia and Turkey gets a special impetus. In 2021, trade turnover between these countries amounted to \$34.7 bn, i.e. reached a fairly high level if compared to previous years. Especially compared to 2016 and 2017, when trade turnover dropped significantly during the cooling of relations between our countries. During that period, it fell to less than \$25 bn. In 2022, the foreign trade turnover between the countries almost doubled (up to \$68.2 bn) compared to 2021. Import of Russian goods into Turkey more than doubled – from \$28.96 bn to \$58.86 bn, import of Turkish goods into Russia soared by 62% – from \$5.77 bn to \$9.35 bn.

There are several reasons why Turkey is currently one of the most favorable partners for Russia. Firstly, Turkey does not support anti-Russian sanctions. Secondly, this country is a convenient partner in terms of logistics.

Thirdly, Turkey is ready to replace brands, which have left the Russian market. A promising area is Turkish fast food, which is now actively aiming at Russia. The Turkish brands LK burger and LK pizza, Arabica Coffee House, the Turkish chain Gagawa, specializing in chicken meat dishes and others are seriously considering the possibility of developing their chains in Russia.

Turkish textile and clothing brands are also taking a close look at the Russian market. In Turkey there is an association called the Union of United Brands, which comprises 554 Turkish brands, of which only 32 are represented in Russia, i.e. less than 6%.

Fourthly, the development of Turkish production on Russian territory is promising. Representatives of this sphere of business understand that they can now occupy a good niche: since supplies between Russia and many Western countries are disrupted, it is possible to localize production here. Especially since Turkey currently has a high inflation rate: the lira is falling, and, of course, in this environment a large Russian market with a lower inflation rate than in Turkey is attractive (in 2021, 28.7%).

Another promising area of cooperation is the increase in export flows of Russian goods to Turkey. Today, Turkish B2B-marketplace TurkishExporter, which is the largest electronic trading platform in Turkey (more than 2 million users, 180 thousand companies, annual traffic of 7.3 million visits) offers Russian companies extensive opportunities and mechanisms for quick selection of partner, distributor or buyer of Russian products with a view to the Turkish and nearby markets. The platform was originally created to raise export sales of Turkish companies, but today this trading platform is being developed as an opportunity for companies from all over the world to find a relevant partner in a number of markets, including Turkey.

Traditionally, enhanced cooperation between the countries in the construction market continues. This includes both the direct activity of Turkish companies as contractors and the supply of construction materials. In 2021, Turkish construction companies implemented projects worth around \$85 bn in Russia. Turkey is likely

to intensify its activity in this area. Turkey will also play an increasing role in the supply of household appliances, paper products and household chemicals.

Russia remains a leading exporter not only of energy, but also of other goods, from fertilizers and asbestos and from nuclear reactors to wheat. International automakers still depend on palladium and rhodium from Russia to produce catalytic converters. French nuclear power plants depend on Russian uranium, and Belgium cannot give up its diamond trade with Russia. Therefore, many countries have not only failed to give up trade with Russia, but have also increased their foreign trade turnover (*Table 22*).

Table 22

Main changes in regional pattern of Russian foreign trade

	Change in the average monthly volume of Russian foreign trade after the start of the SMO compared to the average for the previous 5 years, %
India	410
Turkey	298
Brazil	206
Belgium	181
PRC	164
Spain	157
Netherlands	132
Japan	113
Germany	97
South Korea	83
USA	65
Sweden	24
Great Britain	21

Source: The New York Times. Russian Trade Boomed After Invading Ukraine, Providing Ample War Funds. URL: <https://www.nytimes.com/interactive/2022/10/30/business/economy/russia-trade-ukraine-war.html>

3.7.5. Regulation of Russian foreign trade¹

In the context of growing geopolitical and economic tensions, Russian foreign trade has got into dire straits. Many production and logistics chains related to export-import and financial transactions, as well as interaction with foreign companies that have announced winding up of their activities in Russia, have been disrupted. Business is looking for new opportunities, and the task of the Russian government is to take support measures to adapt to the new environment in these conditions.

Tariff regulation

Export customs duties

In 2022, the rates of export duties on crude oil and petroleum products were calculated in accordance with the methodology approved by Resolution No. 276

¹ Materials from the information and legal portal GARANT.RU were used to prepare this section.

of the Government of the Russian Federation of March 29, 2013 “On calculation of the rates of export customs duties on crude oil and certain categories of goods derived from oil” (Table 23).

Table 23

**Export duty rates on crude oil and petroleum products
in 2020–2021, USD/t**

	Crude oil	Petroleum products	
		Light oil products	Dark oil products
2021			
January 1	38.7	11.6	38.7
February 1	43.8	13.1	43.8
March 1	49.6	14.8	49.6
April 1	57.6	17.2	57.6
May 1	54.9	16.4	54.9
June 1	58.8	17.6	58.8
July 1	61.5	18.4	61.5
August 1	67.8	20.3	67.8
September 1	64.6	19.3	64.6
October 1	62.8	18.8	62.8
November 1	71.2	21.3	71.2
December 1	77.5	23.2	77.5
2022			
January 1	46.7	14.0	46.7
February 1	47.7	14.3	47.7
March 1	58.3	17.4	58.3
April 1	61.2	18.3	61.2
May 1	49.6	14.8	49.6
June 1	44.8	13.4	44.8
July 1	55.2	16.5	55.2
August 1	53.0	15.9	53.0
September 1	52.0	15.6	52.0
October 1	44.4	13.3	44.4
November 1	42.7	12.8	42.7
December 1	43.3	12.9	43.3

Sources: RF Government Decree, information of the RF Ministry of Economic Development.

The Decree of the RF Government of March 31, 2022 No. 532 has established that the rate of the export duty on sunflower meal exported from the Russian Federation outside the territory of the EAEU is calculated in accordance with the established Statute on the calculation and application of the rate. The Regulation determines the formula for calculating the export duty on sunflower meal. The rate of the export duty is calculated by the Ministry of Agriculture of the Russian Federation. The Regulation entered into force on May 1, 2022 and was in force up to August 31, 2022.

The Decree of the Government of the Russian Federation of March 31, 2022 No. 531 has introduced changes to the Decree of the Government of the Russian Federation of November 27, 2021 No. 2068 “On rates of export customs duties on goods exported from the Russian Federation outside the customs territory of the EAEU” in respect of other flax seeds. For the period from May 1 through August 31, 2022 a temporary combined export duty rate of 20% but not less than \$100 per 1,000 kg was set.

Decree of the RF Government No. 2188 of November 30, 2022 has amended Decree of the RF Government No. 2068 of November 27, 2021 “On rates of export customs duties on goods exported from the Russian Federation outside the customs territory of the EAEU”. According to the amendments, temporary zero rates of the export customs duty are set for mineral fertilizers, goods of the given group in pills or in similar forms, or in packages with the gross weight not exceeding 10 kg. The tariff will be valid up to December 31, 2023 provided that the customs value per ton of these types of fertilizers when exported outside the EAEU does not exceed the amount equivalent to \$450. If the said level of customs value is exceeded, the export customs value rate is applied at the rate of 23.5% of the difference between the customs value and \$450. The Resolution entered into force on January 1, 2023.

Import customs duties

Decision of the EEC Council of March 17, 2022 No. 37 amended the decision of the Customs Union Commission of November 27, 2009 No. 130 “On the common customs-tariff regulation of the EAEU” in terms of the establishment of tariff benefits for the payment of import customs duties on several goods within the counter-sanctions.

The lists of goods which are subject to exemption from payment of import customs duty up to September 30, 2022 when they are placed under the procedure of release for domestic consumption were established. These are food products and goods used in their production; goods used for the production and sale of food products; goods used for the production of pharmaceutical products; goods used for the production of electronic products; goods used for the development of digital technology; goods used for the production of light industry products; goods used for the production of metallurgical products; goods used in the construction industry, as well as goods used in the transportation sector.

The tariff concession is granted subject to the submission to the customs authority of the EAEU member state of confirmation of the intended use of the imported goods issued by the authorized body of the member state and containing information on the classification, quantity, value of such goods, as well as on the organizations that are importing. The decision entered into force on March 28, 2022.

Decision of the EEC Council of April 05, 2022 No. 46 and Decision of the EEC Board of April 12, 2022 No. 63 introduced an additional list of goods for which temporary zero rates of import duties and tariff benefits (more than 900 items). The decisions entered into force on April 25, 2022.

Decision of the EEC Board No. 25 of February 15, 2022 sets a zero rate of import customs duties on certain types of wood pulp semi-bleached or bleached of deciduous species from June 1, 2022 up to May 31, 2023.

Decision of the EEC Council No. 34 from March 17, 2022 a zero rate of import customs duty is established for a period up to April 30, 2023 for apricot puree, pear puree and peach puree. The temporary zero rate of import customs duty will be applied to aniline and its salts, fabrics from synthetic fibers up to April 30, 2025.

Decision of the EEC Board of March 15, 2022 No. 41 set the rate of import customs duty CCT EAEU for industrial fatty alcohol at 0% of the customs value from the date of entry into force of this decision up to March 31, 2025.

Decision of the EEC Board of March 15, 2022 No. 42 established rates of import duties on waste and scrap precious metals at 0% of the customs value from the date of entry into force of this decision up to December 31, 2025.

The list of goods in respect of which temporary zero rates of import customs duties are established was approved by Decision of the EEC Council No. 46 of April 05, 2022. Temporary zero customs duty rates have been agreed for 537 items of critical imports. Those are, in particular, certain types of organic chemical compounds and products of inorganic chemistry, certain types of parts for machinery, equipment and mechanisms, certain types of leguminous crops and certain types of paper and cardboard.

RF Government Decree No. 956 of May 27, 2022 included new items in the list of manufacturing equipment, the import of which is exempt from VAT if it does not have analogues in Russia, previously approved by RF Government Decree No. 372 of April 30, 2009. The list includes a complex of equipment for the manufacturing of large-scale reinforced concrete modules for housing construction and a line of equipment for the production of MDF boards.

Decision of the EEC Board No.116 of August 16, 2022 specified import duty rates for certain types of components for electric hand tools at the rate of 0% of the customs value for the period from July 1, 2022 up to June 30, 2023. Corresponding amendments have been made to the Single Customs Tariff of the Eurasian Economic Union (EAEU).

Decision of the EEC Board No. 135 of September 28, 2022 determines the rates of import customs duties of the ETT EAEU for certain types of goods. Inulin, fish oil, sugar-free cocoa powder, vitamin mixtures for balanced nutrition, refractory clay, detergents and cleaners, refractory cements, etc. are included in the list of zero rates - a total of 110 items.

EEC Board Decision No. 154 of October 25, 2022 established that a zero import customs value rate will be applied to certain types of food products and pushbuttons from October 1, 2022 up to March 31, 2023.

Tariff quotas

Decree of the Government of the Russian Federation of March 16, 2022 No. 380 establishes that annually will be determined the maximum volume of export of certain types of timber to the countries – members of the Eurasian Economic

Union (EAEU). The size of quotas for the export of timber in 2022 to Armenia, Belarus, Kazakhstan and Kyrgyzstan is set. The procedure for calculating the quotas for 2023 and subsequent years was also established. Export licenses are issued by the Ministry of Economic Development. It is determined that the export of timber from the territory of the Russian Federation is carried out only by rail to Belarus, Kazakhstan and Kyrgyzstan and to Armenia – by road transport only through “Upper Lars”. Control over the volumes of timber exported will be carried out through the USAIS for timber accounting.

RF Government Decree No. 670 of April 15, 2022 amended Government Decree No. 1910 of November 03, 2021. According to the amendments, current export quotas for Russian producers of mineral fertilizers were temporarily raised by almost 700,000 tons. Thus, the quota for export of nitrogenous fertilizers has been increased by 231,000 tons, amounting to about 5.7 mn tons. The export quota for compound fertilizers was increased by 466,000 tons to 5.6 mn tons.

Decree of the Government of the Russian Federation of May 28, 2022 No. 972 from June 1, 2022 to July 31, 2022 tariff quota for export outside the Russian Federation to the states that are not members of EAEU, scrap and waste of ferrous metals exported in line with the customs export procedure in the total volume 540,000 tons.

Decree of July 31, 2022 extended the quota for exports of scrap and waste of ferrous metals outside the EAEU. From July 31 to the end of the year, the quota is equal to 1,350,000 tons. When exporting metals within the quota, the duty is 5% (minimum €100 per 1 ton), and when exceeding the quota – 5% (but minimum €290 per 1 ton). Until July 31, there was a quota of 540 thousand tons.

RF Government Decree No. 1392 of August 06, 2022 a quantitative restriction on export of liquid, granulated and clod lump sulfur in the amount of 1.1 mn tons was introduced from August 10 up to December 31, 2022.

Decision of the EEC Board No. 117 of August 16, 2022 sets the volume of tariff quotas for 2023 in relation to certain types of goods originating from the Republic of Serbia and imported into the territory of the EAEU member states in line with the Agreement between the EAEU and Serbia of October 25, 2019.

Decree of the RF Government of August 18, 2022 No. 1434 established from September 3 up to December 3, 2022 a quantitative restriction on export of recycled paper and paperboard (waste paper and paperboard) that are essential to the domestic market of the Russian Federation outside the territory of Russia to countries, which are not members of the EAEU, when placing them under the customs export procedure in the amount of 30,000 tons.

Decision of the EEC Board of August 23, 2022 No. 119 established tariff quotas for some types of meat products and milk for 2023. For all countries, except for Armenia, the quotas remained at last year's level. It is established that the tariff quotas apply to agricultural products imported into the customs territory of the EAEU placed under the customs procedure of release for domestic consumption except for products originating in and imported from CIS member states.

Import bans and restrictions

Executive Order of the President of Russia No. 100 of March 08, 2022 established additional anti-sanctions measures. Until December 31, 2022, a ban was imposed on the export outside the Russian Federation and (or) the import into the Russian Federation of products and (or) raw materials according to the lists determined by the Government of the Russian Federation. Restrictions are also imposed on the export and (or) import of products and raw materials in accordance with the lists established by the Government of the Russian Federation. The Executive Order was signed in addition to the measures provided for by the Executive Orders of February 28 “On application of special economic measures in connection with unfriendly acts of the USA and foreign states and international organizations joining them” and of March 1 “On additional provisional economic measures aimed at ensuring financial stability of the Russian Federation”.

Decree of the Government of the Russian Federation No. 302 of March 06, 2022 introduced a temporary ban on the export of foreign medical devices from the country, which were delivered from the states that joined the sanctions and were in importers’ warehouses or underwent customs procedures. The temporary ban also applies to goods that had been placed under customs procedures prior to the entry into force of this Decree and the actual export of which was to be carried out after the entry into force of this Decree. The Decree entered into force from the date of its official publication and shall be valid until December 31, 2022.

A temporary ban on the export of goods from the Russian Federation in accordance with the established list was introduced by RF Government Decree No. 311 of March 09, 2022 up to December 31, 2022. The list of goods prohibited for export includes, in particular, pharmaceutical products, ordinary drill pipes, cooperage products, ferrous metal compressed or liquefied gas tanks, hand tools, replaceable work tools for hand tools with mechanical drive, nuclear reactors, steam boilers, dish washers, hoists and elevators, fork-lift trucks, etc. The list of countries for which there is a ban on export is specified. Earlier this list was established by Edict of the Government of the Russian Federation No. 430-r of March 05, 2022.

Within the framework of the RF President Executive Order of March 08, 2022 No. 100 “On application of special economic measures in the sphere of foreign economic activity in order to ensure security of the Russian Federation”, a temporary ban on export of certain types of timber from the Russian Federation to foreign countries and territories was introduced by RF Government Decree of March 09, 2022 No. 313 till December 31, 2022. A list of foreign states and territories in respect of which the export ban is introduced has been determined. The list of certain types of goods in respect of which a temporary export ban is introduced has also been approved.

RF Government Decree No. 361 of March 15, 2022 introduced a temporary ban on the export of white sugar and raw cane sugar from the Russian Federation to third countries amid high demand and rising prices for the product. The restriction was in effect until August 31. At the same time, preferential import of sugar into the EEU countries was extended in summer until the end of October 2022.

RF Government Decree No. 362 of March 14, 2022 placed a temporary ban on export of wheat, meslin, rye, barley and corn from the Russian Federation, including to the countries of the EAEU, from March 15 up to June 30, 2022. Having said that, according to the Decree of March 31, export of the above crops to the EAEU countries was already permitted by order of the Agriculture Ministry.

Under RF Government Decree No. 529 of March 31, 2022 a temporary ban on export of rapeseed and sunflower seeds from the Russian Federation was introduced from April 1 up to August 31, 2022. There are cases where temporary ban does not apply, for example, when seeds are exported to the EAEU states, Abkhazia, South Ossetia, DNR and LNR; for goods exported by individuals for personal use, etc.

RF Government Decree of June 30, 2022 No.1171 “On temporary ban on export of rice and rice groats from the Russian Federation and on amendments into some acts of the Government of the Russian Federation” and RF Government Decree of June 30, 2022 No.1169 “On temporary ban on export of amino acids from the Russian Federation” restricted export of feed amino acids, rice and rice groats from July 1 up to December 31, 2022. Restrictions on export of rice and rice grits do not apply to export to the countries of the Eurasian Economic Union and within the frameworks of international intergovernmental agreements, and restrictions on export of feed amino acids will not affect the Eurasian Economic Union, Abkhazia, South Ossetia, DNR and LNR. The measures are aimed to ensure food security of the country, as well as to maintain price stability. In addition, the restriction on the export of feed amino acids will support livestock breeding and processing industries.

RF Government Decree No. 1580 of September 08, 2022 imposed a temporary ban on export of rapeseed from September 9, 2022 up to February 28, 2023 in connection with growth of global demand on this type of products due to growth of prices. Exports to EAEU member states and countries with which an intergovernmental agreement was signed were allowed.

RF Government Decree No. 1519 of August 31, 2022 imposed a temporary ban on the export from the Russian Federation of waste and scrap containing precious metals or metals plated with precious metals, other waste and scrap containing precious metal or compounds of precious metals used primarily for the extraction of precious metals, and waste and scrap of electrical and electronic products used primarily for the extraction of precious metals, which are essential for the domestic market of Russia.

In August 2014, Executive Order of the Presidential of Russia No. 560 of August 06, 2014 “On certain special economic measures aimed to ensure security of the Russian Federation” imposed a ban on import of certain types of agricultural products, raw materials and food products from the countries that imposed anti-Russian sanctions. Certain products, agricultural products and raw materials – beef, pork, fish, most vegetables, sausages, cheese, etc. are restricted for import into Russia (RF Government Decree No. 778 of August 07, 2014). As the sanctions imposed by foreign countries persisted, the Russian Federation extended its retaliatory measures as well. Executive Order of the President of the Russian

Federation of September 20, 2021 No. 534 “About extension of action of some special economic measures for safety of the Russian Federation” prolonged food embargo for the period from January 1 till December 31, 2022.

RF Government Decree No. 1843 of October 17, 2022 amended the List of agricultural products, raw materials and food products banned for import into the Russian Federation, approved by Decree of the Government of the Russian Federation No. 778 of August 07, 2014, and the Rules for destruction of products banned for import from the USA, Canada, Australia, Norway and EU countries, approved by Decree of the Government of the Russian Federation No. 774 of July 31, 2015.

In order to implement Executive Order of the President No. 725 of October 11, 2022 “On prolongation of certain special economic measures in order to ensure security of the Russian Federation” the Government of the Russian Federation prolongs the validity of these Decrees until December 31, 2023.

RF Government Decree of March 29, 2022 No. 506 stipulates that on proposals of federal executive bodies the Ministry of Industry and Trade of Russia is instructed to approve lists of goods (groups of goods), in respect of which the provisions of subparagraph 6 Art. 1359 and Art. 1487 of the Civil Code of the Russian Federation, provided the said goods (groups of goods) are put into circulation outside the territory of the Russian Federation by the right holders (patent holders), as well as with their consent.

In early May, the Ministry of Industry and Trade approved the list of goods subject to parallel imports. It includes more than 50 categories of goods, including cars (Volkswagen, Skoda, BMW, Toyota, etc.), electronics (Apple, Samsung, Sony, etc.), household appliances (Siemens, Dyson, etc.) and game consoles (Xbox and PlayStation).

The list will be adjusted: it can be both expanded and diminished depending on the decisions of foreign companies to work in Russia. The list is supposed to be updated quarterly or bi-monthly. Thus, with Order No. 2299 of June 03, 2022, the Russian Ministry of Industry and Trade adjusted the list of goods for parallel imports, the nomenclature for BMW and Siemens was expanded, while a number of brands that guaranteed supplies were, on the contrary, excluded.

Information of the Ministry of Industry and Trade of August 04, 2022 communicates that the list of goods for parallel imports includes reagents and consumables for equipment for cancer treatment, brands of auto parts, products of radio electronic, chemical industry and other goods. It is also reported that some brands of perfumes and cosmetics are removed from the list of exceptions due to the lack of products of these manufacturers in retail chains.

The Order of the Ministry of Industry and Trade of October 21, 2022 No. 4456 amended the list of goods in relation to which the provisions of subparagraph 6 Art. 1539 and Art. 1487 of the Civil Code, provided these products are put into circulation outside Russia by right holders, approved by the Order of the Ministry of Industry of April 19, 2022 No. 1532. This list includes certain brands of alcoholic beverages (Aberfeldy, Aerstony, Bell’s, Bulleit, Cupper Dog, Oban, Sheridan’s, Jose Cuervo, etc.).

The new version contains the 27th group of TN VED EAEU – “Mineral fuels; oil and products of their distillation; bituminous substances; mineral waxes”. This group is supplemented with new commodity brands of manufacturers – in particular, such as Mitsubishi, Mobil, Shell, Mercedes, etc. New commodity brands of manufacturers of perfumes, cosmetics and other care products have been introduced. The list was also supplemented with brands of automotive spare parts, chemical industry products, toys and other goods.