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Development Resources of the Border Regions of the Russian Federation

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ABSTRACT

The Russian Federation borders with 18 foreign countries. Seven of them are NATO members as of March 2024. The state border of Russia passes through the territory of almost half of the constituent entities of the Russian Federation. The shelling of the territory of the Russian Federation by the armed forces of Ukraine radically changes the situation in the sphere of not only of military, but also of socio-economic security, primarily in the border regions of Russia. The issue of their protection, elimination of weaknesses and organization of society's life in a new, unstable, largely unfavorable external environment is especially acute. The formation of resources necessary for solving these issues largely depends on the current level of economic development of the country and its border regions. The author's purpose was to illustrate some aspects of the economic situation in the border regions of the Russian Federation, given the current circumstances where Russia's adversaries are attempting to create areas of tension near the Russian borders, exemplified by Ukraine, Poland, and the Baltic States. To achieve this goal, the author solved several tasks. They are: selecting the subjects of the Russian Federation to be studied, determining the set of statistical indicators to be analyzed, and determining the length of the dynamic range for each indicator. We also constructed the dynamics of change for these selected indicators. The results of the author's analysis of seven statistical indicators that reflect the socio-economic situation in 36 selected border regions of the Russian Federation are presented below. The analyzed statistical data are taken for the period from 1995 to 2021. The economic and statistical research was carried out on the basis of data from the Federal State Statistics Service of the Russian Federation, most of which are published in statistical collections "Regions of Russia. Socio-economic Indicators". The article shows that a number of the studied parameters indicate the need to strengthen the economic power of the Russian border regions in modern and possible future conditions. The obtained results can be useful for legislative and executive authorities of the Russian Federation and the subjects of the Russian Federation in the development and implementation of the development policy of regions that have a particularly important strategic importance.

Keywords: constituent entities of the Russian Federation; border regions; socio-economic security; unfriendly states; anti-Russian sanctions

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BORDERING REGIONS¹

As of March 2024, the Russian Federation shares borders with 18 countries (*Table 1*). Nine of them² are unfriendly states to Russia,³ and seven are members of the North Atlantic Treaty Organisation (NATO). Azerbaijan, Kazakhstan, and Mongolia co-operate with NATO and conduct joint military exercises.

The state border is shared by 41 constituent entity of the Russian Federation. We will exclude five of them from consideration: Samara Region, whose land border with the Republic of Kazakhstan is 300 m long; Kamchatka Territory, Sakhalin Region and Chukotka Autonomous District — they have only a sea borders; the Republic of Crimea, as data on the state of its economy are not presented for all the years we have analysed. We will divide the remaining regions into two groups. Group A includes those of them that border with states unfriendly to Russia. All other border constituent entities of the Russian Federation will form group B (*Table 2*).

From the non-border regions we will form group C. Since the values of most of the economic indicators of Moscow and St. Petersburg that we have studied significantly exceed the values of indicators of many other constituent entities of the Russian Federation (they are statistical outli-

ers), we will exclude these cities from this group. We will not include Sevastopol city in this group for the same reason for which we did not include the Republic of Crimea in Group B.

Let us consider what resources all three groups have for their development. A resource is a stock and (or) source of something. We call the development of an object its change, which results in a new qualitative state of its composition (structure), organisation, size (mass-scale), internal and external relationships⁴ [1]. The resource for the development of human society (hereinafter referred to as society) is understood as the resources available to society and necessary for its development.

The most important of them, as is known, include the number and composition of the population, natural, material, information resources, knowledge and opportunities for their use, the number of workers employed in production, the quality of management at all levels. Foreign trade helps to provide modern Russia with important development resources (foreign currency, money coming into the budget system of the country, imported means of production). With regard to the border constituent entities of the Russian Federation, the data of official statistics available to the author allow us to study the size and dynamics of the population, the number of people employed in the economy, the volume of investment in fixed capital, the level of capital productivity of fixed production assets, the volume of exports and imports. [2-4].

Analyses were performed on four time periods:

- 1995–2000 the difficult period of Russia's socio-economic development under Russian President B.N. Yeltsin;
- 2001–2013 a period before the introduction of anti-Russian sanctions;

¹ The term "region" is used in this paper as a synonym for the term "constituent entity of the Russian Federation".

² The list of unfriendly states is established by the Order of the Government of the Russian Federation No. 430-0 dated March 5, 2022 (ed. Oct. 29, 2022). URL: http://static.government.ru/media/files/wj1HD 7RqdPSxAmDlaisqG2zugWdz8Vc1.pdf (accessed on March 12, 2022).

³ Foreign unfriendly states are foreign states committing unfriendly actions against the Russian Federation, citizens of the Russian Federation or Russian legal entities. Unfriendly actions are defined as the imposition of political or economic sanctions against the Russian Federation, citizens of the Russian Federation or Russian legal entities, committing other actions that pose a threat to the territorial integrity of the Russian Federation or are aimed at economic and political destabilisation of the Russian Federation. Federal Law of July 4, 2018 No. 127-FL 'On measures to influence (counteract) the unfriendly actions of the United States of America and other foreign states'. Art. 1, part 1, part 2. URL: https://www.law.ru/npd/doc/docid/557585063/modid/99 (accessed on July 18, 2023).

⁴ "Development is a concept reflecting such a change in the organisational and/or elemental composition of an object (its quality), which is the emergence (in the object) of a new type or a complex of organisational interactions and its consolidation (retention) in a series of successive states of the object with the help of the whole complex of its internal and external interactions — naturally, artificially or naturally-artificially" [1, p. 158].

Table 1

The length of the Russian Federation's state border with neighboring countries, km

	Border, km						
Country (ranking by border length)	terrestrial	river	lake	marine	Total		
Republic of Kazakhstan	5936.1	1516.7	60.0	85.8	7598.6		
People's Republic of China	650.3	3489.0	70.0	0.0	4209.3		
Mongolia	2878.6	588.3	588.3 18.1		3485.0		
Ukraine without Crimea	1500.2	422	3.4	320.0	2245.6		
Republic of Finland	1091.7	60.3	119.8	54.0	1325.8		
Republic of Belarus	857.7	362.3	19.0	0.0	1239.0		
Republic of Georgia	572.5	0.0	0.2	0.0	572.7		
Republic of Estonia	89.5	87.5	147.8	142.0	466.8		
Republic of Azerbaijan	272.4	55.2	0.0	22.4	350.0		
Republic of Lithuania	19.9	206.0	30.1	22.4	288.4		
Republic of Latvia	137.2	127.5	5.8	0.0	270.5		
Republic of Abkhazia	177.0	55.9	0.0	22.4	255.3		
Republic of Poland	203.3	0.0	0.8	32.2	236.3		
Kingdom of Norway	43.0	152.8	0.0	23.3	219.1		
Japan	0.0	0.0	0.0	194.3	194.3		
Republic of South Ossetia	70.0	0.0	0.0	0.0	70.0		
USA	0.0	0.0	0.0	49.0	49.0		
DPRK (North Korea)	0.0	17.3	0.0	22.1	39.4		

Source: compiled by the author based on: URL: https://ru.wikipedia.org/wiki/Государственная_граница_России (accessed on Feb. 1, 2024).

Table 2

Groups of border constituent entities of the Russian Federation

Group A	Group B			
Belgorod, Bryansk, Voronezh, Kursk, Republic of Karelia, Kaliningrad, Leningrad, Murmansk, Pskov, and Rostov Regions	Smolensk Region, Krasnodar Territory, Astrakhan and Volgograd Regions, Republics of Daghestan, Ingushetia, and North Ossetia (Alania), Kabardino-Balkarian, Karachayevo-Chircassian and Chechen Republics, Orenburg, Saratov Regions, Kurgan, Tyumen less autonomous areas, Chelyabinsk Regions, Republics of Altay, Tuva, Buryatia, Altai, Tran-Baikal, Primorye and Khabarovsk Territories, Novosibirsk, Omsk and Amur Regions, and Jewish Autonomous Region.			

Source: compiled by the author.

- 2014–2016 the most difficult years for the Russian economy after the imposition of sanctions [5];
- 2017–2021 during these years, the economy adjusted to operate under the conditions of a long-term hybrid blockade imposed by a group of unfriendly states the Russian Federation.

The time at which the events occurred, and the significantly changed conditions of the society's activities, was chosen as a criterion for dividing the timeline into periods [6].

POPULATION SIZE

In the periods under study, the dynamics of the population of all considered groups of regions was similar: there was a tendency towards its reduction (with a slight increase in 2014–2016). (*Fig. 1*).

In the total number of Russians, the share of the population of the group of regions C decreased by 2.7 percentage points (p.p.), group A — by 0.6 p.p., group B increased by 0.2 p.p., residents of Moscow and St. Petersburg increased by 3.1 p.p. (*Fig. 2*).

At the same time, the population density in group A was higher than in group B and the latter higher than in group C (*Figure 3*).

MOTORWAYS AND RAILWAY LINES

It is natural to expect that the density of roads and railways will be higher in regions with higher population density. This was the case for the groups of the Russian Federation constituent entities under consideration (*Figures 4*, *5*).

After the imposition of anti-Russian sanctions, the rate of construction of paved public roads in Russia slowed down (*Figure 6*). For railways, the drop in average annual density-change rates in 2014–2016 was only evident in the regions of Group C. It was compensated for in 2017–2021.

A well-developed transport network plays a significant role in the development of a territory, its natural resources, and the socio-economic growth of the society inhabiting that area. At the same time, it serves as an indicator of such progress.

HOUSEHOLD INCOMES

The factors that attract people to live in a particular region include monetary income. The cost

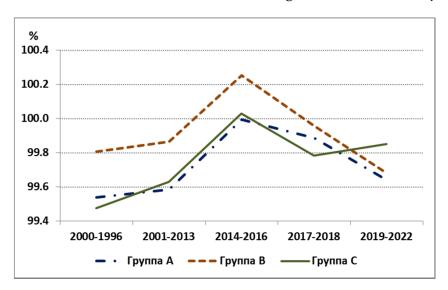


Fig. 1. The average annual rate of change in the population of the constituent entities of the Russian Federation, 1996–2021, percent

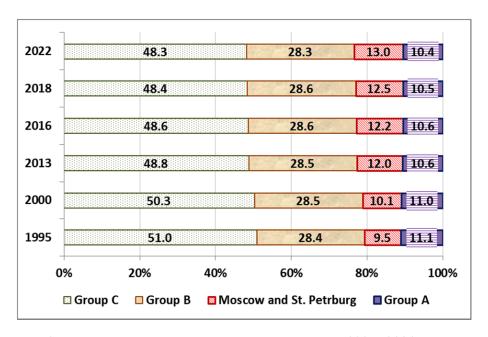


Fig. 2. Population structure according to regional groups, 1995–2021, percent

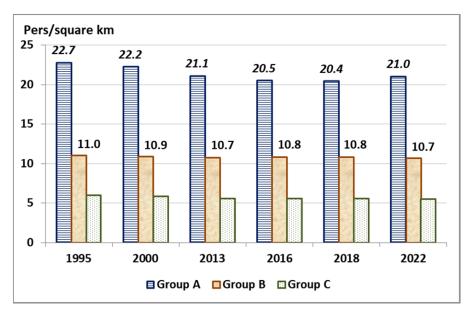


Fig. 3. Population density in groups of constituent entities of the Russian Federation, 1995 – 2021, person per sq. km

Source: developed by the author on the basis of data of statistical collections "Regions of Russia. Socio-economic Indicators" for the years 2005, 2012, 2015, 2020, and 2022.

of living in a given place is also important. For example, in 2021, the average per capita cash income in the Chukotka Autonomous District was 2.3 times higher than in Krasnodar Territory; if it is divided by the subsistence minimum set

for the fourth quarter of 2021, the ratio of the obtained values is 0.98.5 Judging by this value,

⁵ Regions of Russia. Socio-economic indicators. 2022. Statistical collection. Moscow: Rosstat; 2022. 11220 p.

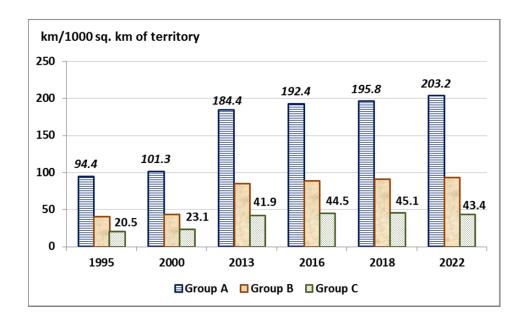


Fig. 4. Density of paved public roads in the regions of groups A, B and C in 1995–2021, km/ 1000 sq. km of territory

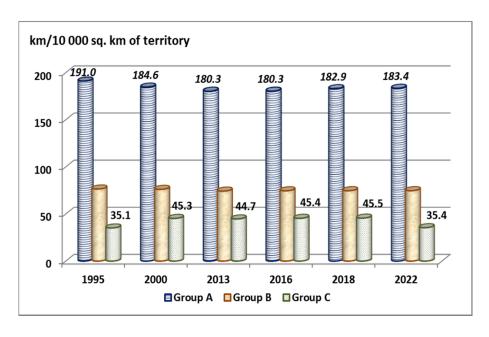


Fig. 5. The density of public railway tracks in the regions of groups A, B and C in 1995–2021, km per 10 thousand sq. km.

Source: developed by the author on the basis of data of statistical collections "Regions of Russia. Socio-economic Indicators" for the years 2005, 2012, 2015, 2020, and 2022. km/10 000 sq. km of territory

it is better to receive the same amount of cash income in Krasnodar Territory than in Chukotka Autonomous District.

On this basis, let us assess the attractiveness of regions by the ratio of average per capita cash income to the subsistence minimum. In

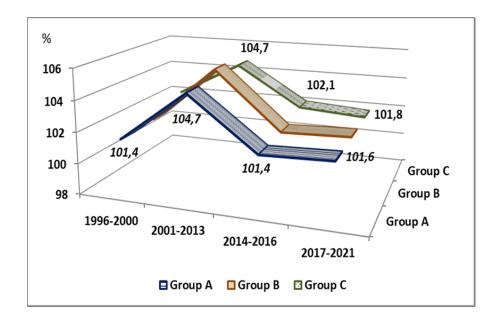


Fig. 6. The average annual growth rate of density of paved public roads in the regions of groups A, B and C in 1995–2021, percent

Table $\it 3$ The ratio of the average per capita income of the population to the subsistence minimum in groups A, B, C, units.

Group	2005	2013	2016	2018	2021
A	2.3	3.3	3.5	3.2	3.3
С	2.4	3.3	3.5	3.1	3.2
В	2.2	2.9	3.1	2.7	3.3

Source: developed by the author on the basis of data of statistical collections "Regions of Russia. Socio-economic Indicators" for the years 2005, 2012, 2015, 2020, and 2022.

the years under consideration,⁶ group A was the leader in this indicator, while group B lagged behind (*Table 3*), which corresponds to a higher population density in the group of regions A (*Figure 3*).

The dynamics of the ratio of the average per capita cash income to the subsistence minimum in the considered groups of the RF constituent entities in 2006–2021 is shown in the *Figure 7*.

It is noteworthy that the drop in the indicator in question occurred not in the most difficult years after the introduction of anti-Russian sanctions (2014–2016), but after adapting to life in changed conditions in 2017–2018. The reason for this was, as it seems, the increase in the subsistence minimum. Examples of its growth outstripping the average per capita income are given in *Table 4*.

FIXED CAPITAL INVESTMENTS

Investments in fixed capital are one of the key sources of technological and economic develop-

⁶ Data on the subsistence minimum in the constituent entities of the Russian Federation could be found only since 2005.

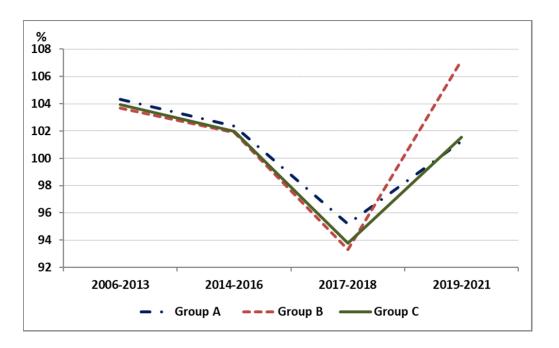


Fig. 7. The rate of change in the ratio of the average per capita income of the population to the subsistence minimum in the regions of groups A, B and C in 2006–2021, percent

Table 4

The average annual growth rate of the per capita monetary income of the population and the subsistence minimum, 2017–2018, percent

Constituent entity of the Russian Federation	Average per capita monetary income	Subsistence minimum
Russian Federation	103.9	107.1
Kaliningrad Region	103.0	111.5
Moscow	107.5	118.6
Krasnodar Region	102.4	110.2
Nizhny Novgorod Region	101.3	107.4
Chukotka Autonomous District	111.0	106.4

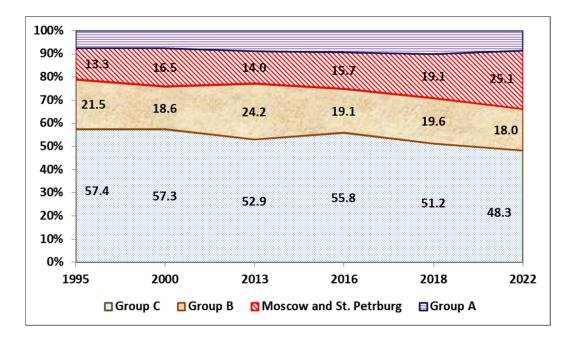


Fig. 8. The structure of investments in fixed assets by group of regions, 1995 – 2021, percent

ment and are an important factor in ensuring the economic security of the country, its regions, and economic entities [7]. The bulk of these investment expenditures in the period under review was directed to non-border regions (group C) [8]. The least amount was invested in the constituent entities of the Russian Federation bordering with unfriendly states (group A). At the same time, in the time interval under study there was a consistent decrease in the share of investments in fixed capital of the regions of groups B and C (Figure 8): from 1995 to 2021 by 3.5 p.p. and 9.4 p.p., respectively; in this period, investments in fixed capital were more concentrated in Moscow and St. Petersburg. In 2021, their share increased by 11.9 p.p. compared to 1995.8

While production in the Russian Federation is not 100% robotised, people play an important role in it. And investments go to the creation of fixed assets on which these people work. Therefore, let us correlate the investments made with the number of people employed in the economy. Then the picture of investment security of groups of regions presented in *Figure 8* will change. Thus, in 2021 the RF constituent entities with no borders with other countries received 48.1% of the total volume of investments in fixed assets, which is 5.5 times higher than the share of investments in the subjects of group A (8.8%). And the value of investments in fixed capital per one employed person in the economy in Group C is not 5.5, but 1.1 times higher than in the regions of Group B (*Figure 9*).

The data presented in *Figure 9* show that in the period under study, group C was also the leader in terms of investment in fixed capital per one employed person in the economy. However, the

⁷ "The economic security of regional development is also significantly determined by the amount of investment expenditures. In their structure it is necessary to emphasise investments in fixed capital as one of the basic sources of regional economic development" [12].

⁸ Regions of Russia. Socio-economic Indicators. 2020. Statistical collection. Moscow: Rosstat; 2020. 1242 p.; Regions

of Russia. Socio-economic Indicators. 2022. Statistical collection. Moscow: Rosstat; 2022. 11220 p.

change in the dynamics of investment (*Figure 10*) and the average annual number of employed led to the convergence of the values of the studied indicators of all the considered groups of regions.

In general, these data suggest that the development of a group of regions of the Russian Federation, that do not share borders with other countries, was better supported by investments

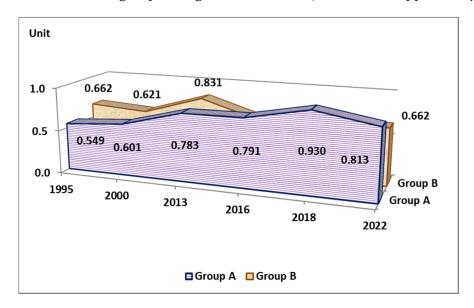


Fig. 9. The ratio of the values of the indicators of investment in fixed assets per person employed in production in the regions of groups A and B to the value of this indicator in the regions of group C, fractions of units.

Source: developed by the author on the basis of data of statistical collections "Regions of Russia. Socio-economic Indicators" for the years 2005, 2012, 2015, 2020, and 2022.

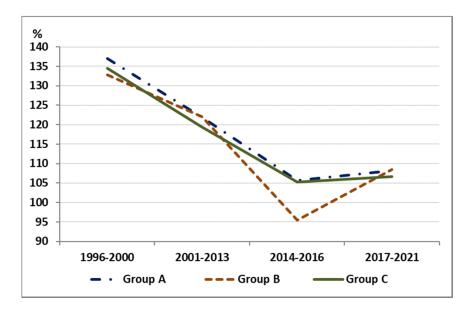


Fig. 10. The average annual rate of change in the volume of investments in fixed assets per person employed in the economy, percent

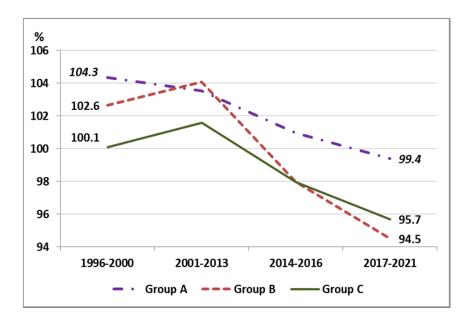


Fig. 11. The average annual rate of change in the return on fixed assets, 1995–2021, percent

in fixed assets from 1995 to 2021 compared to groups of regions that border other countries.

RETURNS ON ASSETS

Investments in fixed capital are used for renewal and expansion of fixed assets (buildings, structures, machinery and equipment, vehicles, cultivated biological resources of animal and plant origin, etc.), and their composition, quality, technological characteristics, nature, and level of professional use, as is known, affect the rate of economic development. And all this depends on the quality of management at all levels of management. The efficiency of fixed assets is judged by the index of fund yield or return on assets — the ratio of the value of created products to the value of fixed assets.

The gross regional product (GRP) serves as an indicator of the value of output at the level of the constituent entities of the Russian Federation; the value of the fund efficiency indicator, which is equal to the ratio of GRP to the value of fixed assets, has been decreasing in recent decades in all groups of regions under consideration (*Figure 11*). The largest decrease in the fund efficiency after the introduction of anti-Russian sanctions occurred in the group of regions B.

The reasons for the fall in the level of return on assets or stock return may be different: obsolescence of funds; reduction of the time of their use (for example, due to the COVID-19 pandemic, reduction in the volume of output as a result of a decrease in exports, increase in the repair period due to the shortage of imported products, etc.); replacement of imported funds from unfriendly countries with less technologically perfect ones, etc. The result is the same — a narrowing of development opportunities. The result is the same — narrowing of development opportunities.

The performed study showed that, in terms of capital return, both groups of border regions lag behind the group of non-border regions (*Figure 12*). Consequently, as well as by the "investment in fixed assets" resource, the latter have more development opportunities than the groups of cross-border constituent entities of the Russian Federation under consideration.

INTERNATIONAL TRADE

The important role of foreign trade in the economy of the Russian Federation is well known. The proceeds from exports provide funds for the purchase and creation of necessary development resources. Thus, having

assessed the strategic factors of development of border regions of the Russian Federation, S. V. Doroshenko and K. A. Posysoeva concluded that "exports turned out to be a significant and positively influencing variable on the development of all border regions of

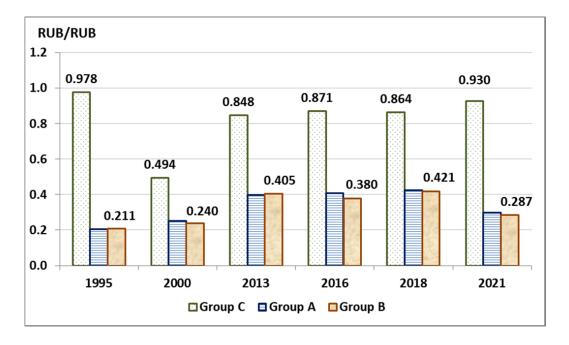


Fig. 12. Return on fixed assets in groups of regions in 1995-2021, ruble / ruble

Source: developed by the author on the basis of data of statistical collections "Regions of Russia. Socio-economic Indicators" for the years 2005, 2012, 2015, 2020, and 2022, RUB/RUB

Table 5

The shares of exports and imports of groups of the constituent entities of the Russian

Federation in total Russian exports and imports, 1998–2021, percent

Croun	1998	2005	2013	2016	2018	2021	Trend	
Group	Exports							
А	6.4	5.8	5.8	6.6	6.5	7.5	Growth	
В	21.7	19.4	12.6	9.4	8.7	8.8	Decline	
Moscow	29.3	37.0	47.6	47.0	49.8	48.1	Growth	
	Imports							
А	8.1	16.3	10.1	8.2	8.4	7.4	Decline	
В	13.5	12.6	8.4	8.9	9.8	10.1	Decline then growth	
Moscow	35.3	59.4	54.2	53.6	53.0	53.0	Relative stability	

Russia, regardless of the type of borders" [9]. Imported goods are used to meet the needs of the population, the state and business. It is no coincidence, therefore, that the bulk of the finances of economic sanctions against the

Russian Federation operates in the financial and foreign economic spheres.

Although the share of groups of border subjects of the Russian Federation in the total volume of Russian exports and imports in the

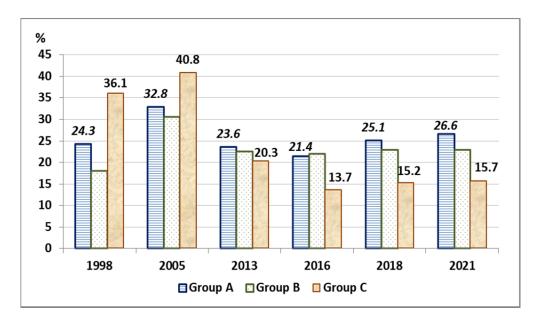


Fig. 13. Share of exports in GRP, 1998-2021, percent

Source: developed by the author on the basis of data of statistical collections "Regions of Russia. Socio-economic Indicators" for the years 2005, 2012, 2015, 2020, and 2022.

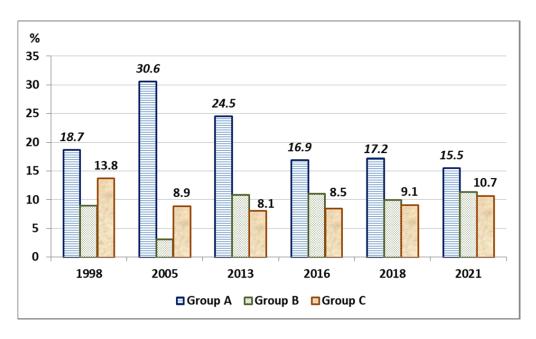


Fig. 14. Share of imports in GRP, 1998-2021, percent

period under consideration does not exceed 30% (*Table 5*) (since the main volume of foreign trade flows through Moscow), foreign trade contributes to the economic development of these regions.

To assess this contribution, the shares of exports and imports of the RF constituent entities in gross regional products were calculated in this paper. To make export and import volumes, which Rosstat gives in US dollars, co-comparable with gross regional products (in Rosstat's statistics they are given in roubles), the latter were converted from roubles into dollars at the exchange rate set by the Bank of Russia.

According to the data obtained, since 2013, the group of regions A has been more dependent on foreign trade than B and C (*Figures 13, 14*). The ratio of exports to gross regional product of group A has tended to increase since 2016 and exceeded 25% in 2018. On the other hand, the ratio of imports of the subjects of group A to GRP has been decreasing since 2005, but remains higher than in other groups of regions. All this indicates that the RF constituent entities of group A are more dependent on the state of foreign trade and may be more vulnerable than other groups to sanctions, bans and restrictions in the sphere of foreign trade activities.

The dependence of Group B regions on exports and imports was decreasing before the introduction of anti-Russian sanctions, but after adjusting to them it has been increasing since 2016. The composition of the regions in this group suggests that, especially in terms of imports, this may be due to the reorientation of Russia's foreign trade from European markets to Asian ones. Economists M.G. Polozkov and Associate Professor N.S. Epifanova included high dependence on imports of the most important products and declining exports among the main threats to the economic security of 12 border subjects of the Siberian Federal District (all of them are included in the group of regions B formed by us) in 2014. [7].

CONCLUSIONS

The study has shown that for the successful socio-economic development of Russia it is necessary to increase the volume and improve the efficiency of the use of development resources, which first of all refers to the number of populations.

Its decrease in the period under study both in the Russian Federation as a whole and in the groups of its regions under consideration weakens the country's power. At the same time, the population density in the border constituent entities of the Russian Federation is higher than in non-border constituent entities (excluding Moscow and St. Petersburg). It is highest in the regions that make up Group A, bordering with countries that are unfriendly to Russia.

In the same group in the period under review, the ratio of average per capita money income of population to the subsistence minimum was better, and this is a favourable factor for attracting the population and increasing its number. However, the researchers note that 'previously favourable border regions of the European part of the country due to geopolitical instability are beginning to lose their attractiveness' [10].

Simultaneously with the measures to at least stop the population decline, it is necessary to work on increasing the technological level of all spheres of social production. Widespread use of modern technologies, equipment, tools, instruments, devices, means of communication, software will allow, of course, with a lag in time, to increase the capital productivity. In 1995–2021 in the groups of border regions under consideration it was 2–3 times lower than in the non-border regions, but in the years of anti-Russian sanctions the capital productivity is decreasing in the latter as well (*Figure 12*). It is clear that technological innovations require investments.

In 1995–2021, the regions in Group A had a higher investment resource for development than the constituent entities of the Russian Federation in Group B. In 2014–2016, the most difficult years

for the Russian economy after sanctions and other restrictions were imposed on it, the investment in fixed capital, taken in actual prices, decreased by 14.7% in the regions of Group B,9 while in other groups of regions it increased. Both groups of the border subjects of the Russian Federation lagged behind the non-border constituent entities by the level of capital productivity. Consequently, both the investments coming to the border regions and the efficiency of fixed assets utilisation reduce the development opportunities of these subjects in comparison with non-border regions.

The high density of roads and railways in these groups of border regions is favourable for the economic development and life of the population, compared to the non-border regions (Group C). The modern transport network also increases the speed of movement of people, civilian and military cargo in case of emergencies, and enhances the safety of life in the society. However, after the imposition of anti-Russian sanctions, the pace of construction of paved roads and public railways in Russia slowed down.

Although the volume of foreign trade of the considered groups of Russian border regions is low compared to the total volume of foreign trade in the Russian Federation, the share of their exports and imports in gross regional products is significant, especially in the bordering with unfriendly countries regions. This indicates their increased reliance on the state of foreign trade and, consequently, their potential vulnerability to measures of foreign trade isolation taken by states that are not friendly to Russia.

It seems that these and other spheres of activity, which can be hit by states hostile to Russia in order to damage the domestic economy and society, should be strengthened. It seems necessary: 1) to protect and eliminate weaknesses of the border regions of the Russian Federation; 2) to develop special programmes for the development of border regions, which would help to create a deep echeloned protection against armed invasions by land, water and air and the necessary logistics for this purpose; 3) to have action plans both to prevent the emergence of new aggressive actors near the country's outskirts and to carry out preparatory and urgent measures in the border regions in case of emergencies.

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