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CHANGES:  
FACTS, TRENDS, FORECAST**

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## ECONOMIC AND SOCIAL CHANGES: FACTS, TRENDS, FORECAST

A peer-reviewed scientific journal that covers issues of analysis and forecast of changes in the economy and social spheres in various countries, regions, and local territories.

The main purpose of the journal is to provide the scientific community and practitioners with an opportunity to publish socio-economic research findings, review different viewpoints on the topical issues of economic and social development, and participate in the discussion of these issues. The remit of the journal comprises development strategies of the territories, regional and sectoral economy, social development, budget revenues, streamlining expenditures, innovative economy, and economic theory.

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In 2017 the socio-economic research was supplemented by agricultural issues. ISED T RAS was joined by the Northwestern Dairy and Grassland Farming Research Institute, and was reorganized into the Vologda Research Center of the Russian Academy of Sciences.

In 2019 the Center continued expanding having launched the Laboratory of Bioeconomics and Sustainable Development within the framework of the national project “Science”. The Laboratory is engaged in scientific research aimed at introducing biotechnologies into the practice of agriculture.

The VoIRC RAS Director is Aleksandra A. Shabunova (Doctor of Economics). The Academic Leader of the Center is Vladimir A. Ilyin (RAS Corresponding Member, Doctor of Economics, Professor, Honored Worker of Science of the Russian Federation).

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- problems of economic growth, scientific basis of regional policy, sustainable development of territories and municipalities, and transformations of socio-economic space;
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- territorial characteristics of living standards and lifestyle, behavioral strategies and world view of different groups of the Russian society;
- development of regional socio-economic systems, implementation of new forms and methods concerning territorial organization of society and economy, development of territories' recreational area;
- socio-economic problems regarding scientific and innovative transformation activities of territories;
- elaboration of society's informatization problems, development of intellectual technologies in information territorial systems, science and education;
- development of scientifically based systems of dairy cattle breeding in the conditions of the North-Western region of Russia;
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- development of zonal technologies for the cultivation of agricultural crops;
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- development of technologies and technical means for agricultural production in the North-Western region of Russia;
- assessment of biodiversity in the North-Western region of Russia;
- development and implementation of biotechnologies in agricultural production;
- improvement of breeding methods and creation of new varieties of forage crops.

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2008 – Memorandum of agreement is signed with Alexander’s Institute at the Helsinki University (Finland, 2008).

2009 – Cooperation agreement is signed with Center for System Analysis of Strategic Investigations of NAS (Belarus, 2009).

2010 – Cooperation agreement is signed with the Institute of Economics of the National Academy of Sciences of Belarus (Minsk, Belarus, 2010).

2011 – Cooperation agreements are signed with National Institute of Oriental Languages and Civilizations (Paris, France, 2011), Institute of Business Economy at Eszterhazy Karoly College (Hungary, 2011), Republican research and production unitary enterprise “Energy Institute of NAS” (Belarus, 2011). Memoranda of understanding are signed with Jiangxi Academy of Social Sciences (China, 2011), Research and Development Center for Evaluation and Socio-Economic Development and the Science Foundation of Abruzzo region (Italy, 2011).

2012 – Cooperation agreement is signed with Center for Social Research at the Dortmund Technical University (Germany, 2012).

2013 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2013). July 2013 – The application for research performance by international consortium involving ISED T RAS within the 7th Framework Programme of European Community.

2014 – Cooperation agreement is signed with Center for System Analysis and Strategic Research of the National Academy of Sciences of Belarus (Belarus, 2014). Memoranda of understanding are signed with Jiangxi Academy of Social Sciences (Mao Zhiyong, China, 2014), National Institute for Oriental Studies INALCO (Julien Vercueil, France, 2014).

2015 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2015). Cooperation agreement is signed with the Institute of Sociology of the National Academy of Sciences of Belarus (Belarus, 2015).

2016 – Cooperation agreements are signed with the Center for the Study of Industrialization Modes of the School of Advanced Studies in the Social Sciences (EHESS) (Paris, France, 2016); Institute of Philosophy, Sociology and Law of NAS RA (Yerevan, Armenia, 2016); Yerevan Northern University (Armenia, 2016), Yerevan State University (Armenia, 2016). Memoranda of understanding are signed with Jiangxi Academy of Social Sciences (China, 2016).

2018 – Cooperation agreements are signed with the Department of Agrarian Sciences of the National Academy of Sciences of Belarus (Belarus, 2018); the Republican Unitary Enterprise “Scientific and Practical Center of the National Academy of Sciences of Belarus for Agricultural Mechanization” (Belarus, 2018). Memorandum of understanding is signed with the European School of Social Innovation (ESSI) (Germany, 2018).

2019 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2019).

2020 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2020).

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# EDITORIAL

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## “Revolutionary” Words of the Russian President on November 7, 2024



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**Abstract.** November 7, 2024, speaking at the plenary session of the Valdai International Discussion Club in Sochi, Vladimir Putin expressed the hope that Russia would not return to “the path it followed before 2022”; a path fraught with “hidden, veiled intervention against our country”. Some experts assessed these words of the President as the beginning of a “revolution from above”, that is, as the beginning of an active process of renewal of elites in the country. Based on facts and expert assessments, we consider the process of elites renewal in Russia as an evolutionary process that has been going on for almost 25 years. In this context, we analyze a number of decisions made by Vladimir Putin from the very beginning of his presidential terms (since 2000). The launch of the special military operation in February 2022 and Vladimir Putin’s fifth presidential term (which began in May 2024 after the inauguration of the President) only accelerated this process. The article continues the monitoring (that started in June 2022) of federal laws and decrees adopted by the President and the RF Government. Special attention is paid to analyzing

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the effectiveness of migration policy in the Russian Federation as one of the specific examples of system-wide problems faced by the public administration as a whole. It is concluded that the key decisions of the head of state, especially those adopted during almost three years of the special military operation (such as the “Time of Heroes” program, personnel appointments in the RF Government, decision of the Constitutional Court to lift the statute of limitations on real estate acquired through corrupt proceeds, etc. act as a kind of practical tools to achieve the major goal: strengthening Russia’s national sovereignty in the context of civilizational conflict with the Collective West, as well as solving key tasks to achieve this goal – renewal of elites and consolidation of society. Our contribution consists in a comprehensive approach to analyzing the process of elites renewal in the country, including by systematizing the administrative decisions of the head of state made in the periods before and after the start of the special military operation.

**Key words:** Valdai Forum, live TV phone-in, renewal of elites, “Time of Heroes”, President.

November 7, 2024, speaking at the plenary session of the Valdai International Discussion Club in Sochi, Russian President Vladimir Putin noted: *“I would not like Russia to return to the path it followed before 2022, as I said in my speech. And this was a path that involved such a hidden, veiled intervention against our country, aimed at subordinating it to the interests of some other countries that still believed they had the right to do so”*<sup>1</sup>.

The very next day, the newspaper *Moskovsky komsomolets* published an article with the headline **“Putin has acknowledged the betrayal of the elites: A revolution from above has begun”**<sup>2</sup>.

Its author D. Popov<sup>3</sup> noted that at the Valdai Forum the President uttered **“revolutionary words... words one could only dream of”, they are “worth a lot”**<sup>4</sup>.

*“These words were revolutionary. To hear from the president that he does not want to return to the course that Russia followed before 2022, and a harsh assessment of this course, is something that good Russian people could only dream of... The president’s recognition that the country was heading for “subordination to the interests of some other countries”, and, roughly speaking, transformation to another Western colony, is worth a lot. Honestly acknowledging a problem is the first step toward starting to solve it. This, I dare say, is the beginning of a revolution from above, the reassembly of the system”*<sup>5</sup>.



<sup>1</sup> Vladimir Putin’s speech at the meeting of the Valdai International Discussion Club on November 7, 2024. Available at: <http://www.kremlin.ru/events/president/news/75521>

<sup>2</sup> Popov D. Putin acknowledged the betrayal of the elites: The revolution from above has begun. Available at: <https://www.mk.ru/politics/2024/11/08/putin-priznal-predatelstvo-elit-nachalas-revolyuciya-sverkhu.html?ysclid=m4mavvlteb25960798>

<sup>3</sup> D. Popov is a columnist for the politics department. He has been working at *Moskovsky komsomolets* newspaper since 1992 (source: official website of *Moskovsky komsomolets*. Available at: <https://www.mk.ru/authors/dmitriy-popov/>).

<sup>4</sup> Popov D. Putin acknowledged the betrayal of the elites: The revolution from above has begun. Available at: <https://www.mk.ru/politics/2024/11/08/putin-priznal-predatelstvo-elit-nachalas-revolyuciya-sverkhu.html?ysclid=m4mavvlteb25960798>

<sup>5</sup> Ibidem.

We cannot but agree with this. After all, in fact, it was a recognition of the fact that not all of the President's decisions, as it turned out, were made in a timely manner. Vladimir Putin spoke about this on December 19, 2024 during the "direct line": *"If it were possible to return to 2022, then I would have thought that **the decision to start the SMO should have been made earlier... and, knowing this, we just had to start preparing for these events, including the SMO**"...*

*"...if it were possible to look at the situation in 2022, knowing what is happening now, what would I think? That **such a decision, which was made at the beginning of 2022, should have been made earlier. This is the first point.***

*And the second point is as follows. Knowing this, it was necessary to start preparing for these events, including the SMO"<sup>6</sup>.*

Nevertheless, there are many indications that the President has launched a process that some experts have called a "revolution from above"; and this process is already in full swing. However, in our opinion, so far it is **not revolutionary, but evolutionary**, which is much more typical

*"Revolution is not a way out of the crisis, but a way to worsen this crisis... shaping our approaches, we will be guided by **the ideology of healthy conservatism**"<sup>7</sup>.*

for Vladimir Putin's ideology of "healthy conservatism".

**The elements of this process were present long before the Valdai Forum and even before the start of the SMO. In fact, they took place throughout Vladimir Putin's presidential terms:**

✓ the **principle of "equidistance of all market participants from the authorities"**<sup>8</sup> (2000), thanks to which many influential oligarchs (M. Khodorkovsky\*, P. Lebedev, B. Berezovsky, V. Gusinsky, etc.) were pushed away from the opportunity to influence political decisions in the country;

✓ Vladimir Putin's **Munich Speech (February 10, 2007)**, which became a direct signal not only to the international community, but also to the domestic elites that Russia has chosen its own path of development – the path toward strengthening national sovereignty;

✓ **amendments to the Constitution of the Russian Federation initiated by the President (2020)**, which were supported by Russian society in a referendum on July 1, 2020 and largely limited the ability of the ruling elites to have any ties with the Collective West<sup>9</sup>;

✓ **a law prohibiting extremist organizations from participating in elections**<sup>10</sup> (2021); as a result, the activities of Alexei Navalny's headquarters\*\* were suspended, that is, in fact, the possibility of the negative influence of the fifth column was reduced to zero ... Moreover, we note that this was a major step in the fight against foreign agents, but far from being the only one.

\* Included in the register of foreign agents.

\*\* The activities of Navalny's headquarters were recognized as extremist and banned on the territory of the Russian Federation.

<sup>6</sup> "Direct line" with Vladimir Putin on December 19, 2024. Available at: <http://www.kremlin.ru/events/president/news/75909>

<sup>7</sup> Vladimir Putin's speech at the plenary session of the Valdai International Discussion Club on October 21, 2021. Available at: <http://www.kremlin.ru/events/president/news/66975>

<sup>8</sup> Opening remarks by Vladimir Putin at a meeting with high-level campaign workers. Available at: <http://www.kremlin.ru/events/president/transcripts/24146>

<sup>9</sup> We note that these amendments for the first time mentioned "internal threats" to the sovereignty of the Russian Federation, its independence and state integrity, which the Federation Council must combat (Article 83, paragraph "zh"); a ban on foreign citizenship and residence permits was introduced for the Prime Minister, ministers and heads of federal bodies, governors, senators, deputies and judges (Art. 110, paragraph 4).

<sup>10</sup> "On amendments to Article 4 of the Federal Law 'On basic guarantees of electoral rights and the right of citizens of the Russian Federation to participate in a referendum' and Article 4 of the Federal Law 'On elections of deputies of the State Duma of the Federal Assembly of the Russian Federation'": Federal Law 157-FZ, dated June 4, 2021.

“The State Duma approved in the second and third readings a bill on the introduction of special accounts for the income of foreign agents. The amendments, contributed **by 429 deputies** led by Speaker of the lower house of Parliament V. Volodin, **were supported unanimously.**

The law provides for **crediting to a special ruble account the income of foreign agents** from creative activities, the use of inventions and trademarks, income from the sale and rental of real estate and vehicles. In addition, interest on deposits, dividends and income from equity participation in organizations will be credited to a special account. The opening of a special account will become **mandatory** for both foreign agents and those who transfer fees to them. It will be possible to dispose of funds **only after the cancellation of the status of a foreign agent.**

The law was adopted on December 17, 2024 and will enter into force on March 1, 2025”<sup>11</sup>.

“**The late Soviet elite** did not consider sovereignty to be an absolute value, as they were passionate about the idea of joining the West as a civilization, and this required renouncing their civilization... That is why the **Russian elite** saw its main task in destroying and dismantling Russia’s sovereignty rather than preserving and protecting it...

The whole problem is that the rise of Putin and his group is not natural, but accidental, spontaneous. If Putin had been a little more understandable to Yeltsin’s group, they would never have chosen him. If there had been another person instead of Putin, we would have had a different Russia, a second Ukraine. In fact, Yeltsin’s Russia is still alive and hidden behind Putin’s back in many ways. And everyone is afraid: if Putin leaves, they will come out. Everyone understands this; and therefore, the West considers the removal of Putin to be its main goal...”<sup>13</sup>

**Thus, the evolutionary process of the renewal of the elites (or rather, creating conditions for this in the country) has been going on for almost all of the past 25 years.**

However, we should note that while Russia was “following the path until 2022” and was witnessing a “covert intervention”, often “**the logic of circumstances was stronger than the logic of his [President’s] intentions**”<sup>12</sup>.

After all, the circumstances were such that against the background of the post-Soviet elites who were “descendants” of the elites of the late Soviet era, that is, having deep, one might say, historical roots, in the system of public administration, only

the President and only a few people in his inner circle were (as experts note) “the main customers for the strategy of sovereignty”<sup>14</sup>.

**There were simply no other elites in the President’s entourage**, and the country had to be governed one way or another. And not just to be governed, but first (in the 2000s) it was necessary to literally save Russian statehood after the crisis of the “turbulent 1990s”, and then (after Vladimir Putin’s Munich Speech on February 10, 2007, in which he actually challenged the entire Collective West) to resist numerous and diverse efforts<sup>15</sup> of United States and its satellites, undertaken in order to restrain the further strengthening of Russia’s national sovereignty and to return it to the state of a

<sup>11</sup> The State Duma deprived foreign agents of income in Russia. Available at: <https://dzen.ru/a/Z2FcfJu3iHWU9NJy?ysclid=m4vcod89m4435449063>

<sup>12</sup> Batchikov S. When the bridges have been burned. Available at: [https://zavtra.ru/blogs/kogda\\_mostoi\\_sozhzheni?ysclid=m4s3fh3p6b44886535](https://zavtra.ru/blogs/kogda_mostoi_sozhzheni?ysclid=m4s3fh3p6b44886535)

<sup>13</sup> Khaldey A. Transfer and the sovereignty strategy: Customers and performers. Available at: [https://zavtra.ru/blogs/transfer\\_i\\_strategiya\\_suvereniteta\\_zakazchiki\\_i\\_ispolniteli?ysclid=m4mqpbqhin219737568](https://zavtra.ru/blogs/transfer_i_strategiya_suvereniteta_zakazchiki_i_ispolniteli?ysclid=m4mqpbqhin219737568)

<sup>14</sup> Ibidem.

<sup>15</sup> Such efforts included an attempt to arrange a “color revolution” in Russia by organizing mass protests in 2011–2012, collectively known as the Bolotnaya protests; the coup d’etat in Ukraine in 2014; economic sanctions; anti-Russian information policy; the desire to inflict a “strategic defeat” on Russia after the start of the SMO, etc.

“gas station masquerading as a country”<sup>16</sup>, in which it has been after the collapse of the USSR.

In these conditions, it was in many ways necessary to preserve the situation when the President is surrounded by a “conglomerate of clans and groups that compete with each other for resources”<sup>17</sup> (or the Politburo 2.0, as analysts of the Minchenko Consulting holding described Vladimir Putin’s

entourage). But even in this situation, the head of state made targeted, but very significant, landmark decisions on a number of facts of corruption<sup>19</sup>, which were assessed by experts as nothing more than a **gradual “displacement of the liberal crowd”**<sup>20</sup>.

Later, during the “direct line” on December 19, 2024, Vladimir Putin described this period of his activity as follows: “**I have done everything to ensure that Russia is an independent and sovereign power**”.

**“Putin was not free to do as he chose and could not act with full force. Of course, he stopped Russia on the edge of the abyss, prevented the collapse of the state and its descent into complete chaos – this was his mission....**

The steps he took in the first year of his rule are recorded in history: **he stopped the disintegration of Russia, dispersed the oligarchs, pacified the regional fronde and put Russia on a stable track, pushing it in the opposite direction from the abyss...** The rest of the years ... were not so intense, and Putin avoided decisive historical steps. **He periodically compromised with the West**, which is explained by Russia’s weakness and its unpreparedness for a direct frontal clash; and he followed the lead of the internal Atlanticist liberal lobby, implementing a course of liberal patriotism in domestic politics....

**But he did not go beyond any declarative urges, that is, he was not seriously building an internal patriotic policy. He only nominally indicated the possibility of conservative patriotic changes, while adhering to strictly liberal economic models....**”<sup>18</sup>

**Excerpt from the “direct line”  
on December 19, 2024:**

Question of the reporter (S.Rosenberg, BBC News): “... do you believe you have taken care of Russia?”

Vladimir Putin’s answer: “**Yes. I believe I have not just taken care of it, but I believe we have stepped back from the edge of the abyss, because with everything that was happening in and around Russia before and since was leading us towards a complete, total loss of our sovereignty. Without sovereignty, Russia cannot exist as an independent state....**

**I have done everything** so that Russia can be an independent and sovereign state that is capable of making decisions in its own interests, rather than in the interests of the countries that were dragging it towards them, patting it on the back, only to use it for their own purposes”<sup>21</sup>.

<sup>16</sup> U.S. Senator John McCain. Available at: <https://russian.rt.com/inotv/2014-03-16/Makkejn-Rossiya---eto-benzokolonka>

<sup>17</sup> Vladimir Putin’s Big Government and the Politburo 2.0: The Minchenko Consulting report. August 2012. Available at: <https://minchenko.ru/analitika/?curPos=65>

<sup>18</sup> Svitneva E. Experts: Chernyakhovsky, Shurygin, Delyagin, Ivashov, Vasserman, Korovin – about the “New Putin” and what we can expect from him. Available at: [https://ruskline.ru/opp/2013/2/28/eksperty\\_chernyahovskij\\_shurygin\\_delyagin\\_ivashov\\_vasserman\\_korovin\\_o\\_novom\\_putine\\_i\\_o\\_tom\\_chno\\_nam\\_ot\\_nego\\_ozhidat/](https://ruskline.ru/opp/2013/2/28/eksperty_chernyahovskij_shurygin_delyagin_ivashov_vasserman_korovin_o_novom_putine_i_o_tom_chno_nam_ot_nego_ozhidat/)

<sup>19</sup> For example:

✓ November 28, 2013, a criminal case was opened against former Russian Defense Minister Alexander Serdyukov on suspicion of negligence that caused damage in the amount of 56 million rubles;

✓ November 14, 2016, for the first time in the history of Russia, acting Minister of Economic Development A. Ulyukayev was detained (for a bribe of 2 million USD);

✓ Governors V. Yurchenko (Novosibirsk Region, 2014), A. Khoroshavin (Sakhalin, 2015), N. Denin (Bryansk Region, 2015), V. Gaizer (Komi, 2015), N. Belykh (Kirov Region, 2016), A. Solovyov (Udmurtia, 2017) and many others were arrested as well.

<sup>20</sup> Delyagin M. (source: Nakanune.Ru. March 4, 2013. Available at: <https://www.nakanune.ru/articles/17523/>).

<sup>21</sup> “Direct line” with Vladimir Putin on December 19, 2024. Available at: <http://www.kremlin.ru/events/president/news/75909>

In a sense, **the President’s announcement of the beginning of the SMO became part of the evolutionary process of elites renewal**, since after that many representatives of the country’s political, economic, and cultural elites, most closely associated with the West, simply fled, and in Russia (for objective reasons dictated by the war with the West) **conditions began to be actively created** in which there is simply no place for those elites who openly sympathize with the West or are associated with it.

What has changed since the beginning of the SMO?

First, the SMO launched an active phase of a global process of the world’s transition from a unipolar to a multipolar form of existence, a struggle of many countries to overcome the colonialist hegemony of the United States. **Thus, the struggle for strengthening national sovereignty has ceased to be the goal of Vladimir Putin alone and only within Russia; it has begun to acquire a global character (as evidenced, for example, by the dynamic expansion of the BRICS association)**<sup>22</sup>.

Second, under the pressure of external threats to national security from the Collective West, the President’s ability to make any compromises with the domestic liberal-minded elites has actually “been reduced to zero”. Every flaw, or even outright sabotage, on the part of the managerial elites in the implementation of the instructions of the head of state in the conditions of the SMO acquires the character of **a direct internal threat to the existence of Russian statehood, which is as important in its consequences as an external threat.**

“The beginning of the SMO, which exposed the real facts and revealed a monstrous accumulation of lies in all reports that presented joyful pictures of what was going on to the top of the government, clearly showed the scale of betrayal by individual representatives of the bureaucratic, cultural, media and business elite... Many of those who left were hiding behind an anti-war position, although in fact they were fleeing from the criminal cases brought against them. As it turned out, while “honestly” working in Russia, they all always believed that their place was not here, among the former soviets, but there – in the civilized countries of the golden billion...”<sup>23</sup>.

“Today, the task of purging the elite from representatives of the fifth column at all levels of government (who hate the president and despise the patriotic upsurge in society) is facing the president in full growth. In fact, today it is almost the main striking force fighting against us!... to ensure genuine sovereignty, at least three interrelated conditions must be fulfilled: 1) renewal/purge of the elite, 2) change of the economic model, and 3) ideological mobilization. Recent decisions by the president show that he understands this need very well”<sup>24</sup>.

This was clearly demonstrated by such episodes as, for example, the retreat of Russian troops from Kharkov and the Kherson Region in September – November 2022, the mutiny of the Wagner PMC in June 2023, and the invasion of the Ukrainian Armed Forces in the Kursk Region in August 2024...

<sup>22</sup> The proposal to launch the BRICS expansion process was received from China in May 2022. By August 2023, about 20 countries had applied to join the organization. Currently, about 30 countries have submitted applications.

<sup>23</sup> Batchikov S. When the bridges have been burned. Available at: [https://zavtra.ru/blogs/kogda\\_mosty\\_sozhzheni?ysclid=m4s3fh3p6b44886535](https://zavtra.ru/blogs/kogda_mosty_sozhzheni?ysclid=m4s3fh3p6b44886535)

<sup>24</sup> Ibidem.

**Thus, after the start of the SMO, the process of renewal of the elites did not begin, but only intensified.** Especially after Vladimir Putin received unconditional public support on March 17, 2024 and began his fifth presidential term until 2030.

According to the Central Election Commission of the Russian Federation, on March 17, 2024, the number of voters who took part in the presidential election amounted to 87.58 million people, **of which almost 77 million (87%) voted for Vladimir Putin.**

Compared to the previous presidential election held on March 18, 2018, the number of those who voted for Vladimir Putin **increased by 14 million (from 74 to 88 million).**

Compared to Vladimir Putin's first presidential election (March 23, 2000), it almost doubled, **by 37 million people (from 40 to 76 million).**

It was at this time (and after Vladimir Putin's inauguration on May 7, 2024) that the following **practical** tools for the renewal of the elites emerged:

**1. The "Time of Heroes" program**, which Vladimir Putin first announced on February 29, 2024 in his Address to the Federal Assembly of the Russian Federation<sup>25</sup> and the participants of which **already** occupy senior positions in the administration system<sup>26</sup>.

*"We shouldn't expect that the former participants of the SMO will easily and quickly turn into new elitists and, as such, completely replace the former discredited "elite". Successful military service is not at all a guarantee of equally successful fulfillment of relevant tasks in other fields of activity. **But it is important that, having taken leading positions in the country, the former participants of the SMO can become a kind of "patriotic filter" that will strictly filter out everything that runs counter to the interests and needs of our Motherland and its future**"<sup>27</sup>.*

<sup>25</sup> Presidential Address to the Federal Assembly of the Russian Federation on February 29, 2024. Available at: <http://www.kremlin.ru/events/president/news/73585>

<sup>26</sup> Some participants of the "Time of Heroes" program who have already been appointed to senior positions in the administration system:

September 8 – Roman Kulakov became a deputy of the Legislative Assembly of Sevastopol.

September 14 – Artur Orlov was appointed head of "Dvishenie pervykh" youth movement.

September 17 – Alexey Kondratiev became a senator of the Russian Federation.

September 18 – Vladimir Saibel became Deputy Head of the Social Development Department of Russian Railways.

September 20 – Alexander Surazov became Head of the Committee on Physical Culture and Sports of the Altai Republic.

September 20 – Konstantin Yashin became Head of "Samara" Research and Production Center for Unmanned Aircraft Systems.

September 23 – Igor Yurgin was appointed Acting Minister of Youth Affairs and Social Communications of the Republic of Sakha (Yakutia).

September 23 – Zaur Gurtsiev became First Deputy Head of Stavropol.

September 25 – Evgeny Chintsov became Head of the Nizhny Novgorod City Duma.

October 2 – Artyom Zhoga was appointed Plenipotentiary Representative of the President of the Russian Federation in the Ural Federal District.

November 4 – Evgeny Pervyshov was appointed acting head of the Tambov Region.

November 5 – Maria Kostyuk (head of the "Time of Heroes" program) was appointed Acting Governor of the Jewish Autonomous Region.

December 2 – Pavel Yakushev was appointed Advisor to the Deputy General Director of ROSATOM State Corporation.

December 3 – Nikolai Korolev became member of the Government of Saint Petersburg.

December 11 – Kirill Losunchukov assumed the position of Deputy Minister of Investment, Industry and Science of the Moscow Region.

<sup>27</sup> Filatova V. The end of the era of "golden toilets": will front-line soldiers be able to replace oligarchs in government positions (opinion of A. Rozhnov, Doctor of Sciences (Law) at the Financial University under the Government of the Russian Federation). Available at: <https://vm.ru/politics/1123591-konec-epohi-zolotykh-unitazov-cmogut-li-frontoviki-zamenit-oligarhov-nagodarstvennyh-postah>

Moreover, we should note that on December 14, 2024, at a meeting of the 22nd Congress of the United Russia Party, it was decided to include a significant number of SMO participants in the supreme and general councils of the party, and the RF President proposed to launch programs similar to the Time of Heroes program in the regions of the Russian Federation. Some experts drew attention to the fact that it is **“United Russia that has the strategic task ... to form a new managerial and indeed any other elite from those who participated in the SMO”**<sup>28</sup>.

**2. A number of personnel decisions made by the President in relation to the leadership positions of the “power block” are also among the practical tools for the renewal of the elites.** First of all, this concerns the appointment of Andrei Belousov as Minister of Defense of the Russian Federation, whom experts call not just “the person closest to the president, in charge of industrial strategy and economic

*“The conversation about the “new elite” becomes especially relevant in the perspective of life after the end of the Russian-Ukrainian conflict. It is very difficult to talk about deadlines and also about what kind of end it will be (for example, whether there will be a peace treaty, what compromises the parties will make). It is important that when this happens, the SMO participants will be integrated into more than just leadership renewal programs. They will inevitably find themselves involved in domestic political processes, both as candidates for governor and mayor, and as deputies at various levels”*<sup>29</sup>.

strategy”, but “an outstanding intellectual, patriot and, of course, devoted to the idea of a strong, powerful state”<sup>30</sup>. State Duma deputy M. Delyagin noted: “There are probably no more economists left in power, except Andrei Belousov”<sup>31</sup>.

“The updated General Council of the United Russia party includes two dozen SMO participants, four of them are participants in the first stream of the presidential program “Time of Heroes” ... The Supreme Council of United Russia includes 9 SMO participants, among which there are 6 participants of the ‘Time of Heroes’ program”<sup>32</sup>.

*“The guys who fought at the front proved their worth in battle. I am sure that they will not let us down in the future, they will fight for the result and achieve it.... **In this regard, I propose and consider it necessary to expand the federal project ‘Time of Heroes’:** to launch similar programs in the regions, as has already been done in the Stavropol Territory, the Belgorod, Voronezh, Ryazan, Samara, Tula regions and in the Khanty-Mansi Autonomous Area. I ask the party to actively engage in this work. I’m counting on you very much that it won’t be formal: you need to work, look for people, and help them organize their training”*<sup>33</sup>.

<sup>28</sup> D. Garmonenko At the 22nd Congress, United Russia established its monopoly. Available at: [https://www.ng.ru/politics/2024-12-15/3\\_9156\\_er.html?ysclid=m4v095j3gr567466809](https://www.ng.ru/politics/2024-12-15/3_9156_er.html?ysclid=m4v095j3gr567466809)

<sup>29</sup> About the new elite and SMO participants. Available at: [https://www.ng.ru/editorial/2024-12-10/2\\_9153\\_red.html?PREVIEW\\_SECRET\\_KEY=d749b7432669ec97b204f339fe30db9a&ysclid=m4qso1pafc408303892](https://www.ng.ru/editorial/2024-12-10/2_9153_red.html?PREVIEW_SECRET_KEY=d749b7432669ec97b204f339fe30db9a&ysclid=m4qso1pafc408303892)

<sup>30</sup> Dugin on Belousov’s appointment: “This grandiose decision fundamentally changes everything”. Available at: <https://dzen.ru/a/ZkE83HyQ2AoRExHs>

<sup>31</sup> Delyagin M. The change of the Minister of Defense is a reaction to people’s indignation. Available at: <https://www.business-gazeta.ru/article/633476>

<sup>32</sup> Ivanov A. The 22nd Congress of United Russia: SMO participants are included in the governing bodies of the party in power. Available at: [https://zavtra.ru/events/xxii\\_s\\_ezd\\_edinoj\\_rossii\\_uchastniki\\_svo\\_vklyucheni\\_v\\_sostav\\_rukovodyashih\\_organov\\_partii?ysclid=m4ths4tziw610909503](https://zavtra.ru/events/xxii_s_ezd_edinoj_rossii_uchastniki_svo_vklyucheni_v_sostav_rukovodyashih_organov_partii?ysclid=m4ths4tziw610909503)

<sup>33</sup> Vladimir Putin’s speech at the 22nd Congress of the United Russia All-Russian Political Party on December 14, 2024. Available at: <http://www.kremlin.ru/events/president/news/75881>

**May 14, 2024** – according to the Presidential Decree<sup>34</sup>, First Deputy Chair of the Government of the Russian Federation A.R. Belousov was appointed Minister of Defense of the Russian Federation.

**May 14, 2024** – according to the Presidential Decree<sup>35</sup>, General of the Army A.V. Bortnikov was reassigned to the post of Director of the FSB, he has held this post since May 12, 2008.

**October 14, 2024** – Vladimir Putin signed a law<sup>36</sup>, according to which the head of state can extend the term of office for the chair of the Investigative Committee of the Russian Federation, who has reached the age limit, for a year<sup>37</sup>.

**October 28, 2024** – the President extended the term of service of A.I. Bastrykin until August 27, 2025<sup>38</sup>. The Investigative Committee became an independent agency on January 15, 2011. It was created on the basis of the Investigative Committee under the Prosecutor's Office of Russia, and A.I. Bastrykin was its head from the very beginning.

**December 20, 2024** – on the recommendation of the President of the Russian Federation, I.V. Krasnov was reassigned to the post of Prosecutor General.

We emphasize that it is with the help of these people that the “cleansing” of today’s elites is going on. Some of these examples are presented in *Insert 1*, but, as experts note, “**it makes no sense to list by name all those arrested** (there are already 20 generals who took bribes), the number of criminal cases launched, as well as those who quickly and quietly fled abroad. Everyone knows their names and amounts of the stolen goods. These are former deputy prime ministers, ministers, heads of state corporations, MPs, and celebrities”...<sup>39</sup>

By collecting information, and then launching more and more criminal cases against “the high and the mighty” on a daily basis, the “power block” is **clearing the way** for the arrival of new elites who are being trained within the “Time of Heroes” program. Thus, it is a two-way process.

*“Employees of the Investigative Committee (IC) opened 497 criminal cases on crimes in the field of the military-industrial complex (MIC) and the state defense order for eight months of 2024. Last year, during the same period, the Investigative Committee initiated 357 criminal cases of the same nature”<sup>40</sup>. That is, this indicator has increased by 39%.*

<sup>34</sup> About the Minister of Defense of the Russian Federation: Presidential Decree 383, dated May 14, 2024.

<sup>35</sup> About the Director of the Federal Security Service of the Russian Federation: Presidential Decree 386, dated May 14, 2024.

<sup>36</sup> On Amendments to Article 30 of the Federal Law “On the Investigative Committee of the Russian Federation”: Federal Law 348, dated October 14, 2024.

<sup>37</sup> Previously, the age limit for service in the Investigative Committee was 65 years, while by decision of the heads of the investigative bodies, this period could be extended to 70 years. On August 27, 2024, A.I. Bastrykin turned 71.

<sup>38</sup> On extending the term of federal public service: Presidential Resolution 348, dated October 28, 2024.

<sup>39</sup> Batchikov S. When the bridges have been burned. Available at: [https://zavtra.ru/blogs/kogda\\_mosty\\_sozhzheni?ysclid=m4s3fh3p6b44886535](https://zavtra.ru/blogs/kogda_mosty_sozhzheni?ysclid=m4s3fh3p6b44886535)

<sup>40</sup> The Investigative Committee has initiated almost 500 cases of crimes in the field of defense industry and state defense order. Available at: <https://www.vedomosti.ru/society/news/2024/09/17/1062766-sk-vozbudil-pochti>

Insert 1

**Some facts of arrests and detentions carried out by law enforcement agencies in 2024<sup>41</sup>**

<p><b>February 9, 2024</b> – I. Pechurin, a federal judge of the Odintsovo City Court, was detained. According to experts, “this is just the beginning, a precedent for breaking, changing the most bony, most closed system of our society – the judicial system”<sup>42</sup>.</p>
<p><b>April 24, 2024</b> – former first deputy chai of the Moscow Region Government, S. Strigunkova, has been arrested. Since February 2014, she has served as Deputy Minister of Economy of the Moscow Region. According to A. Bastrykin, “in 2021–2023, Strigunkova and her accomplices received bribes from the heads of construction companies in the amount of 5–10% of the amounts of concluded state contracts.... The total amount of bribes amounted to more than 170 million rubles. In total, more than 13 people were brought to criminal responsibility in the criminal case, including the heads of construction organizations”<sup>43</sup>.</p>
<p><b>June 11, 2024</b> – S. Kharitonov, former head of the Central Housing and Communal Services Department of the Ministry of Defense, was sentenced to 9 years in a high-security penal colony (for taking a bribe in the amount of 65 million rubles).</p>
<p><b>December 6</b> – D. Mikhailov, general director of Lenbytkhim LLC, was detained in the case of large-scale fraud in the supply of property for the needs of the Ministry of Defense. According to the press service of the military investigative bodies of the Investigative Committee of Russia, the defendant is accused of fraud in the execution of the state defense order (Part 4 of Article 159 of the Criminal Code of the Russian Federation), more than 50 million rubles were stolen.<sup>44</sup></p>
<p><b>December 9</b> – I. Grabin, ex-deputy general director of Kursk Region Development Corporation JSC, was arrested. <b>From February 2023 to September 2024, the ex-official was assigned administrative and economic functions in the corporation related to the management, disposal of property and finances.</b> “He is accused of unjustifiably spending funds intended for the construction of fortifications in the Kursk Region (Part 3 of Article 285 of the Criminal Code of the Russian Federation, “Abuse of official authority”)<sup>45</sup>.</p>

<sup>41</sup> We have cited facts about many other detentions and arrests of high-ranking officials (including former deputy defense ministers T. Ivanov, D. Bulgakov, and head of the Main Personnel Directorate of the Ministry of Defense of the Russian Federation Yu. Kuznetsov, etc.) in previous articles. See, for example:

Ilyin V.A., Morev M.V. (2024). Special military operation and the internal mobilization of society and elites. *Economic and Social Changes: Facts, Trends, Forecast*, 17(5), 9–39.

Ilyin V.A., Morev M.V. (2024). “Returning the State to its native harbor”. On the issue of ensuring the continuity of sovereign development. *Economic and Social Changes: Facts, Trends, Forecast*, 17(4), 9–38.

Ilyin V.A., Morev M.V. (2024). The fifth political cycle of Russian President Vladimir Putin: “Cosmetic repairs” for crony capitalism or a transition to “social capitalism”? *Economic and Social Changes: Facts, Trends, Forecast*, 17(3), 9–35.

<sup>42</sup> Frolov Yu.A. We live in a unique time of renewal and unique purges. Available at: <https://m.ok.ru/video/7918837434995?ysclid=m50rvkmj8xl11721205>

<sup>43</sup> RIA - novosti. December 9, 2024. Available at: [https://ria.ru/20241209/strigunkov-1988155864.html?utm\\_source=yxnews&utm\\_medium=desktop&utm\\_referer=https%3A%2F%2Fdzen.ru%2Fnews%2Fstory%2F5261b8d-7120-53fe-988f-4621eb85a6ea](https://ria.ru/20241209/strigunkov-1988155864.html?utm_source=yxnews&utm_medium=desktop&utm_referer=https%3A%2F%2Fdzen.ru%2Fnews%2Fstory%2F5261b8d-7120-53fe-988f-4621eb85a6ea)

<sup>44</sup> *Izvestia*. December 9, 2024. Available at: [https://iz.ru/1804301/2024-12-09/sud-arestoval-eks-zamgendirektora-ao-korporatcia-razvitiia-kurskoi-oblasti?utm\\_source=yxnews&utm\\_medium=desktop&utm\\_referer=https%3A%2F%2Fdzen.ru%2Fnews%2Fstory%2F5261b8d-7120-53fe-988f-4621eb85a6ea](https://iz.ru/1804301/2024-12-09/sud-arestoval-eks-zamgendirektora-ao-korporatcia-razvitiia-kurskoi-oblasti?utm_source=yxnews&utm_medium=desktop&utm_referer=https%3A%2F%2Fdzen.ru%2Fnews%2Fstory%2F5261b8d-7120-53fe-988f-4621eb85a6ea)

<sup>45</sup> Ibidem.

**3. October 31, 2024, the Constitutional Court of the Russian Federation decided to lift the statute of limitations on the real estate acquired through corrupt proceeds.** According to lawyers, this gives the right to legally confiscate large assets acquired in the 1990s. Moreover, the important point is that “in

The Constitutional Court of the Russian Federation has decided that there is no statute of limitations for the return to the state of the property that was previously acquired through corrupt proceeds.

Voronin V. (lawyer, managing partner of Altavista Law Firm): “*The running of the statute of limitations will now change significantly. They will be calculated not from the moment they are committed, but when they are revealed by the competent authorities. Thus, in fact, the statute of limitations for foreclosure on such property has been annulled.... This gives us the right to assume the beginning of de-privatization, that is, the legalized confiscation of large assets acquired in the 1990s and their transfer to state revenue*”.

Rosenblat E. (head of the complex litigation practice, lawyer at the Moscow Bar Association Aronov & Partners): “*Former officials cannot hide behind the expiration of the statute of limitations in order to preserve illegally acquired property*”<sup>46</sup>.

order to confiscate wealth, there is no need to prove corruption itself, the very fact that there is wealth is enough... if an official did not privatize in the 1990s, but was rapidly getting rich, then their wealth can be confiscated even today”<sup>47</sup>.

According to a number of experts, this decision is, **perhaps, the most important and useful since the formation** of the Constitutional Court<sup>48</sup>. In fact, it sets a precedent for the legitimate implementation of another very important area of activity within the framework of the elite renewal process, namely..

“October 31, the Constitutional Court of Russia made perhaps the most important and useful decision since its formation – it announced the abolition of the statute of limitations on corruption cases, along with the confiscation of property in favor of the state. High-ranking thieves who acquired their fortune back in the 1990s will no longer sleep peacefully – now the competent authorities can come for them. And future corrupt officials have been given a kind of ‘black mark’ – a signal has been sent that there will be no mercy in either 10 or 100 years”<sup>49</sup>.

<sup>46</sup> Trifonova E. The Constitutional Court has set specific historical conditions for private property. Available at: [https://www.ng.ru/politics/2024-10-31/3\\_9127\\_court.html?ysclid=m4chaykpzj908507909](https://www.ng.ru/politics/2024-10-31/3_9127_court.html?ysclid=m4chaykpzj908507909)

<sup>47</sup> Kulikov V., Svinova E. The abolition of the statute of limitations for corrupt officials by the Constitutional Court will not change the results of privatization. Available at: <https://rg.ru/2024/11/01/otkuda-dengi.html> (opinion of M. Spiridonova, member of the Russian Bar Association, managing partner of Leges Bureau).

<sup>48</sup> Ibidem.

<sup>49</sup> Corrupt officials were given a “black mark”: There is no more statute of limitations in cases of robbery in Russia. Available at: [https://tsargrad.tv/investigations/korrupcioneram-vydali-chjornuju-metku-po-delam-o-grabezhe-rossii-bolshe-net-srokov-davnosti\\_1079834?ysclid=m4s3mkihby644009635](https://tsargrad.tv/investigations/korrupcioneram-vydali-chjornuju-metku-po-delam-o-grabezhe-rossii-bolshe-net-srokov-davnosti_1079834?ysclid=m4s3mkihby644009635)

**4. Return of privately owned enterprises to the State.** According to experts, the “*process of ‘mild’ nationalization began back in February 2022, but only two years after the SMO did the authorities decide on tougher measures...*”<sup>50</sup>, what was signaled by the Presidential Decree on the transfer of the Ulyanovsk Machine Tool Plant to state ownership<sup>51</sup>.

“Since the beginning of 2022, the Prosecutor General’s Office has been conducting about 50 cases related to large businesses. That is, almost all of them are connected with strategic enterprises that should become state-owned....

Three plants in Chelyabinsk (Kuznetsk Ferroalloys, Serovsky Ferroalloy Plant and Chelyabinsk Electrometallurgical Combine JSC) should return to state ownership... the enterprises were sold for an old song back in 1995. The controlling stake belonged to the oligarch Yuri Antipov, and the value of all securities is estimated at 168 billion rubles as of 2022.

The de-privatization of business in Chelyabinsk was carried out very quickly. All it took was to file a lawsuit. In early February 2024, the Arbitration Court seized all the property....”<sup>52</sup>

Thus, according to some analysts, “things are coming true in Russia that have seemed impossible since the time of Yeltsin. The words about the revision of the results of privatization migrated from posters to resolutions of the Prosecutor General’s

Office and news agency reports... Factories are becoming national property, and their former owners can no longer solve anything with suitcases full of money in offices of top officials”<sup>53</sup>.

According to the Prosecutor General of the Russian Federation I. Krasnov, “since 2022, **more than 100 enterprises, whose assets are estimated at 1.3 trillion rubles, have been returned to state ownership in Russia through court action**”<sup>54</sup>.

Thus, elements of the elites renewal process were emerging before the Valdai Forum in 2024. However, while the whole world is going through a transitional period of formation change (from a unipolar to a multipolar form of existence) and while the outcome of this period largely depends on the strength of weapons, we cannot say with confidence that patriotic forces in Russia “*prevailed over the liberal*” (and “*precisely for this reason*”, as some experts note, “*Putin cannot get rid of the liberals*” who are closely associated with the West<sup>55</sup>). So far, SMO goals have not been achieved; while the whole world is in an active stage of civilizational conflict, accompanied by the build-up of military potential, the preparation of countries for World War III, and the growing threat of the use of nuclear weapons, a lot depends on the situation “on the battlefield”.

**First of all, the key question that quite rightly worries many experts is how the quality of our civilization will change in the next 50–70 years.**

<sup>50</sup> Trishin M. The great nationalization has begun. Which defense enterprises have already been returned to the state? Available at: <https://dzen.ru/a/ZdhSQvPOARfIdZ-M?ysclid=m4mle1k0hb652869732>

<sup>51</sup> On amendments to the list of movable and immovable property, securities, shares in the authorized (pooled) capitals of Russian legal entities and property rights in respect of which temporary management is introduced, approved by Presidential Decree 302, dated April 25, 2023; Presidential Decree 133, dated February 19, 2024.

<sup>52</sup> Trishin M. The great nationalization has begun. Which defense enterprises have already been returned to the state? Available at: <https://dzen.ru/a/ZdhSQvPOARfIdZ-M?ysclid=m4mle1k0hb652869732>

<sup>53</sup> Revnvtsev A. Russians have been waiting for this for 30 years: The state is taking away factories from the oligarchs. Available at: [https://tsargrad.tv/articles/russkie-zhdali-jetogo-30-let-gosudarstvo-zabiraet-u-oligarhov-i-zavody\\_963670](https://tsargrad.tv/articles/russkie-zhdali-jetogo-30-let-gosudarstvo-zabiraet-u-oligarhov-i-zavody_963670)

<sup>54</sup> More than 100 enterprises have been nationalized in Russia since 2022. Available at: <https://finance.rambler.ru/business/52889621-v-rossii-s-2022-goda-bylo-natsionalizirovano-bolee-100-predpriyatij/>

<sup>55</sup> Delyagin M. Why Putin can’t get rid of the liberals. Available at: <https://deita.ru/article/479377>

*“After the end of the hot phase of the Russian-Ukrainian conflict, **major countries will gather and draw new borders, establish new rules, because no one in the world wants to constantly fight, there will be a ‘new Yalta conference’**”<sup>56</sup>.*

*“The Ukrainian conflict will launch a series of political processes that are likely **to change the quality of our civilization for the next 50–70 years...**”<sup>57</sup>*

In addition, we must not forget that more than 30 years, from the moment of the collapse of the Soviet Union to the moment when Vladimir Putin announced the start of the special military operation (that is, from 1991 to 2022, during which the new post-Soviet Russia was in a state of “covert intervention”), could not pass without a trace. According to experts, “... the enemy miscalculated plans to orchestrate an Orange revolution for us, **but they left a powerful fifth column in our rear**”<sup>58</sup>.

*“There are at least 38,000 unfinished construction projects in the defense industry. That’s trillions of rubles. The question is, where is the money? After all, it was allocated from the state budget, relevant officials were accountable to the President... **Any ministry is rotten by now, not just the Ministry of Defense. An audit is needed everywhere... and it has been started everywhere**”<sup>59</sup>.*

This is clearly demonstrated in a number of specific episodes of behavior and activities of individual representatives of the elites in the economy, politics, culture... (*Insert 2*).

The facts shown in *Insert 2* largely confirm the experts’ confidence that the elements of the elites renewal process “will definitely **meet with fierce, desperate resistance**”<sup>60</sup>.

The head of state and the Government of the Russian Federation continue to actively implement concrete steps and make specific management decisions that create conditions for a comprehensive process of personnel changes in all key areas of life in accordance with the new conditions that have come after February 2022: in the economy, education, and national defense capability (*Insert 3*).

O. Matveychev (State Duma Deputy, Deputy Chair of the Committee on Information Policy): “As a result of amendments to the Constitution, some of the president’s powers were transferred to the State Duma. The idea was for ministers to be more attuned to working with the Duma and to become accustomed to the practice of public reporting. **Ministers and deputy prime ministers should understand that if society does not like their work, it can seriously complicate their future careers.** Therefore, the deputies of the State Duma regularly meet with government officials, the leaders of the factions meet with the Prime Minister.”

“In the old days, many ministers... **worked for the sake of reporting, in order to show their work to the president... if we see unpopular ministers whose work raises questions, they will immediately be attacked by opposition factions. This will already be a signal to the ministers that the ruling party can tell them ‘no’**”<sup>61</sup>.

<sup>56</sup> Aslamova D. Armenians are told that Russians are “white Turks”. Opinion of T. Kocharyan (media expert, editor-in-chief of Alpha News). Available at: <https://www.pravda.ru/world/1918773-armeniya/>

<sup>57</sup> Vinnik D. A thousand days of my war. Available at: [https://zavtra.ru/blogs/zapiski\\_politrabotnika\\_tisyacha\\_dnej\\_moej\\_vojni?ysclid=m50s0let49974933563](https://zavtra.ru/blogs/zapiski_politrabotnika_tisyacha_dnej_moej_vojni?ysclid=m50s0let49974933563) (Vinnik D. – Doctor of Sciences (Philosophy), professor at the Financial University under the Government of the Russian Federation).

<sup>58</sup> Fenenko A. The world after the SMO. Available at: [https://russiancouncil.ru/analytics-and-comments/analytics/mir-posle-svo/?sphrase\\_id=152648206&ysclid=m03fqklwaj437058663](https://russiancouncil.ru/analytics-and-comments/analytics/mir-posle-svo/?sphrase_id=152648206&ysclid=m03fqklwaj437058663)

<sup>59</sup> Frolov Yu.A. We live in a unique time of renewal and unique purges. Available at: <https://m.ok.ru/video/7918837434995?ysclid=m50rvkmj8x111721205>

<sup>60</sup> Popov D. Putin acknowledged the betrayal of the elites: The revolution from above has begun. Available at: <https://www.mk.ru/politics/2024/11/08/putin-priznal-predatelstvo-elit-nachalas-revolyuciya-sverkhu.html?ysclid=m4mavvlteb25960798>

<sup>61</sup> A deputy on new powers of the State Duma: “Parliament may reject the candidacy of a minister”. Available at: <https://fedpress.ru/article/3307918>

**Some examples of the activities of liberal-oriented elites in economics, politics, and culture**

**October 29–31, 2024** the Necropolis World Russia exhibition was held in Moscow. According to Ye. Andreeva, executive director of the Union of Funeral Organizations and Crematoriums, “the purpose of the exhibition was initially to create, revive and develop funeral culture, and modern PR methods attract young people” “*Death should be beautiful*” is one of the messages of the exhibition organizers<sup>62</sup>. However, many experts noted that “no one feels tragic emotions here at all. The situation is rather the opposite”<sup>63</sup>. “*Compared to this event, Ivleeva’s ‘naked’ party is just a children’s matinee*”<sup>64</sup>. It is noteworthy that the show took place in the Crocus Expo Hall, which is located next to Crocus City Hall, where a terrorist attack took place in March 2024, which claimed the lives of more than 140 people.

**“In the beginning of November, a wave of public protests swept through the Kursk Region: those who had to flee the occupied territories were outraged because of the red tape in obtaining new housing..** In November, Alexander Bogachev (head of Sudzhansky District) and Marina Degtyareva (head of Korenevsky District) were dismissed<sup>65</sup>.

**December 5, the Presidential Decree was issued, according to which<sup>66</sup> A. Khinshstein was appointed acting governor of the Kursk Region** (he replaced former Governor A. Smirnov). December 9, at an operational meeting with the regional government, A. Khinshstein announced: “Due to the requirements of the law, in connection with the resignation of the previous head of the region, I signed a decree as acting head of government on the **resignation of the government**; therefore, colleagues, I inform you that you are working as acting heads”<sup>67</sup>. A. Khinshstein also announced his intention to **apply to the Prosecutor’s Office and the Accounting Chamber for an audit of previous activities in the region**<sup>68</sup>.

**November 2024: “The latest calculations in the context of sectors show that in 2024, producer price growth accelerated due to an increase in the Central Bank rate by about 5%, and due to an increase in wages – by only 4%. In recent months, scientific evidence has emerged in the Russian Federation of the negative impact of high loan rates on macro-economic indicators. Business leaders confirm that they are reducing production programs and postponing investment projects”<sup>69</sup>. “The Central Bank and the Ministry of Finance are headed by people who are far from being stupid and by no means deaf; and it is simply impossible to imagine that they do not understand what they have been doing and are doing, or do not understand the essence and meaning of numerous sensible proposals. It is obvious that the decisions they make are purely political”<sup>70</sup>. Surely the leadership of the Central Bank understood what they were doing, and when they ignored repeated warnings that it was impossible to keep reserves in dollars, pounds and euros, and that such reserves could be arrested at any time. Academician Glazyev, in particular, repeatedly spoke about this at meetings of the National Financial Council. The seizure of more than 300 billion USD in reserves after the start of the SMO is exactly what the Central Bank’s management has warned about many times. But as we know, no one has been held responsible for the seizure of Russia’s foreign exchange reserves....”<sup>71</sup>**

<sup>62</sup> Kuzina N. Is there really no other place for this chapiteau? Reaction to the funeral exhibition at the Crocus. Available at: <https://rodima-history.ru/2024/10/31/neuzhto-dlia-etogo-shapito-ne-nashlos-drugogo-mesta-reakciia-na-pohoronnuuiu-vystavku-u-krokus-siti-holla.html>

<sup>63</sup> Guryanov S. The rumblings of the coffin: How was the Necropolis exhibition in Moscow? Available at: <https://iz.ru/1783545/sergei-guranov/raskaty-groba-kak-proslavystavka-nekropol-v-moskve>

<sup>64</sup> Orlova A. The capital of Russian Death: A temporary necropolis was opened next to the Crocus. Available at: <https://dzen.ru/a/ZyKH3QLhRC1qGWw?ysclid=m4t4145dti0588328864>

<sup>65</sup> “To sweep through the whole hornet’s nest!”: Putin stopped the popular uprising in the Kursk Region. Available at: <https://dzen.ru/a/ZINmgn38gjzmz90?ysclid=m4gz8dndpe479307313>

<sup>66</sup> About the Acting Governor of the Kursk Region: Presidential Decree 1035, dated December 5, 2024.

<sup>67</sup> Khinshstein dismissed the government of the Kursk Region. Available at: <https://ria.ru/20241209/khinshteyn-1988122011.html?ysclid=m4tn7o1t7n1181421>

<sup>68</sup> RIA-novosti. December 9, 2024. Available at: <https://ria.ru/20241209/hinshtejn-1988107342.html?in=#>

<sup>69</sup> Sergeev M. The Central Bank’s rate provokes price increases more than wage increases. Available at: [https://www.ng.ru/economics/2024-12-12/1\\_2\\_9155\\_rate.html](https://www.ng.ru/economics/2024-12-12/1_2_9155_rate.html)

<sup>70</sup> Batchikov S. When the bridges have been burned. Available at: [https://zavtra.ru/blogs/kogda\\_mosty\\_sozhzheni?ysclid=m4s3fh3p6b44886535](https://zavtra.ru/blogs/kogda_mosty_sozhzheni?ysclid=m4s3fh3p6b44886535)

<sup>71</sup> Batchikov S. To fulfill the due. Available at: <https://dzen.ru/a/Zz2pLbpb9UDd-q4N?ysclid=m4qmpc0hg5441617476>

## End of Insert 2

**December 2024** – More than 700 employees of the Moscow Regional Ambulance Station complained to the president about the salary reduction. Since July, everyone has not received from 10 thousand rubles to 40–50 thousand rubles a month. After a new payment system for ambulance workers was launched in the Moscow Region in September, which theoretically should have increased their incomes, the exact opposite happened. Ambulance staff call this a classic “con game”: the salary was increased, and incentive payments were reduced. “The trouble is that, judging by the reports that are being sent to the ministry, everything is fine on site. But in fact, there is a big game with numbers, the purpose of which is to throw dust in the eyes and “blur” reality. Formally, there was a salary increase, but the fact that salaries did not increase at the same time remained behind the scenes. And this situation is not only in the capital... For example, the staff of the emergency department of the Komi-Permyatsky District hospital recorded a video message to the governor of the Perm Region about the critical situation in the workplace. After the salary increase from October 1 and the simultaneous abolition of 100% seniority allowances, the salary of paramedics became only 25 thousand rubles, while the situation for drivers was even worse – 21 thousand rubles. Similar situation is observed in the Samara Region... **Apparently, it is very unprofitable for someone that Russia should have a healthy nation**”<sup>72</sup>.

**December 2024** – S. Glazyev: “To bring the ruble to a stable state, it is only necessary to exclude the influence of speculative and incoming factors... **We see that Russian banks have become the main speculators today, in the absence of international speculators who used to rock the ruble exchange rate and manipulate it with the connivance of the Central Bank. We know many examples when they started buying up foreign currency and then made super profits on the revaluation of this currency, playing against the ruble, contributing to its devaluation... This is a feverish purchase of foreign currency, which is conducted by Russian banks in order to profit from the devaluation and revaluation of their currency assets. It is this component of profit that is the most important for them today. Because there’s nothing to do except buy up currency and wait for the ruble to collapse**”<sup>73</sup>.

<sup>72</sup> Banishevskaya Yu. “They brought us to our knees”: A riot of emergency doctors – people are being forced to leave in order to clear places for migrants. Available at: [https://tsargrad.tv/articles/nas-postavili-na-koleni-bunt-vrachej-skoroj-pomoshhi-ljudej-vynuzhdajut-uvolnjatsja-chtoby-raschistit-mesia-dlja-migrantov\\_1095244](https://tsargrad.tv/articles/nas-postavili-na-koleni-bunt-vrachej-skoroj-pomoshhi-ljudej-vynuzhdajut-uvolnjatsja-chtoby-raschistit-mesia-dlja-migrantov_1095244)

<sup>73</sup> Glazyev named three obvious mistakes of the authorities and made the main conclusion: “A monstrous deception”. Available at: [https://tsargrad.tv/articles/glazev-nazval-tri-ochev-idnyh-oshibki-vlastej-i-sdelal-glavnyj-vyvod-chudovishhnyj-obman\\_1093127](https://tsargrad.tv/articles/glazev-nazval-tri-ochev-idnyh-oshibki-vlastej-i-sdelal-glavnyj-vyvod-chudovishhnyj-obman_1093127)

**Many of these decisions are aimed at the future; they are changing the living conditions in the country.**

For example, the amendments to the Constitution of the Russian Federation proposed by the President back in February 2020<sup>74</sup> **today, at the end of 2024** allow the State Duma to actively insist on a law on testing migrant children in the Russian language, and the executive branch (represented by the RF Government) is forced to yield to this pressure.

**Nevertheless, the practical implementation of the decisions taken will largely depend on specific representatives of the ruling elites, as they say, “on site”.** Therefore, the President continues to draw the attention of officials to the fact that the result is important and not the reporting; in particular, this concerns the implementation of new national projects, which were presented by Chairman of the RF Government Mikhail Mishustin on December 5, 2024 and the first assessment of which is scheduled to be carried out in June 2025.

*“I would like to emphasize once again that we should not be guided by bureaucratic logic – we should lower our benchmarks in order to simplify our work for ourselves and then report back. We should not do this, it is unacceptable. Why deceive ourselves...?”*

*I would like to emphasize once again that it's not just about sums and budget discipline, which is also very important. The main thing is that visible results follow: new kindergartens and schools, repaired roads and utility networks, modernized hospitals and polyclinics, modern production facilities created from scratch and landfills eliminated, and so on....*

*I repeat: it is the opinion of citizens that is of key importance... I suggest that at the next meeting of our Council in June we assess the start of the implementation of national projects, the progress of their implementation and the first results”<sup>75</sup>.*

**December 10, 2024**, the State Duma in the first reading unanimously approved a draft law that provides for mandatory testing of Russian language proficiency among migrant children when they are admitted to schools. In case of final approval of the draft law, Article 78 of the Law “On education” will be changed. During the discussions *“Chair of the State Duma V. Volodin expressed his strong displeasure with the remarks received on behalf of the government, even using the expression “putting grit in the bearings”.* In addition, he stated that the deputies’ initiative appeared because the executive branch did not offer anything here. And the parliament, they say, feels responsible for the government, in particular for not fulfilling the relevant instructions of the RF President. Therefore, the speaker **harshly raised the issue of an early second reading before the representative of the Cabinet of Ministers in the State Duma and the Plenipotentiary representative of the President of the Russian Federation, Garri Minkh.** However, he gently but bluntly remarked: the concept of the law is supported, although there are a number of serious comments, so if they can be removed, the presidential administration will continue to support the initiative, if not, then ‘we will continue to work’. However, Volodin did not keep silent in response to this, noting to Minkh that **it was precisely the ‘leadership of the presidential administration’ that supports this; and it is what everyone should proceed from”<sup>76</sup>.**

<sup>74</sup> In particular, the Federation Council and the State Duma have the right to exercise parliamentary control, including sending parliamentary inquiries to the heads of state and local self-government bodies on issues within the competence of these bodies and officials (Art. 103.1).

<sup>75</sup> Session of the Council for Strategic Development and National Projects on December 5, 2024. Available at: <http://www.kremlin.ru/events/president/news/75762>

<sup>76</sup> Rodin I. The State Duma insists on adopting the law on the protection of schools from migrant children. Available at: [https://www.ng.ru/politics/2024-12-10/1\\_9153\\_migrants.html?ysclid=m50s580liz301258261](https://www.ng.ru/politics/2024-12-10/1_9153_migrants.html?ysclid=m50s580liz301258261)

## Insert 3

**The monitoring of regulatory legal acts (laws, decrees) signed by the RF President in the period from October 20 to December 17, 2024<sup>77</sup>**

**MEASURES TO SUPPORT SMO PARTICIPANTS AND THEIR FAMILY MEMBERS, TO DEVELOP THE MILITARY-INDUSTRIAL COMPLEX, MEASURES RELATED TO MOBILIZATION, ORGANIZATION OF MARTIAL LAW, INCREASE IN THE ANTI-TERRORIST PROTECTION OF FACILITIES**

**October 26** – Federal Law 353 “On the suspension of Part 2 of Article 43 of the Law of the Russian Federation ‘On pension provision for persons who have completed military service, service in Internal Affairs Bodies, the State Fire Service, bodies for the control of trafficking in narcotic drugs and psychotropic substances, institutions and bodies of the penal system, the National Guard troops of the Russian Federation, the enforcement authorities of the Russian Federation, and their families’”. From January 1, 2025 the amount of the monetary allowance taken into account when calculating the military pension will be 89.83% (previously it was 89.32%).

**November 9** – Federal Law 374 “On the ratification of the comprehensive strategic partnership agreement between the Russian Federation and the Democratic People’s Republic of Korea”. The Comprehensive Strategic Partnership Agreement between the Russian Federation and the Democratic People’s Republic of Korea, signed in Pyongyang on June 19, 2024, is ratified.

**November 13** – Decree 967 “On lump sum payment to certain categories of persons”. The Government of the Russian Federation has been instructed to determine, depending on the severity of the injury (wounds, contusions), the amount of a lump sum payment (up to 3 million rubles) made to a person who, in accordance with the decree of the President of the Russian Federation, receives a lump sum payment upon injury (wounds, injuries, contusions).

**November 14** – Decree 968 “On additional social guarantees for certain categories of persons”. The decree on additional payments to the SMO participants who became disabled after injury. If an injury (wound, contusion) sustained by a person who had previously received a lump sum payment upon receipt of such an injury resulted in disability, then such a person is paid 4 million rubles in a lump sum, taking into account the payment previously made upon receipt of this injury.

**November 19** – Decree 991 “On approval of the fundamentals of the state policy of the Russian Federation in the field of nuclear deterrence”. Russia’s new nuclear doctrine has been approved. The conditions for the possible use of nuclear weapons have been expanded. This includes aggression using conventional weapons not only against Russia, but also against Belarus, which poses a critical threat to their sovereignty or territorial integrity. The reason may also be the receipt of reliable information about the massive launch (take-off) of means of aerospace attack (strategic and tactical aircraft, cruise missiles, unmanned, hypersonic and other aircraft) and their crossing of the state border of the Russian Federation.

<sup>77</sup> This insert is a continuation of the monitoring of the most important regulatory legal acts signed by the President of the Russian Federation, which we have been conducting since June 2022. Thus, this monitoring has been ongoing for 19 months, its results have been published in 10 articles (the first issue of the monitoring is presented in the article: Ilyin V.A., Morev M.V. (2022). A difficult road after the Rubicon. Economic and Social Changes: Facts, Trends, Forecast, 15(3), 9–41)

**November 23 – Federal Law 391 “On amendments to the Federal Law ‘On enforcement proceedings’ and the Federal Law ‘On the specifics of fulfilling obligations under loan agreements (loan agreements) by persons called up for military service in the Armed Forces of the Russian Federation, persons participating in the special military operation, as well as members of their families and on amendments to certain legislative acts of the Russian Federation’”.** Credit obligations not exceeding 10 million rubles are terminated for citizens who have concluded no earlier than December 1, 2024 a contract for military service in the Armed Forces of the Russian Federation for a period of one year or more to perform the tasks of the special military operation, and (or) their spouses, if a judicial act on debt collection for these obligations has entered into force before the specified date and (or) a corresponding executive document has been submitted for execution.

Citizens participating in the special military operation are exempt from paying the enforcement fee levied in connection with non-fulfillment of the enforcement document in time for its voluntary execution. The period during which previously suspended enforcement proceedings cannot be resumed against citizens who have stopped participating in the SMO is increased from 30 to 180 days.

**November 23 – Federal Law 409 “On amendments to Article 15 of the Federal Law ‘On the status of military personnel’ and the Federal Law ‘On the funded mortgage housing system for military personnel’”.** The list of military personnel who can receive housing from the state has been expanded. These include contract soldiers who were foreign citizens during a certain period of military service, who served for 20 years or more, or who are subject to dismissal from service when they reach the age limit for service, for health reasons, or in connection with organizational and staff activities with a total duration of military service of 10 years or more.

**November 23 – Federal Law 410 “On amendments to the Federal Law on material liability of military personnel”.** Volunteers will be held financially liable for damage to military property on the same terms, in the same manner and in the same amounts that are provided for contractors, but taking into account a number of special features. For calculations, instead of the full salary of a monthly salary and a monthly superannuation for a contract employee, 50% of the volunteer’s salary per calendar month is applied. To compensate for damages, 20% of the salary and other payments received by the volunteer will be deducted. The total amount of all deductions from the allowance of volunteers may not exceed 50%.

**November 25 – Decree 1003 “On amendments to Presidential Decree 644, dated July 31, 2024 ‘On a one-time monetary payment to military personnel serving under contract in the Armed Forces of the Russian Federation’”.** A one-time payment of 400 thousand rubles will be received by those mobilized, sent to the National Guard troops, and military personnel serving on conscription in the National Guard troops (with the exception of cadets) who signed a contract from August 1 to December 31, 2024 to participate in their military training for a period of 1 year or more.

**November 30 – Federal Law 437 “On amendments to the Federal Law ‘On the status of military personnel’”.** Military personnel and citizens discharged from military service who have one or more disabled children must be provided with housing (housing subsidy) out of turn. This also applies to the provision of military-provided housing, rented housing, and dorm rooms.

**December 5 – Resolution 303 “On the signing of the treaty between the Russian Federation and the Republic of Belarus on security guarantees within the framework of the Union State”.**

**MEASURES TO PROTECT INFORMATION SECURITY, REGULATE THE ACTIVITIES OF FOREIGN AGENTS, AND UPBRING AND EDUCATE THE YOUNGER GENERATIONS**

**October 26 – Federal Law 358 “On amendments to Article 256 of the Federal Law ‘On the procedure for leaving the Russian Federation and entering the Russian Federation’ and the Federal Law ‘On the legal status of foreign citizens in the Russian Federation’”.** The law excludes the possibility for a foreign citizen to obtain a temporary residence permit or a residence permit in the case of a fictitious marriage.

**November 9 – Federal Law 377 “On amendments to Articles 151 and 152 of the Federal Law ‘On the legal status of foreign citizens in the Russian Federation’”.** Examinations for foreign citizens in the Russian language, the history of Russia and the fundamentals of the legislation of the Russian Federation and the issuance of appropriate certificates are carried out only by state institutions, the list of which is established by the Government of the Russian Federation. The amount of the examination fee is also set by the Government of the Russian Federation.

**November 9 – Federal Law 383 “On amendments to the Criminal Code of the Russian Federation and Article 151 of the Code of Criminal Procedure of the Russian Federation”.** The Criminal Code of the Russian Federation has been amended to classify the organization of illegal migration carried out by an organized group or for the purpose of committing serious or especially serious crimes as particularly serious crimes. For this, imprisonment for a term of 8 to 15 years, a fine of 3 to 5 million rubles and deprivation of the right to engage in certain activities for up to 10 years are provided. In addition, a minimum term of imprisonment of 2 years has been introduced for organizing the illegal entry of foreigners into Russia, their illegal stay or illegal transit through the Russian Federation. A fine of up to 500 thousand rubles will also be imposed. The same acts committed with the help of forged documents or the Internet will be punishable by imprisonment for a term of 5 to 10 years with a fine of up to 1 million rubles and with deprivation of the right to engage in certain activities for up to 7 years.

**November 9 – Federal Law 384 “On amendments to Article 63 of the Criminal Code of the Russian Federation”.** An aggravating circumstance is the commission of a crime by a person who is illegally present on the territory of the Russian Federation.

**November 9 – Federal Law 385 “On amendments to Article 153 of the Federal Law ‘On information, information technologies and information protection’”.** The federal law is aimed at combating illegal migration by blocking information resources containing offers of illegal migration services, as well as information on ways to organize illegal migration (source: official website of the President of the Russian Federation. Note of the State Legal Department).

**November 9 – Federal Law 387 “On amendments to Article 104 of the Criminal Code of the Russian Federation”.** Money, valuables and other property obtained as a result of the commission of a mercenary crime related to the organization of illegal migration will be subject to “confiscation, that is, compulsory gratuitous seizure and conversion to state ownership on the basis of a guilty verdict” (Criminal Code of the Russian Federation, Art.104.1).

End of Insert 3

**November 23 – Federal Law 400 “On amendments to Article 217 of Part Two of the Tax Code of the Russian Federation”**. Incomes received by volunteers in the form of payments for reimbursement of medical expenses are exempt from taxation on personal income.

**November 23 – Federal Law 401 “On amendments to Article 6.21 of the Code of Administrative Offences of the Russian Federation”**. Administrative liability is established for the promotion of non-procreation. The amount of the administrative fine for citizens will range from 50 to 100 thousand rubles, for officials – from 100 to 200 thousand rubles, for legal entities – from 800 thousand to 1 million rubles.

**November 23 – Federal Law 402 “On amendments to the Code of Administrative Offences of the Russian Federation”**. Liability has been established for forgery of documents for the organization of illegal migration, their use, transfer or sale. For organizations, the fine is 5–10 million rubles with confiscation of the instruments of commission of the offense, for repeated violations – a fine of 10–60 million rubles with confiscation. The fine for organizations for forgery of an identity document, stamp, seal and letterhead, their use, transfer or sale has been increased from 30–50 thousand rubles to 40–80 thousand rubles; for repeated violations – from 50–100 thousand rubles to 100–200 thousand rubles.

**November 23 – Federal Law 411 “On amendments to Articles 10 and 15 of the Federal Law ‘On information, information technologies and information protection’ and certain legislative acts of the Russian Federation”**. A ban on propaganda of non-procreation is established.

**December 9 – Decree 1047 “On the Council under the President of the Russian Federation for the Implementation of State Demographic and Family Policy”**. V. Matvienko was appointed Chair of the Council.

**MEASURES TO PROVIDE SOCIO-ECONOMIC SUPPORT TO THE GENERAL POPULATION, STRENGTHEN THE COUNTRY’S ECONOMY, INCLUDING IN THE INTERNATIONAL ARENA**

**October 26 – Federal Law 357 “On amendments to the Federal Law ‘On industrial policy in the Russian Federation’”**. The possibility of state support for complex construction projects implemented on the territory of foreign countries by industrial entities or Russian industrial support infrastructure organizations has been provided in order to develop Russia’s export potential and promote Russian industrial products to foreign markets.

**October 29 – Federal Law 362 “On amendments to Parts One and Two of the Tax Code of the Russian Federation and certain legislative acts of the Russian Federation”**. The value added tax rate is set at 10% for taxation of transactions involving the sale of breeding products (materials), as well as the import of such products into the territory of the Russian Federation. The excise tax rates are indexed. Lump-sum compensation payments received by cultural workers under a state program approved by the Government of the Russian Federation are exempt from taxation on personal income. The tourist tax is included in the single tax payment. It is envisaged that from January 1, 2025, an experiment on the establishment of a special tax regime “Automated simplified taxation system” can be carried out in the territories of all constituent entities of the Russian Federation.

**October 29 – Federal Law 365 “On amendments to Article 1 of the Federal Law ‘On the minimum wage’”**. Starting from January 1, 2025, the minimum wage is set at 22,440 rubles per month (previously it was 19,242 rubles).

Such a situation in the public administration system as a whole can be considered using the example of individual system-wide problems and tasks facing the state.

As an example, we can point out the issue of migration, which, as many experts say, is one of the “threats to national security”, and which leads (in addition to other problems) “to a rapid change in the cultural, linguistic and civilizational unity of our country”<sup>78</sup>.

According to statistics, over the period from 2021 to 2023, the proportion of people with a low level of education among migrants coming to Russia did not decrease, which does not fully correlate with the head of state’s policy on the influx of specialists with a “high level of intelligence and qualifications”:

- ✓ the share of migrants with secondary and incomplete general education in 2021–2023 was 31% of the total number of arrivals in Russia (1 million people);

- ✓ the share of migrants with primary education or no education at all was 1.8% (62 thousand people),

- ✓ the share of migrants who simply do not indicate their level of education was 11% (383 thousand people)<sup>79</sup>.

*“... what we definitely need is **highly qualified specialists**, and here we absolutely need to navigate and orient our migration services in such a way that people with a **high level of intelligence and qualifications** come to us for permanent residence, for work, for residence in general”<sup>80</sup>.*

Statistical data of the Investigative Committee of the Russian Federation for 8 months of 2024.

“Foreigners have committed **more than 26,000 crimes**, while compared to the same period last year, there has been a 12% **increase in the number of serious crimes** committed by newcomers.

**The number of crimes committed by “illegals” has almost tripled:** from 2,880 to 8,059.

**The number of criminal assaults by migrant workers has increased from 5,868 to 9,708.**

**The number of crimes committed by newcomers who acquired Russian citizenship less than ten years ago has increased from 7 to 11 thousand.**

This year, migrants have committed **73 extremist acts vs 59 crimes a year earlier**<sup>81</sup>.

In addition, according to the RF Investigative Committee, there has been an **increase in the number of crimes** committed by foreigners and “illegals” in Russia, including crimes of an extremist nature.

In other words, the dynamics of statistical data, as well as the assessments of many experts, indicate that “**we have not yet developed a meaningful migration policy**”<sup>82</sup>. At least, this is how migration policy was assessed by Vladimir Putin on June 7, 2024 at the plenary session of the Saint Petersburg International Economic Forum (*Insert 4*).

<sup>78</sup> K. Malofeev. Speech at the Eighth Congress of Tsargrad (Moscow, October 24, 2024). The problem of migrants in Russia has risen to full height: Either we solve it, or it affects us. Available at: [https://tsargrad.tv/news/problema-migrantov-v-rossii-vstala-v-polnyj-rost-ili-my-ejo-reshaem-ili-ona-nas\\_1073067/nsk?ysclid=m4s50vbtii82949111](https://tsargrad.tv/news/problema-migrantov-v-rossii-vstala-v-polnyj-rost-ili-my-ejo-reshaem-ili-ona-nas_1073067/nsk?ysclid=m4s50vbtii82949111)

<sup>79</sup> Number and migration of the population of the Russian Federation in 2023: Statistical collection. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/compendium/document/13283>

<sup>80</sup> Vladimir Putin’s speech at the 9th Agency for Strategic Initiatives forum “Strong Ideas for a New Age” on February 20, 2024. Available at: <http://www.kremlin.ru/events/president/news/73505>

<sup>81</sup> Ivanov A. ICR reported an almost threefold increase in the number of crimes committed by illegal migrants. Available at: [https://zavtra.ru/events/skr\\_soobshil\\_o\\_pochti\\_tryohkratnom\\_roste\\_chisla\\_prestuplenij\\_nelegal\\_nih\\_migrantov?ysclid=m241opr9d9277636059](https://zavtra.ru/events/skr_soobshil_o_pochti_tryohkratnom_roste_chisla_prestuplenij_nelegal_nih_migrantov?ysclid=m241opr9d9277636059)

<sup>82</sup> Vladimir Putin’s speech at the plenary session of the Saint Petersburg International Economic Forum on June 7, 2024. Available at: <http://www.kremlin.ru/events/president/news/74234>

Excerpt from V. Putin’s plenary discussion with S. Karaganov at SPIEF 2024<sup>83</sup>

**S. Karaganov:** “Here is another peaceful, important question. As you know, our country is currently engaged in a major discussion about migration issues. Unfortunately, there are also chauvinistic sentiments, which pose a threat to our multiethnic nation.

At the same time, the police department is addressing migration issues. Whether this is positive or negative is debatable. However, their objective is to limit migration. **I believe that we should take a stricter approach to limiting the negative aspects of migration.**

In my opinion, we face not only the task but also an opportunity to start actively seeking and attracting skilled migrants from abroad. Climate migration will begin, value-based migration is starting to occur, and crisis-related migration will also happen, it is already underway.

**By the way, we missed the opportunity to welcome a wave of very interesting people from Afghanistan who could have come to our country after they fled theirs due to the actions of the US.**

Do we need to modernize our migration policy concept? **I read it some time ago and found it to be amazingly unrealistic and liberal. The police department is allegedly engaged in implementing it.** Perhaps you should establish a government agency to regulate these issues, develop a modern migration policy concept, and attract migrants while also implementing stricter measures to control their influx? **We currently lack such a policy”.**

**V. Putin:** “**I have no objections. You are right.** However, we should think about allowing interesting people from Afghanistan to come here. Today, many interesting people are coming here from other countries. **But you are certainly right in saying that we have not yet developed a well-thought-out migration policy.** We had a single agency in the past, but it later merged with the Interior Ministry for security reasons. It is worth questioning whether this division is functioning effectively or underperforming. I have discussed this with my colleagues. I have instructed the Government and the Security Council to re-examine this issue as soon as possible.

It is undeniable that there is a problem. We need to attract migrant workers, as this is crucial. With minimal or zero unemployment, a shortage of workers hampers economic growth.

**You are also correct in stating that we need individuals with specific skills, education levels, fluency in the Russian language, knowledge of our traditions, and more, rather than just any migrants.** Our colleagues from countries that provide the majority of migrants also recognize this. We are discussing how to collaborate and teach these individuals Russian, our traditions and culture and our laws, so that they can feel comfortable in Russia. Most importantly, we want to ensure that local residents do not face any issues in the employment market or their daily lives. **Where do migrants usually settle? In places with active economic life. And what are these places? These are Moscow, the Moscow Region, St Petersburg, and a few cities in Siberia that offer high wages. I wholeheartedly agree with you that there is much work to be done in this area”.**

<sup>83</sup> Vladimir Putin’s speech at the plenary session of the Saint Petersburg International Economic Forum on June 7, 2024. Available at: <http://www.kremlin.ru/events/president/news/74234>

## Insert 5

## Some legislative initiatives and decisions in the field of RF migration policy

Since the beginning of 2024, the RF State Duma has adopted 7 laws in the field of migration control<sup>84</sup>.

**October 16, 2024**, in the first reading, two draft laws from the migration package were unanimously adopted, according to which criminal liability for organizing illegal migration is increased, and illegal stay in Russia becomes an aggravating circumstance in the commission of any crimes. In addition, Chairman of the State Duma of the Russian Federation V. Volodin proposed to exclude healthcare and education from the list of areas where work entitles to a simplified residence permit<sup>85</sup>.

**November 9, 2024**, the RF President signed a number of laws that amend migration policy:

- ✓ Federal Law 377 “On amendments to Articles 15-1 and 15-2 of the Federal Law ‘On the legal status of foreign citizens in the Russian Federation’” (on the prohibition of intermediary organizations from arranging exams for migrants);
- ✓ Federal Law 383 “On amendments to the Criminal Code of the Russian Federation and Article 151 of the Code of Criminal Procedure of the Russian Federation” (on classifying the organization of illegal migration committed by an organized group or for the purpose of committing grave and Especially grave crimes as particularly grave crimes);
- ✓ Federal Law 384 “On amendments to Article 63 of the Criminal Code of the Russian Federation” (on recognizing as an aggravating circumstance the commission of a crime by a person illegally present in Russia);
- ✓ Federal Law 385 “On amendments to Article 153 of the Federal Law ‘On information, information technologies and information protection’” (on the extrajudicial blocking of websites with illegal services for migrants);
- ✓ Federal Law 387 “On amendments to Article 1041 of the Criminal Code of the Russian Federation” (on the confiscation of money, valuables and property obtained during the organization of illegal migration);

**December 11, 2024**, the State Duma has amended the current law on education, which introduces a procedure for the access of foreign children to Russian schools. The same law declares the right of anyone who is legally located on the territory of the Russian Federation to receive education on the same principles as citizens of the country. The admission mechanism will be two-way: the visitor first confirms that they and their family are in the Russian Federation legally, and then potential students will have to confirm their compliance with the established requirements for the required level of proficiency in Russian.

**January 1, 2025**, the decree of Governor G. Nikitin banning the involvement of foreign specialists in 37 types of activities, including in the field of healthcare and education, comes into force in the Nizhny Novgorod Region. Guest workers are allowed to stay only in low-skilled jobs in industries that require a large amount of manual labor. Tver Region Governor I. Rudnya also closed 82 types of activities for migrant workers, 52 of them completely. These are, for example, energy sectors for housing and communal services, water transport, entertainment and tourism, veterinary medicine, as well as the IT and media spheres<sup>86</sup>.

<sup>84</sup> Veretennikova K. And let no one leave unpunished. Available at: <https://www.kommersant.ru/doc/7232760?ysclid=m2egb6pr13295480662>

<sup>85</sup> Ibidem.

<sup>86</sup> Garmonenko D. Nizhny Novgorod region prohibits migrants from treating and teaching. Available at: [https://www.ng.ru/politics/2024-12-04/1\\_9149\\_migrants.html?ysclid=m4qs3iwjxw476378524](https://www.ng.ru/politics/2024-12-04/1_9149_migrants.html?ysclid=m4qs3iwjxw476378524)

Migration policy in Russia, as S. Karaganov, moderator of the discussion with the President, noted, “**is amazingly unrealistic and liberal**”<sup>87</sup>, or, as some experts believe, it is “waltzing”. On the one hand, decisions are being made, and quite actively (*Insert 5*).

“When discussing migration issues in Russia, two positions collide. The first one assumes that the country faces serious demographic, economic and social challenges.... The second one is a policy based on the Russian Orthodox cultural core. The influx of people of other ethnicities is, of course, blurring it. **Our migration policy, to put it mildly, waltzes between these alternative approaches**”<sup>88</sup>.

On the other hand, there are still conditions under which there is active lobbying for the importation of migrants, and at the highest level.

Presidential Press Secretary Dmitry Peskov: “**Migrants are a necessity. The fact is that we have a very tense demographic situation. We live in the largest country in the world, but our population is not large... In order for us to develop dynamically, to implement all development plans, of course, we need labor force. We welcome them**”<sup>89</sup>.

For example, back in 2022, Interior Minister V. Kolokoltsev said that “there are 16 departments that are interested in migrant labor”<sup>90</sup>; and in 2024, K. Kabanov directly stated that “**the ‘subversive’ activities of migration lobbyists** represented mostly by construction oligarchs, ethnotigarchs – owners of the largest markets, various services, marketplaces, housing and communal services dealers and some heads of regions, are going on quite successfully”<sup>91</sup>.

K. Kabanov, Chairman of the National Anti-Corruption Committee, member of the HRC: “**As soon as Russia started talking about a tougher migration regulation regime, business reacted immediately.** The lobbyists’ opposition has been intense. We have literally adopted a number of laws with great difficulty and with great effort...

‘The Golden Billion’, **those of its representatives who live in Russia, are in favor of migrants. The elite in Russia has, in fact, already revealed its cards... They believe that it makes no difference who will inhabit Russia. We have such people in power who de facto say the following: ‘We are at the top, we are part of the golden billion’, and who is at the bottom makes no difference to us. Whether there are more Russians or someone else there, we don’t care**”<sup>92</sup>.

<sup>87</sup> Vladimir Putin’s speech at the plenary session of the Saint Petersburg International Economic Forum on June 7, 2024. Available at: <http://www.kremlin.ru/events/president/news/74234>

<sup>88</sup> Rubnikov M., Pogodina A. “It would be better if we did not see them”. Will Russia be able to do without migrants? Available at: <https://www.gazeta.ru/social/2024/09/18/19763059.shtml?updated>

<sup>89</sup> The Kremlin explained why migrants are welcome in Russia. Available at: <https://www.rbc.ru/society/22/11/2024/674021a29a794777c6755257>

<sup>90</sup> Gorevoy R. Gaster-roof. Available at: <https://versia.ru/rabochej-sile-iz-srednej-azii-pokrovitelstvuyut-16-vedomstv?ysclid=m2efacjvfq302434325>

<sup>91</sup> The “subversive” activities of migration lobbyists in Russia are quite unsuccessful. Available at: <https://newdaynews.ru/authors/831404.html?ysclid=m2ef6nua79393811603> (K. Kabanov – Member of the Presidential Council for Human Rights, Head of the National Anti-Corruption Committee).

<sup>92</sup> The Golden Billion favors migrants. The elite in Russia has revealed its cards: “We are at the top, who is at the bottom makes no difference to us”. Available at: [https://tsargrad.tv/articles/zolotoj-milliard-za-migrantov-jelita-v-rossii-raskryla-karty-my-verhushka-kto-vnizu-bez-raznicy\\_1046577](https://tsargrad.tv/articles/zolotoj-milliard-za-migrantov-jelita-v-rossii-raskryla-karty-my-verhushka-kto-vnizu-bez-raznicy_1046577)

According to experts, “the lobbyists for the flow of migrant workers are well known. They represent the construction business and the housing and communal services sector... For example, some real estate objects are built using cheap migrant labor and then sold for quite a lot of money, as a result, we are talking about simply off-scale profits. **There are those who profit from this situation, which means that there will be those who lobby for the preservation of this state of affairs**”<sup>93</sup>.

Thus, the time that has come after the beginning of the SMO requires the public administration system (in all branches and at all levels) to take clear, fast and coordinated actions in implementing a systematic and comprehensive process of elite renewal, which has actually been going on for a very long time.

At the same time, quite objectively, realizing that the historical scale of changes for Russia and for the whole world, which began in February 2022, cannot but meet fierce resistance from the West, which means there is always a risk, the President expressed **only a hope, but not confidence**, that “Russia will never again return to the path it followed until 2022”.

We should note that this is not the first time that Vladimir Putin has expressed regret over his untimely and belated adoption of some of the most important and fateful decisions for the country; this concerns only the beginning of the SMO (which he talked about during the “direct line” on December 19, 2024), but also, for example, the reunification

“As for 2014, in hindsight, we’re all smart, of course, but we assumed that maybe we could come to an agreement, and Lugansk and Donetsk, somehow within the framework of the Minsk agreements, which you probably know about, would still be able to reunite with Ukraine. **We were sincerely striving for this. But we didn’t fully feel the mood of the people, it was impossible to fully understand what was going on there. But now it has probably become obvious that this reunion should have happened sooner. Maybe there would not have been so many casualties among civilians, there would not have been so many dead children due to shelling, and so on**”<sup>94</sup>.

of Russia with Donbass (which he talked about on November 25, 2022 at a meeting with mothers of military personnel).

However, today, at the end of almost three years of the special military operation, Vladimir Putin’s “revolutionary” words that Russia should not return to the path it followed until 2022 indicate that the President understands the seriousness of the situation and the fact that Russia simply has nowhere to retreat: **“To achieve a strategic defeat of Russia, defeat on the battlefield... is impossible by definition, it will never happen**<sup>95</sup>**... because with the loss of sovereignty, we lose our statehood... without sovereignty, Russia cannot exist as an independent country**<sup>96</sup>.

<sup>93</sup> Bregov A. Who makes money on the flow of migrants to Russia. Available at: <https://politika.sevastopol.su/news/kto-delaet-dengi-na-potoke-migrantov-v-rossiju/?ysclid=m4s346d8o464929280> (Opinion of A. Zubets, Doctor of Sciences (Economics), director of the Institute of Socio-Economic Research at the Financial University under the Government of the Russian Federation).

<sup>94</sup> Vladimir Putin’s meeting with mothers of military personnel on November 25, 2022. Available at: <http://www.kremlin.ru/events/president/news/69935>

<sup>95</sup> Vladimir Putin’s interview to Tucker Carlson on February 9, 2024 Available at: <http://www.kremlin.ru/events/president/news/73411>

<sup>96</sup> “Direct line” with Vladimir Putin on December 19, 2024. Available at: <http://www.kremlin.ru/events/president/transcripts/75909>

And if there is this understanding and if there is a public recognition of this understanding, then there must be appropriate actions aimed at the renewal of the elites, especially considering that there is a request for this from society.

Historian and writer S. Pereslegin notes that with the beginning of the SMO, a “consensus appeared in Russian society according to which **the war should lead to the transformation of the elite**”, and there is also a consensus according to which “**one of the risks of war is the absence of such a transformation**”<sup>97</sup>.

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<sup>97</sup> Pereslegin S. The political system in its dynamics seems to be moving toward the Oprichnina. Available at: <https://www.business-gazeta.ru/article/583372>

## The BRICS Challenge for Global Economy Institutions. The Meaning of the New Development Bank



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**Abstract.** Global economy institutions are now acknowledged to be in crisis be they the IMF, the World Bank or the WTO. The increasing role of the BRICS as a group aiming for global governance rule setting marks a substantial shift in our understanding of that system. In the path toward this aim, BRICS countries clearly moved from an “Voice or Exit” posture to an of “Voice and Exit” and then to the open creation of an alternative to “Global West” generated economic institutions. By doing so they demonstrated the accumulation of structural power leading to the creation of the New Development Bank. In turn, this creation allowed the BRICS countries to strengthen their structural power. The diminishing share of the “global West” in the world GDP and the growth experienced by “emerging powers” like China and India has pushed toward obsolescence most of the global economy institutions that were generated in the past-Second World War and the Cold War. Global economy governance has fallen from “Global West” hands partly because of these objective changes and partly because of subjective factors like an ill-fated US policy, a generalization of the practice of unilateral – hence illegal – sanctions, and partly because a reluctance, and even an open opposition, to reform existing global economy institutions. Countries from the “Global South” are now looking to BRICS countries and their structural power with an increasing sympathy.

**Key words:** BRICS, exit, global economy, global governance, Global West, Global South, international institutions, international monetary system, multilateralism, New Development Bank, structural power, voice.

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## Introduction

The challenge BRICS countries are presenting to “Global West” generated economic institutions is now becoming more and more acknowledged. In the wake of the 16th BRICS Summit that has taken place in Kazan from October 22 to 24, 2024 it is time to look at this topic generated literature.

It is now widely accepted that institutions of the global economy, to one degree or another, are in crisis. At different levels, whether the IMF, the World Bank or the WTO, these institutions are finding it increasingly difficult to adapt to a rapidly changing world and an unstable geopolitical situation. One of the main reasons for this situation is the emergence of a large group of countries which are now questioning the model of global governance and the balances established at the end of the Second World War. The emergence of BRICS, and since January 2024 of BRICS+, is the cumulative result of a long history of dissatisfaction with the functioning of these institutions of the global economy. The Kazan 2024 summit, the 16th BRICS summit, has showed the increasing leverage of this organization. Could BRICS+ develop new institutions capable of challenging or replacing global institutions emerging from the Bretton Woods framework? This is an important question arising from the growing importance of BRICS.

The growing role of BRICS as a group aiming to establish rules for regional and even global governance marks a substantial shift in our understanding of the international system (Duggan et al., 2021). Two clearly divergent attitudes have existed. The first has seen the BRICS+ working towards a redistribution of power within global governance but without major changes to the rules of the game. In this scenario the BRICS were mostly supporting Western values and norms, but tried to exercise a growing influence in their implementation. This attitude lost its appeal by the end of the 2010's. The second attitude has seen BRICS and BRICS+ clearly questioning Western

values and norms and trying to make their own set of values and norms to dominate at least at a regional level, but now more and more at a global level. The transition from the first to the second attitude has been the determining fact of the recent years, at least since the COVID-19 crisis.

For more than ten years there has been a debate in the academic world which focuses either on the role of BRICS+ in the transformation of the hierarchy of the world order but in a logic where these countries play the established game, or which focuses on the national sources of formation of the preferences of the nations which form BRICS, which implies an analysis of the position of the different States in this global game and their possibility of modifying its content and its form. This paper will use two theoretical notions, Susan Strange's structural power and Alfred Hirschman “voice or exit” to envision the power of BRICS+ countries to “change the rules of the game”. It will specifically examine how the BRICS-created New Development Bank (NBD), till 2024 the BRICS' main attempt at institutional strengthening, could challenge, or complement, existing global institutions, as a case study.

The paper will be organized as follow. In a first part, we will examine the crisis – latent or open – of international economic institutions (IMF, World Bank and WTO), and in a second part, we will examine the rise to power of the BRICS and their transformation into BRICS+. In a third part we will then mobilize the theories of structural power of Susan Strange and the articulation between the logics of “voice” and “exit” (or defection) of Alfred Hirschman, and will focus on their relevance to our subject. Finally, the fourth part will examine how the creation of the NBD constitutes both an application of the logic of “exit” and can also be analyzed in terms of structural power, and how this NBD is different, and can represents an alternative to existing international financial institutions.

### The institutions of the global economy in crisis

The institutions supposed to govern the world economy, some of which emerged from Bretton Woods like the IMF and the World Bank, or from American hegemony such as the WTO, have gone through a prolonged period of crisis and inconsistency (Sinclair, 2012). They failed the promise of a good governance of the global economy for all (Mearsheimer, 1995).

The crisis of international economic organizations began more than 25 years ago, when the IMF proved incapable of stopping the Korean and then Asian crisis of 1997 (Wade, 1998). The rejection by the United States of the Japanese proposal to create an “Asian Monetary Fund” was not accompanied by a strengthening of the IMF’s capacity for action. If this failure demonstrated at the time the weakness of non-American institutional capacities, it also showed that dissatisfaction with the “Western-centric” functioning of the IMF was significant (Lipsky, 2003; Narine, 2003). The renewed inability of the IMF to prevent the rapid spread of the 2008 crisis (the so-called “subprime” crisis (Bibow, 2010; Conway, 2006)) confirmed the crisis of governance in the global financial world (Boughton, 2006; Dreher, Vaubel, 2004).

This crisis is paradoxically coupled with a latent crisis of the dollar, resulting from the very political implementation of US measures, such as the Foreign Corrupt Practices Act<sup>1</sup> and the Foreign Account Tax Compliance Act<sup>2</sup> and from the decision of the American authorities to consider that any use of the dollar would automatically bring foreign companies under American law. This was severely restricting the notion that the US Dollar was a kind of “common goods” that could be used by anyone to trade or invest. As the US Dollar was the main instrument IMF used these measures had direct impact on the credibility of the IMF. A French

<sup>1</sup> <https://www.justice.gov/criminal/criminal-fraud/foreign-corrupt-practices-act>

<sup>2</sup> <https://home.treasury.gov/policy-issues/tax-policy/foreign-account-tax-compliance-act>

parliamentary report written in 2016<sup>3</sup> shows that the main problem comes from the fact that transactions must necessarily go through an American bank to “purchase” dollars, thus falling under American law. These measures have therefore accelerated the phenomenon of crisis in international governance institutions. But this crisis was also indirectly affected by the politization of the “big three” rating agencies and by the fact that powers belonging to what can be called the “Global West” had opposed to really open the door to emerging countries like China and India (Kuznetsov, 2022). Countries of the “Global West” have tried to maximise what can be called a “financial rent”, sometimes coupled to what amounts to a “technological rent”<sup>4</sup>. This was raising the issue of the international financial institutions reformability with a direct impact on the global economic governance (Larionova, Kirton, 2018; Larionova, Shelepov, 2022). The fact that the expansion of the eurozone economy is now fast declining and the weakening of the competitive advantages of European union has led to a weak position of the Euro in the International Monetary System (Polivach, 2020; Shchegoleva, Malsagova; 2020), concentrating all the problems on the US Dollar and its governance.

The IMF was clearly the most exposed to criticism institution (Syed, Sukar, 2018; Hackler et al., 2020). It is well known that structural adjustment policies have aroused much anger and discontent in many countries (Bussmann, Schneider, 2007; Hartzell et al., 2010). This started in the 1980s (Walton, Ragin, 1990; Walton, Seddon, 1994) and has continued unabated until today. The IMF’s policies

<sup>3</sup> <http://www.assemblee-nationale.fr/14/rap-info/i4082.asp>. A more recent report from the French National Assembly is also available: *Rétablir la souveraineté de la France et de l’Europe et protéger nos entreprises des lois et mesures à portée extraterritoriale*, Paris, Assemblée Nationale, 26 juin 2019. Available at: <https://www.vie-publique.fr/sites/default/files/rapport/pdf/194000532.pdf>

<sup>4</sup> Transformation of the global economy: Opportunities and risks for Russia. Report. Published July 2024. Available at: <https://ecfor.ru/publication/transformatsiya-mirovoi-ekonomiki/>

reflect a substantial rhetorical and political continuity with neoliberalism (Weisbrot et al., 2009b), even if one can note – but mainly for European countries – pronounced discontinuities in these two areas (Gabel, 2003). But the IMF is struggling today to maintain its capacity to implement structural adjustment policies and to remain the benchmark in many countries (Gabel, 2011).

The question of a possible reform of the IMF has become central since the subprime crisis (Weisbrot, Johnson, 2009) and the rise to power of emerging countries, including China but also India. However, attempts to reform this institution have remained limited (Weisbrot et al., 2009a). The end result is that, in the “Global South”, the legitimacy of the IMF has been significantly eroded and the demand for an alternative organization has become increasingly evident. It is true that analysts have long suspected that politics plays a large part in the International Monetary Fund’s lending operations (Bird, 1996; Thacker, 1999) and that that organization could be largely influenced by the U.S. Treasury (Sapir, 2000a). This hypothesis has certainly not been sufficiently specified, but it would be largely consistent with the notion of “hegemony” (Cohen, 1986; Keohane, 1984; Schoultz, 1982). Clearly, political alignment with the United States, the IMF’s largest shareholder, increases a country’s likelihood of receiving an IMF loan<sup>5</sup>, or of benefiting from more favorable conditionality clauses (Sapir, 2000a). One would have thought that the end of the Cold War would have brought about a change on this point (Killick, 1995). This was not the case and it would be a mistake to think that the IMF would have become less politicized since the end of the Cold War. In fact, work suggests that political influence has actually increased since 1990 (Soo, Russett, 1996). The behavior of multilateral

organizations always remains determined by the political interests of their most powerful member states.

China has attempted to increase its influence within the IMF (Ferdinand, Wang, 2013) and has been, to some extent, successful in doing so. A good example of such collaboration is the entry of the Renminbi (RMB) into the Special Drawing Rights basket in 2016<sup>6</sup>. Much like the United States and other developed Western economies, China has also made decisions regarding its collaboration with international financial institutions (IFIs) based on its own interests and objectives regarding key economic and political issues, with a long-term project of internationalization of its currency (Cohen, 2012). In fact, when China’s interests and objectives converge with those of the IMF, its collaboration with the IMF tends to produce an outcome that meets China’s needs. However, if China and the IMF have divergent interests and objectives, the result of their collaboration, or more precisely their non-collaboration, can prove significantly destabilizing (Kent, 2007). China’s relationship with the IMF in reality depends heavily on its relationship with the United States (Foot, Walter, 2011). Since Obama’s second term and Trump’s presidency, the deterioration of these relations has made relations with the IMF increasingly problematic. This trend has continued under Biden’s presidency<sup>7</sup> (Kim, 2023). Yet the IMF remains responsible for regulating, for better or worse, global finances and debts. Despite the strong discontent it has aroused, no new institution has so far emerged to challenge its domination. However, this could change with the creation of the New Development Bank.

<sup>5</sup> Rowlands D. (1995). Political and Economic Determinants of IMF Conditional Credit Arrangements: 1973–1989” (Manuscript, Norman Paterson School of International Affairs, Carleton University, Ottawa, Ont.)

<sup>6</sup> Donnah S., Anderlini J. IMF poised to admit China’s renminbi in elite currency basket. Available at: <http://www.ft.com/intl/cms/s/0/fd81211a-96a9-11e5-9228-87e603d47bdc.html#axzz48GqVm2L2>.

<sup>7</sup> Li M., Hernandez B. US-China relations in the Biden Era: A timeline. Available at: <https://www.china-briefing.com/news/us-china-relations-in-the-biden-era-a-timeline/>

The World Bank has also faced deep criticism since the 1990s<sup>8</sup> (Bello, Guttal, 2005; Girdwood, 2007; Rappleye, Leang, 2018; McCormack, 2018). Disenchantment with the policies of the World Bank is not new (Collier, 1997; Easterly, 2002), nor are calls for a reform of this institution (Mosley et al., 1995). Its alignment with American policy was one of the points that many critics noted (Andersen et al., 2006; Clark, Dolan, 2021).

For most of the post-war period, the Bank enjoyed a near-monopoly in two areas: financing and knowledge of development problems and processes. Although the World Bank retains its importance in development knowledge, the development finance sector has become more competitive thanks to the creation of a series of new institutions by emerging countries (Güven, 2017). The risk that the World Bank will become just another aid agency run by rich countries to help poorer countries has been clearly identified (Birdsall, Subramanian, 2007; Birdsall, Scott, 2016). Some national state-owned giants, such as the China Development Bank and China Exim Bank (Kopiński, Qian, 2014), have reportedly (at least in some years) provided more loans to Africa than the World Bank. This situation obviously raises embarrassing questions.

The COVID-19 crisis, which is now seen as one of the clearest wake-up calls for the survival of multilateralism, has only added to pressure<sup>9</sup>; rich countries channeling their resources and attention inward rather than displaying a particular desire to fight the pandemic outside their borders<sup>10</sup>. In fact, the World Bank is struggling to find a response to the questioning of its legitimacy and the crisis of

irrelevance that have haunted it for years. Clearly, the BRICS New Development Bank (NDB) could be one of the possible players to challenge the supremacy of the World Bank (Kanbur, 2017).

Then, there is also the WTO which has reached the end of its potential as we saw with the failure of the “Doha Round” (Stephen, 2019). At the time of its establishment in 1995<sup>11</sup>, two of the main functions of the World Trade Organization were to “provide a forum for negotiations among its members regarding their multilateral trading relations”<sup>12</sup> and to “manage the Understanding on Rules and Regulations and procedures governing the settlement of disputes”<sup>13</sup>. The latter function was carried out by the Dispute Settlement Body (DSB), described as the “crown jewel” and “central pillar of the multilateral trading system”<sup>14</sup> (Creamer, 2019).

But very quickly, the so-called “developing” or “emerging” countries increasingly had the feeling that they were the losers of the Uruguay Round, that they had obtained a bad agreement and that they had to give much for a deceptive reward. For example, they quickly realized that the agreement on agriculture and the agreement on textiles and clothing were far from giving them access to the market of developed countries, which was in fact one of the reasons why they joined the WTO (Jones, 2009). The attempt to launch the “Doha Round” therefore ended in a resounding failure. Overall, the negotiations were so divisive and unsuccessful that it is now common to speak of the “death of the Doha Round”. In response, more and more states have turned to bilateral and regional economic partnerships. The recent conclusion of such agreements, also called “new

<sup>8</sup> Woods N. (2003). Unelected governments: Making the IMF and World Bank more accountable. Available at: <https://www.brookings.edu/articles/unelected-government-making-the-imf-and-the-world-bank-more-accountable/>; Why the World Bank must do better at Doing Business. Available at: <http://www.ituc-csi.org/why-the-world-bank-must-do-better?lang=en/>

<sup>9</sup> <https://www.bloomberg.com/news/videos/2020-05-21/reinhart-says-covid-19-is-the-last-nail-in-the-coffin-of-globalization-video>

<sup>10</sup> Guterres A. (2020). Global wake-up call. Available at: <https://www.un.org/en/coronavirus/global-wake-call>

<sup>11</sup> On replacement of the GATT by the WTO, see Sapir J. (2022). *Le Protectionnisme*. Paris: PUF, Coll. Que-Sais-Je.

<sup>12</sup> WTO, Marrakesh Agreement Establishing the World Trade Organization, 15 April 1994, 1867 UNTS 154, Arts. III.2 and III.3

<sup>13</sup> WTO, Understanding on Rules and Procedures Governing the Settlement of Disputes, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 33 ILM 1197, 15 April 1994

<sup>14</sup> Payosova G., Hufbauer C., Schott J.J. (2018). The Dispute Settlement Crisis in the World Trade Organization: Causes and Cures. Policy Brief, 18-5.

generation agreements”, such as the Trans-Pacific Partnership Agreement or the ill-fated CETA or Comprehensive Economic and Trade Agreement between the European Union and Canada, as well as the long-lasting negotiations on The Regional Comprehensive Economic Partnership, led by China and including 16 states in Asia and Oceania, are probably the best examples of this trend<sup>15</sup>.

The result has been a considerable increase in regional agreements that violate WTO principles. From 2009 to 2022 their number increased from 287 to 577<sup>16</sup>. This is both clear an indicator of the WTO crisis and a confirmation of the growing weight of regionalism (Lebedeva, Kuznetsov, 2019; Izotov, 2021). The number of of new protectionist measures introduced against other countries increased too (Kuznetsov, 2022, p. 191). Was the reduction in global trade the result of these measures or, to the contrary, was these measures a reaction to the stagnation and decline of the global trade is still to be demonstrated (Sapir, 2021).

It is now clear that the institutions of the global economy are in crisis, whether open or latent. It is, at the same time, the product of the crisis of the “Washington Consensus” with which the IMF and the World Bank were associated (Sapir, 2000b), the result of a radical change in the balance of economic powers since the 1990s, of prolonged or too late reforms and the emergence of a new collective actor, the BRICS. This actor is now powerful enough to bring about significant changes in the governance structure of the global economy. In the fight for radical reform of global economic institutions, it could call for either a greater share of existing institutions or a complete change in the rules and norms defining those institutions. In fact, both directions are causing a major crisis in existing institutions. But a crisis never end by itself.

Indeed, the crisis and even the collapse of institutions dating from the period of domination

<sup>15</sup> Harding R., Reed J. Asia-Pacific countries sign one of the largest free trade deals in history. Available at: <https://www.ft.com/content/2dff91bd-ceeb-4567-9f9f-c50b7876adce>

<sup>16</sup> WTO. Regional Trade Agreement Database. Available at: <http://rtais.wto.org/UI/charts.aspx>

of the “Collective West” will not be complete until new institutions are created to replace the old ones. In fact, what we call a “crisis” is the period of time between the inability of old institutions to play their usual role and the emergence of new institutions that could replace them<sup>17</sup>.

We must then look at possible schemes for institutional creation, and in particular on the case of the New Development Bank.

### **From BRICs to BRICS+: Two decades of progress**

The emergence of the BRICS, then the BRICS+, was certainly the most important event of the last twenty years (Cochrane, Zaidan, 2024). The accession of four new countries in January 2024, and the probable accessions in the coming years, show the dynamism and the power of attraction of this organization<sup>18</sup>. This has been recently acknowledged by the European think tank “Bruegel” itself<sup>19</sup>. We must therefore examine BRICS progress over the past years to understand the underlying currents that have strained the institutions of the global economy.

The acronym BRIC – Brazil, Russia, India, China – was introduced into our popular language by Jim O’Neill, an economist at Goldman Sachs twenty years ago<sup>20</sup>. His article analyzed the spectacular economic growth that this group of countries would experience, as well as the implications of these future trends for the international political economy. A process which began in 2006 alongside the UN General Assembly and was institutionalized in 2009 during the first meeting in Yekaterinburg, the 16th

<sup>17</sup> A. Gramsci: “The crisis consists precisely in the fact that the old dies and the new cannot be born: during this interregnum we observe the most varied morbid phenomena”. In Gallimard, Paris (ed. R. Paris) translation of Gramsci, *Cahiers de Prisons*, Cahier 3, §34, p. 283.

<sup>18</sup> Hancock T., Cohen M. How BRICS became a club that others want to join. Available at: <https://www.bloomberg.com/news/articles/2023-11-03/how-brics-became-real-and-invited-saudis-iran-egypt-uae-ethiopia-argentina>

<sup>19</sup> Garcia-Herrero A. BRICS is becoming a more solid construction. Available at: <https://www.bruegel.org/first-glance/brics-becoming-more-solid-construction>

<sup>20</sup> O’Neill J. (2001). Building better global economic BRICs. Available at: <https://www.goldmansachs.com/insights/archive/building-better.html>

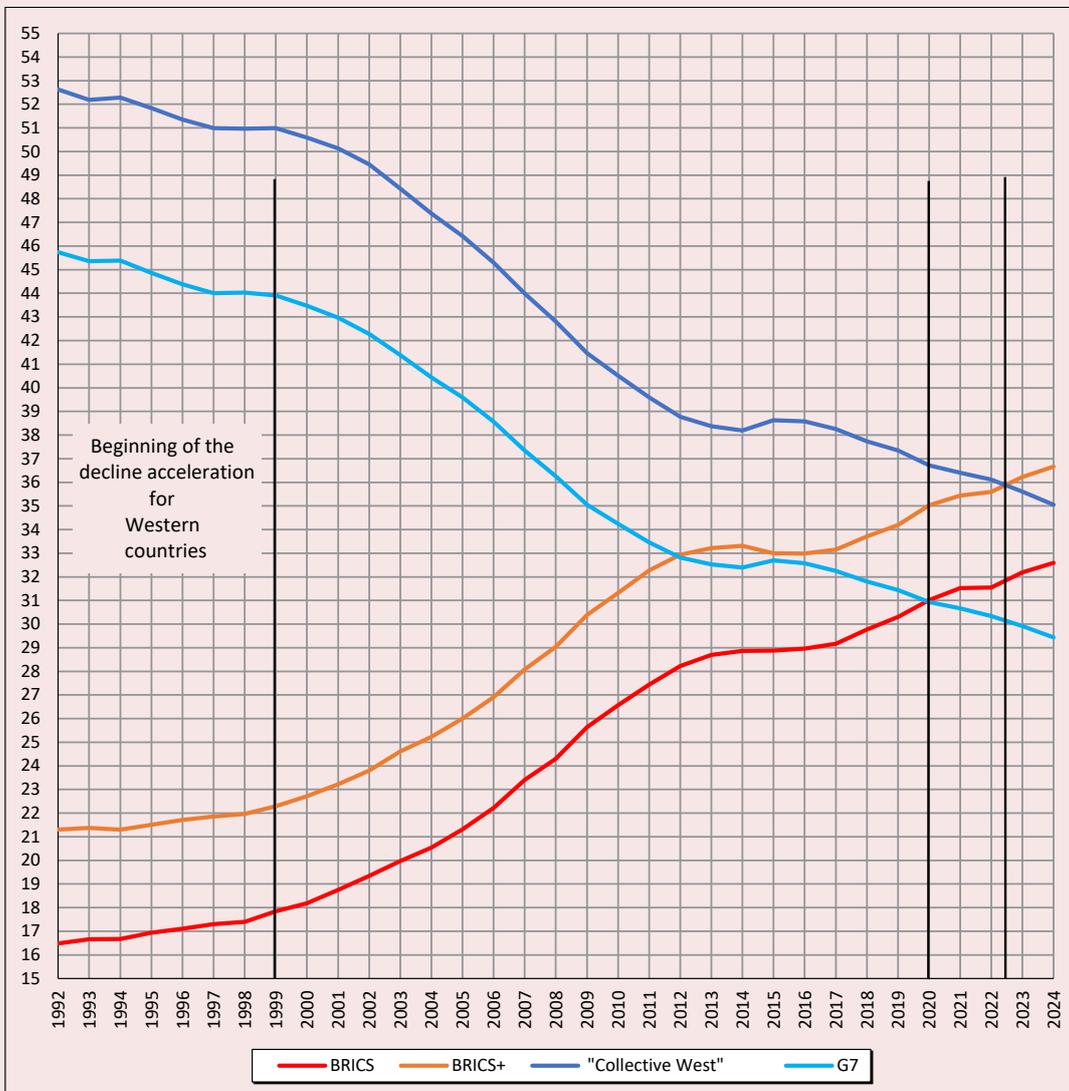
having taken place in October 2024 in Kazan. The impact of this new organization considerably increased in a world where regionalism was increasingly more relevant (Kuznetsov, 2020). The development of this new trend of regionalism (Voskressenski, Koller, 2019), the result of failures of a “Global West” led globalization was probably instrumental in the development and the success of the BRICS (Shlykov, 2017; Voskressenski et al., 2017).

During these three fateful years, the world was faced with a major financial crisis, known as the “subprime crisis”, which neither the United States

nor the IMF could manage or even control (Sapir, 2009). In retrospect, it is clear that this sparked the desire of the four countries to try to organize a better system of governance of currency and trade (Nayyar, 2016). In 2011, South Africa joined this group of countries as the most economically successful country in the Global South, bringing the BRICs into the BRICS.

With this addition, the BRICS countries represented 26% of the world’s landmass and total global GDP (in PPP) rising from 25.6% in 2009 to 32.2% at the end of 2023 (Figure). The assertion

BRICS and BRICS+ shares in world GDP in PPP compared to Western countries



Source: IMF.

that the BRICS represent the interests of the “global majority” is gaining credibility<sup>21</sup>. The creation of the BRICs, then BRICS, was greeted with both a certain skepticism and cautious enthusiasm depending on the opinions of different authors, being variously described as a sort of “loose association”, a “Potemkin village” for some<sup>22</sup>, or “club of coincidences of interest” (Saran, 2015). Quite clearly the “Global West” has been uneasy with BRICS development (Pavlenko, 2009). However, over time, this group has grown significantly in influence. This has been confirmed at the 16th BRICS summit in Kazan where a status of “partner countries” has been englobing now 13 countries<sup>23</sup>.

These are undoubtedly countries with common economic aspirations and similar ideas about the type of multilateralism and the changes in the global political economy that would be necessary to achieve it. In a sense, the BRICS could be seen as a continuation of the so-called “Primakov Doctrine” as explained by S.V. Lavrov<sup>24</sup>. Clearly, this organization is playing a considerable role in the Russian foreign policy, well before the beginning of armed operations in Ukraine in 2022 (Kadyshev, 2010; Larionov, 2012; Il'in et al., 2013). Nevertheless, it is these underlying economic aspirations that have served to reinvigorate capital flows within and between BRICS countries amid a financial vacuum in a post-financial crisis world (Radulescu et al., 2014). In fact, BRICS has grown, attracting more and more countries. In 2023, during the 15th summit, the organization decides to admit 6 new countries. Even though only five of these

<sup>21</sup> BRICS expresses interests of global majority, says Russian Presidential Aide Ushakov. Available at: <https://brics-russia2024.ru/en/interview/yuriy-ushakov-briks-na-dele-vyrazhaet-interesy-mirovogo-bolshinstva/>

<sup>22</sup> Pomeranz W. Why Russia needs the BRICS. Available at: <https://globalpublicsquare.blogs.cnn.com/2013/09/03/why-russia-needs-the-brics>

<sup>23</sup> <http://www.republicworld.com/world-news/kazan-declara%on-adopted-at-brics-summit>

<sup>24</sup> Lavrov S.V. In the near future, historians will formulate such a concept as the “Primakov doctrine”. ITAR-TASS. Available at: <http://itar-tass.com/politika/1537769>

countries accepted (for political reasons, Argentina declined the invitation), the BRICS transformed into BRICS+ on January 1, 2024 with a common GDP (in PPP) of 36.2%. The BRICS have become the equal of the G7, and the BRICS+ have reduced the gap with what we can today call the “collective West”. The possible accession of Saudi Arabia and the formal accession of Iran naturally has an important political, but also commercial, significance<sup>25</sup>.

But it will be a mistake to think that BRICS are only concerned with trade, money and finance. BRICS can be seen as a tool to foster technological cooperation to enable countries to overcome what has been called the “technological rent” of the “Global West” (Edler et al., 2023). The development of technological sovereignty has been defined by a lot of countries as a priority target. But, technological sovereignty could be better reached by cooperation than by an ill-fated return to autarky (March, Schieferdecker, 2023; Gareev, 2023). In this context, the BRICS relevance for Russia could be quite an important one (Dezhina, Gareev, 2024). Quite clearly the BRICS could foster cooperation and collaboration (de Oliveira et al., 2018), enabling country members to strengthen their technological sovereignty (Rensburg et al., 2015; Sidorova, 2018). The development of relations between Brazil and India (Lema et al., 2015), and of course between China and Russia is exemplifying this process Gao Jixiang, Jiang Jing, 2022; Changjun, Kolesov, 2022). Such a cooperation could also have a specific aspect, like cooperation on the “Arctic Route” which could have a considerable importance for both Russia and China (Yaxin Wang, 2023).

In the meantime, it was clear that “globalization” had entered a deep crisis (Sapir, 2015), a crisis that was recognized even in the Bretton Woods organizations. Carmen Reinhart, the World Bank’s

<sup>25</sup> Harmon R. How Saudi Arabia’s BRICS membership could affect trade in the region. Available at: <https://www.logisticsmiddleeast.com/business/how-saudi-arabias-brics-membership-could-affect-trade-in-the-region>

chief economist, went so far as to say that the COVID-19 pandemic was the “...final nail in the coffin of globalization”<sup>26</sup>. BRICS then became an ambitious bloc with its own internal dynamics that held annual summits, had diplomatic ambitions, engaged in large-scale infrastructure projects within their national borders as well as transnational projects. in their regions. BRICS flexed its economic might by creating a new lending institution – the New Development Bank which admitted countries not yet BRICS members<sup>27</sup> – and by challenging the hegemony of European and North American countries in international finance. This creation was very important. This is the first institutional creation in this extremely sensitive area not generated by Western countries.

The underlying economic aspirations of the BRICS carried with them the questioning and even the replacement, of the Bretton Woods institutions. The NDB served to reinvigorate capital flows within and between BRICS countries amid a financial vacuum in a post-financial crisis world. In 2017, almost a decade after the 2008 financial crisis, BRICS accounted for 19% of global investment flows (Garcia, Bond, 2019). Much of these financial flows have been channeled into capital-intensive infrastructure projects. The regional role of BRICS is now obvious (Chakraborty, 2018), and it is slowly expanding towards a global role<sup>28</sup> (Loewe, 2016).

The BRICS countries, however, have experienced a radical transformation of their political-economic structure since the 1990s. A common denominator between the heterogeneous

experiences of economic development of these countries and their position as economically successful countries has been the way in which the state has actively taken policy measures to mobilize resources, trade policies, public procurement, promotion of public demand and provision of financial support (Santiago, 2020).

The role of the state in economic development has taken different forms in the BRICS countries (Di Maio, 2015), but it has been, and remains, undoubtedly important. Through this dimension in their development, these countries are now launching both an implicit and explicit challenge to the global economic institutions created by and oriented towards the West. However, such a challenge must be defined. Will it be adaptive or radical in nature and how will it accommodate the growing structural power of BRICS?

#### **Institutional power and institutional strengthening**

But what is the true nature of the challenge posed by BRICS (and now BRICS+)? To understand the dynamics at play, it is appropriate to take up here theoretical elements of International Political Economy but also other theories. Two major concepts are emerging with a high heuristic potential, the one of “structural power”, mostly associated to Susan Strange’s name, and the one of “Voice” and “Exit” associated to Alfred Hirschman’s one.

BRICS and BRICS+ are both a political grouping and an economic grouping. The economic and political power of this group has increased in recent years, but more specifically since 2020 and the COVID-19 crisis. Symbolically, and to a certain extent, they can be considered representative of what is now called the “Global South”<sup>29</sup>.

<sup>26</sup> <https://www.bloomberg.com/news/articles/2020-05-21/reinhart-says-pandemic-is-last-nail-in-globalization-s-coffin>; <https://www.hks.harvard.edu/centers/mrcbg/programs/growthpolicy/reinhart-says-covid-19-last-nail-coffin-globalization-carmen>

<sup>27</sup> NDB admits Egypt as new member. Press Release on 29th December 2021. Available at: [https://www.ndb.int/press\\_release/ndb-admits-egypt-as-new-member](https://www.ndb.int/press_release/ndb-admits-egypt-as-new-member)

<sup>28</sup> <https://www.banque-france.fr/en/publications-and-statistics/publications/expansion-brics-what-are-potential-consequences-global-economy#:~:text=With%20the%20expansion%2C%20the%20new,of%20commitment%20to%20inclusive%20multilateralism>

<sup>29</sup> Carvalho L.R. BRICS: The global south challenging the status-quo. Available at: <https://globaleurope.eu/globalization/brics-the-global-south-challenging-the-status-quo/>; Expansion of BRICS: What are the potential consequences for the global economy? Available at: <https://www.banque-france.fr/en/publications-and-statistics/publications/expansion-brics-what-are-potential-consequences-global-economy>

It is in this context that the creation of the New Development Bank must be appreciated. One might have thought that the NDB would be a sort of internal arrangement aimed at encouraging investment and trade within the BRICS perimeter (Morozkina, 2015). But BRICS members decided from the outset to make the NDB a multilateral institution capable of operating beyond the BRICS perimeter. This decision changed the meaning of the creation of the NDB. The NDB then developed partnerships with different States and financial institutions, but on a very pragmatic basis (Nanwani, 2024), aiming to gradually expand its reach. It developed a specific program for the ecological transition and then competed directly with the World Bank (Braga et al., 2022). The creation of the NDB was therefore the first, and so far most, important attempt at institutional strengthening of the BRICS. It can be argued that the NDB is both a symptom and a source of structural power for the BRICS. This first involves reviewing what “structural power” is and how this concept should be used.

Structural power (Fairfield, 2015; Culppeper, 2015; Hayward, 2018; Godefroid et al., 2024) is generally considered to be power located among its obligatory, institutional and relational dimensions inherent in “a social structure beyond any conscious exercise” (Barnett, Duvall, 2005). This structural power contrasts sharply with relational power, which emphasizes efforts to maximize values within a given set of institutional structures. Structural power emphasizes a meta-power that refers to efforts to change institutions (or change the game). It is clear that the BRICS+ are trying here to question, modify and perhaps even change global governance (Stuenkel, 2016).

Susan Strange is certainly the author who has devoted the most effort to reintroducing the notion of power in international economics and she contributed to the creation of International Political Economy (Cohen, 2008). But while she rightly argued that power was and remains central to the

international political economy (Poast, 2019), she also attempted to define and refine the notion of “power.”

Susan Strange defines structural power as the power to shape and determine the structures of the global political economy within which other states (Strange, 1994), their political and legal institutions, and their economic enterprises interact. This can be understood as the power to define the rules of the game or the explicit or implicit norms of behavior. Strange then identifies four key power structures in the global economy which are (1) security, (2) production, (3) finance and (4) knowledge. Among these, it defined the financial structure as the core of global economic governance, hence the relevance of international financial markets (which can acquire their own dynamics (Strange, 1986; Strange, 1998)) and of a multilateral development bank like the NDB, especially since the latter was not created by Western Powers. This is particularly important considering that “structural power” has a close connection with the concept of “hegemony” (Katzenstein et al., 1998). It also argues that the financial structure of the global economy rests on two pillars, the political economy structures through which credit is created and in which power is shared by governments and banks, and a second pillar consisting of national monetary systems creating the global superstructure (Strange, 1994).

But Susan Strange analysis is not without raising a certain number of questions. The first is that such an approach has an unintentional character. This means that the different strategies of the actors or long-term projects are not taken into account. The second is that it is too narrow and excludes the ability to shape international trade institutions. The third focuses on an insufficient theoretical explanation of the causal mechanisms of structural power.

Yet the notion of “structural power” is of central importance, even more so when we remember that Strange defined it as the power to shape and determine the structures of the global political economy, a power that is now more crucial than

ever. The problems raised undoubtedly concern more than one form of incompleteness of the theory developed by Susan Strange. They do not question the central importance of the concept of structural power. What is really important for us is to understand how the creation of the NDB by the “structural power” of BRICS affected the financial structure visible in the shift from “power to influence” to “power to harm”.

For 15 years we have been confronted with a declining superpower (the United States) which has attempted to maintain a residual capacity to influence international decisions, either by joining forces with other Western countries or through unilateral actions. On the other hand, we have contesting powers, the BRICS countries, which have gradually moved from a form of relative compatibility, which is not an identity, with the old vision of superpower to an obvious incompatibility and even to the expression of openly contradictory opinions. It is this conflict, or at least this clash of divergent interests, that is important here.

No one would dispute that the United States and, globally, the so-called “Collective West” had, and still has, a strong, if largely eroded, structural power of their own, especially regarding the financial structures that they were accustomed to completely dominating. It remains to be seen whether the BRICS countries have reached the point where they, too, will have significant structural power in this area with the capacity to challenge Western hegemony. There has been major a global shift here (Roberts et al., 2017).

Unquestionably, the rise of BRICS in the field of development financing has been significant (Schirm, 2010). As described above, the NDB has developed different types of partnerships, in different areas, and has acquired an extremely important level of competence and credibility. This implies a level of confidence never before experienced by countries attempting to challenge the hegemonic power(s) of the West. This shows that the new actors no longer see the compatibility

of interests and ideas with the old dominant ones.

This is a new and important development. Two of the major BRICS countries, China and India, appeared to share ideas and representations with the “Global West” in the 1990s and early 2000s (Ju, 2018). The same can be said for Russia, at least until the financial crisis of 2008–2010. Whatever conflict of interests may have existed in other areas (and one of the most important was the civil war in the former Yugoslavia and the Kosovo question in 1998–1999), Russia had accepted the American financial hegemony and had tried to make the best use of it. But after the “subprime crisis”, the situation began to quickly change. One author focused on the advice provided by the IMF during the 2008–2010 crisis to explain that a conflict could then have broken out and that this could explain the transition from compatibility to incompatibility (Chin, 2010). In reality, the conflict between Russia and the IMF is much older than that, dating back to the Russian financial crash of 1998 (Sapir, 1998; Sapir, 1999a; Sapir, 1999b). But this conflict did not prevent Russia, once its situation had stabilized, from resorting to global financial markets and, in general, from playing the game of financial globalization at least until 2010/2012. It is therefore from the “subprime crisis” that an awareness of the incompatibility of Russia’s interests with the hegemony exercised by the United States in the financial and commercial fields dates. Here we must take up the possible reasons for a policy of “rupture”, we will call it below a policy of “exit”, on the part of the BRICS countries.

A possible explanation lies in the failure of Western states, and in particular the United States, to deal with this crisis. This assessment could have been shared at least by China, India and Russia, and could have convinced China to build what has been called the “Great Wall of Money” (Chin, 2014). This was noticed to a certain extent by B. Bernanke himself<sup>30</sup>.

<sup>30</sup> Bernanke B. (2015). China’s gold star. Available at: <http://www.brookings.edu/blogs/ben-bernanke/posts/2015/12/01-chinas-gold-star>.

Another possible explanation could be the trend towards increasing politicization of the economy, which became evident since 2014–2016, first with the implementation of sanctions against Russia (2014), Iran, then with the trend to the unilateral use of the dollar position by the United States which was described at the beginning of the first part of this article.

Whatever the dominant cause, and it must be remembered that the two can combine, the change is now evident. Even though we are still quite far from the talk of “de-dollarization” and the creation of a “common BRICS currency”<sup>31</sup>, it is clear that the BRICS countries have assumed an offensive stance against the post-Bretton Woods world order.

Strange’s structural power approach focuses on determining the social capabilities of different actors. This approach, when complemented by a constructivist approach to international normative structures, can prove very useful when considering the new role of BRICS in global governance. We can see a step towards a good institutional indicator of BRICS performance in global economic governance.

Yet fully analyzing the emergence of BRICS in global governance requires a new structural approach to power. Here we should mention Douglass North who could give us some clues about the trade-off that underlies the process of creating a new institution versus the process of attempting to change, or evolve, the existing institution (North, 1990). But it is even more fruitful to rely on Alfred Hirschman’s concept of “exit pressure against the use of voice”. This concept allows us to understand the path taken by BRICS countries in using their growing “structural power”. It enables us to better understand the evolution of their position toward “Global West” generated institutions from the beginning in 2005 to the current situation.

<sup>31</sup> BRICS currency “plausible alternative” to dollar hegemony. Available at: <https://www.globaltimes.cn/page/202305/1290700.html>

Hirschman’s concept is centered on the exit-voice pair, to which can be added “loyalty” (Hirschman, 1970). It implies that the cost of leaving a group or a given institution is represented by the risk of a situation of fragmented multilateralism, and where the cost of an insufficient “voice” would mean a reduced capacity to influence the principles and procedures of development financing, and then to accept decisions which are not good for its own interests.

This couple is established when one member demands increased decision-making power and is ready to assume the cost by increasing the resources it puts into the system while being authorized to do so by the dominant actors (here “the Collective West” or what we call the “Global West”). In the present case of BRICS, their demand for increased decision-making power within global governance institutions increased their latent discontent to the extent that the dominant countries seemed unwilling to listen to their “voice”. This led to the search for alternative means to strengthen their power by creating institutions parallel to the institutions established, directed and generated by the West.

The New Development Bank, seen from this angle, can be seen as a materialization of the “exit” option. BRICS countries have chosen an alternative option rather than trying to influence – through “voice” – existing institutions. But they did so at the cost of fragmented multilateralism. What is interesting then is why the BRICS countries have chosen this option and explored it further in recent years. During the initial phase of BRICS existence (2006–2012), it seems that they tried to make Western countries listen to them. In fact, they were not taken seriously, at least at first.

A possible interpretation could be that, seeing their demands for more equality within international institutions globally rejected or ignored and on the other hand the inability of the United States and other countries to calm and control the

“crisis of subprimes”, the BRICS countries have deliberately chosen an exit strategy. But, even after making this choice, they tried to present the NDB as complementary to existing financial institutions (Shetiya, 2017), as a kind of mixed strategy combining “voice AND exit”, at least until 2016/17, before turning away from it and to start challenging them directly. This would mean that BRICS countries exercised a considerable degree of caution and only decided on a full “exit” strategy after being convinced that no other options existed.

This also raises the question of understanding why the countries of the “Global West” neither knew nor wanted to hear the demands of these countries and locked themselves into their certainties of always being able to have the means of control over the global economy. The announcement at the BRICS 16th summit in Kazan<sup>32</sup> of the creation of the BRICS-Clear system<sup>33</sup>, of a common BRICS company for insurance and re-insurance<sup>34</sup> and the organization of a foodstuff market to complement and even replace the Chicago’s one is showing that BRICS structural power is indeed on the rise. It confirms that adoption of an “exit” strategy has become the main way for BRICS countries, even if they still commit to some other institutions, like the United Nations Organisation<sup>35</sup>, but with making some strong recommendations for them, a good

example of a “voice” strategy backed by the previous example of an “exit” one. It seems then that BRICS countries are aware of the “Global West” residual structural power and don’t want to enter into a logic of global confrontation.

### **What is the New Development Bank for in this context ?**

We must then gradually move from economics to politics, more or less along the same path as Susan Strange described. In the long struggle to make global governance just and fair toward “Global South” countries (Larionova, Shelepov, 2022), could the New Development Bank play a decisive role? Is the New Development Bank really different in its structure and practices from the international institution<sup>36</sup> generated by the “Global West” and does it represent a real alternative<sup>37</sup>? In other words, is the difference limited to the fact that the NDB is a “non-Western” institution OR is the NDB also different because it relies on different rules, and perhaps more favorable to emerging countries?

The Bretton Woods institutions were created under American hegemony. Even if it is less clear for the WTO, we can say that American influence was extremely strong in the passage of the GATT as it existed in the early 1960s and the WTO. Their weight was very strong in the establishment of internal rules of the WTO. This is not surprising if we consider the balance of power in 1944 or the early 1980s. We must not forget the importance of the “Washington Consensus” in shaping the decisions of the IMF and the World Bank in the 1990s. This had serious consequences, particularly in Russia (Sapir, 2000b). But the creation of the

<sup>32</sup> Kazan Declaration: “Strengthening Multilateralism for Just Global Development and Security”. Available at: <http://static.kremlin.ru/media/events/files/en/RosOySvLzGaJtmx2wYFv01N4NSPZploG.pdf>; <https://www.mea.gov.in/bilateral-documents.htm?dtl/38450/Kazan+Declaration++Strengthening+Multilateralism+For+Just+Global++Development+And+Security>

<sup>33</sup> Kazan Declaration, #65, #66, #67; BRICS states to study possibility of establishing BRICS Clear infrastructure – Declaration. Available at: <https://tass.com/world/1860743>; BRICS summit: Key takeaways from the Kazan declaration. Available at: <https://www.reuters.com/world/factobox-main-points-brics-declaration-2024-10-23/>; Ledger Insights – Blockchain for business. BRICS+ expands plans from DLT payments to DLT clearing and depository”. Available at: <https://www.ledgerinsights.com/brics-expands-plans-from-dlt-payments-to-dlt-clearing-and-depository/>

<sup>34</sup> Kazan Declaration, #66.

<sup>35</sup> Kazan Declaration, #8, #11, #15.

<sup>36</sup> Kasahara S. BRICS New Development Bank: Its birth & major implications to international political economy. Available at: <https://www.semanticscholar.org/paper/BRICS-New-Development-Bank%3A-Its-Birth-%26-Major-to-Kasahara/01ab0d7c433df04b4ecc4a71c44ddc0998eb1eb6>

<sup>37</sup> Toussain E. Are the BRICS and their New Development Bank offering alternatives to the World Bank, the IMF and the policies promoted by the traditional imperialist powers? Available at: <https://www.cadm.org/Are-the-BRICS-and-their-New-Development-Bank-offering-alternatives-to-the-World>

NDB took place in a very different context and we must go back to the creation of the NDB and its development.

As we have already said, the creation of a New Development Bank was first considered by the BRICS countries in 2012, but the formal agreement was not signed until 2014 in Fortaleza and the inaugural meeting of the board of directors took place on July 7, 2015<sup>38</sup>. The NDB became operational in 2016 with its headquarters in Shanghai<sup>39</sup>. It opened its first regional offices, the first dedicated to Africa<sup>40</sup>, in 2017, followed by a second regional office in 2019 in São Paulo, then another office in India and Russia. In 2021, it welcomed two additional members (Bangladesh, United Arab Emirates) and a third in 2023 (Egypt). At that time, these new members were not members of BRICS. Uruguay also had the status of a “potential member”, which was admitted by the Board of Governors of the NDB and will officially become a member country once it deposits its instruments of accession<sup>41</sup>. The NDB has an initial authorized capital of 100 billion USD, divided into one million shares with a par value of one hundred thousand dollars each.

The founding members of NDB carried out an initial subscription of five hundred thousand shares for a total of 50 billion USD, including one hundred thousand shares corresponding to a paid-up capital of 10 billion USD and four hundred thousand shares corresponding to a callable capital of 40 billion USD. The initial subscribed capital was distributed equally among the founding members. Membership in the Bank is open to all members of the United Nations, which means that the bank expects a large number of future memberships. The bank’s strategy

<sup>38</sup> Agreement on the New Development Bank – Fortaleza, July 15. Available at: <https://www.ndb.int/wp-content/themes/ndb/pdf/Agreement-on-the-NewDevelopment-Bank.pdf>

<sup>39</sup> <https://www.wsj.com/articles/brics-agree-to-base-development-bank-in-shanghai-1405453660>

<sup>40</sup> <https://www.ndb.int/about-ndb/history/>

<sup>41</sup> <https://www.ndb.int/about-ndb/members/>

was quickly defined and objectives were set for the years to come<sup>42</sup>. It signed its first loan at the end of 2016<sup>43</sup> and its loan portfolio quickly grew with the development of sovereign loans and loans with sovereign guarantee<sup>44</sup>. Emphasis was placed on national development and partnership with other financial institutions<sup>45</sup>. We are therefore facing an institution which aims to be truly international (not limited to the members of the BRICS) and which, at least in its texts, does not pose itself as an alternative, even if it begins, in reality, to constitute one.

It now remains to be seen what the diffusion of power is within the NDB. We can think that the diffusion of the power of this new institution could be conditioned on two main factors: first the size of the shareholders (China could appear as the dominant power) and then the relations between borrowers and lenders (Humphrey, 2014). But if these criteria are to be applied to the NDB, we see that the composition of the bank has a much more multilateral perspective than that of the IMF or the World Bank. The distribution of shareholding, initially equally between each BRICS member, bears witness to this. In addition, there is a community criterion which fits well into the perspective of an emerging market economy. The fact that there is no main shareholder and that the power of the NDB is not exercised in a single common region is one of the proofs of this (Cooper, 2017). The NDB presents itself as a unique case

<sup>42</sup> NDB’s General Strategy: 2017–2021. Available at: <https://www.ndb.int/wpcontent/uploads/2017/08/NDB-Strategy.pdf>

<sup>43</sup> <https://web.archive.org/web/20161230160655/http://www.ndb.int/NDB-SIGN%20-FIRST-LOAN-AGREEMENT-FOR-FINANCING.php#parentHorizontalTab2>

<sup>44</sup> New Development Bank policy on sovereign loans & loans with sovereign guarantee. Available at: <https://www.ndb.int/wpcontent/uploads/2017/02/Policy-on-Sovereign-Loansand-Loans-with-SovereignGuarantee.pdf>

<sup>45</sup> New Development Bank policy on partnerships with national development banks. Available at: <https://www.ndb.int/wpcontent/uploads/2017/02/Policy-on-Partnershipswith-National-Development-Banks.pdf>

among international financial organizations because it is not polarized, neither formally nor informally, by a single “dominant” country, but is in reality “multi-polarized”.

In terms of the borrower-lender relationship, existing multilateral development financial institutions have generally established two forms of mutually exclusive relationships: the borrower-lender relationship and the borrower-borrower relationship<sup>46</sup>. The first is strictly a dependency relationship that results in benefits for the lender. The NDB presents a non-mutually exclusive situation and is open to both types of scenarios. The bank’s borrowing strategy is both borrower-lender and borrower-borrower<sup>47</sup>, through the guarantees it grants. This has led to the development of financial products that bank members and non-members can access at market value<sup>48</sup>. The NDB therefore differs from the classic institutional paradigm established in other international financial institutions as observed by Chris Humphrey (Humphrey, 2015). These two conditions have become important variables that impact the level of power diffusion.

The structural power approach then provides a good framework for defining the interests and capabilities of shareholders (the BRICS themselves) and the new power relations created via lending programs that have new alternative practices, as shown in a very informative table that can be found in the recent article by (Duggan et al., 2022). From an analysis based on the memoranda of understanding on the lender’s side, they show that the structure of the NDB differs significantly from that of other Multilateral Development Banks

or MDBs (Hooijmaaijers, 2021). Its architecture is clearly innovative (Acioly da Silva, 2019). This contribute to shape the NDB’s strategy, not only in financial terms but also in terms of medium and long-term objectives. The NDB presents what is today a unique and homogeneous structure, where the shareholding structure of the historical (and founding) NDB members amounts to just over 18% per member, meaning that each of the BRICS shares a equal power. This allows each of its members to set an agenda with priorities for emerging economies. The NDB is quite obviously the materialization of emerging powers challenge to the “Global West” dominated global governance (Stephen, 2014). The same could be said of the China-led Asian Infrastructure Investment Bank (AIIB) that is frequently associated to the NDB (Andronova, Shelepov, 2019; Larionova, Kirton, 2018).

But the NDB also differs from the AIIB. While both banks were conceptually born from non-Western powers, China is dominant within the AIIB while the NDB focuses on equal shareholder power. It is also important to note that the NDB’s lending strategy differs from that of other MDBs, and in particular the World Bank. MDBs are providers of financial resources and, from this point of view, all that matters is how shareholders satisfy formal or informal economic and political conditions. The shareholder structure of Multilateral Development Banks has, in fact, a significant impact on the determination of the actions of these banks (Humphrey, 2016). Borrowing countries with recurring borrowing and having recorded fiscal improvements can modify the conditions required for trade. This results in an increase in the “voice” of these specific borrowers in MDB decision-making processes and a breakdown in borrower equality. The NDB, because it creates an alternative outside the current system of MDBs which until now defined the system of global economic governance, connects the two parties and offers the countries of

<sup>46</sup> New Development Bank policy on loans without sovereign guarantee to national financial intermediaries. Available at: <https://www.ndb.int/wpcontent/uploads/2017/02/ndb-policy-on-loans-without-sovereignguarantee-to-nationalfinancial-intermediaries-20160121.pdf>

<sup>47</sup> New Development Bank policy on loans to international organizations. Available at: <https://www.ndb.int/wp-content/uploads/2019/09/Policy-on-Loans-toInternational-Organisations.pdf>

<sup>48</sup> New Development Bank projects. Available at: <https://www.ndb.int/projects/list-of-allprojects/page/3/>

the “Global South” an alternative which possibly strengthens their capacity to negotiation whether with the IMF or the World Bank when it does not allow them to bypass these last two institutions.

This approach is interesting because it allows us to define the conditions that determine real change in terms of power structure. Of course, NDB is new in terms of its operations history, having started lending in late 2016 but it has reached a non-return point on its trajectory (Trajber-Waisbich, Borges, 2020). There are then some limitations to using this bank as a case study. But the relevance of this case study is inescapable as the NDB has seen its power and influence grow steadily over the past year. What is more, its symbolic dimension, as the first international financial institution created by countries belonging to what we today call the “Global South”, gives the NDB a special place within international financial institutions, being both a complement AND a challenge to already existing financial institutions. This promotes new rules and standards. But it is not the only issue related to the NDB creation.

The NDB has frequently seen as a possible challenge to the dollar<sup>49</sup>, in the wake of what is called a regionalization of the global economy (Novoselov, Faleev, 2023), and with the open aim in several countries to regain their global sovereignty (Arnold, 2020). The fact that the international monetary system has become dysfunctional is an open secret for years (Kondratov, 2015; Kondratov, 2017). The potential for what is called “de-dollarization” is quite important (Saaida,

2024; Liu, Papa, 2022; Aggarwal, 2020; Guliyeva, Rzayeva, 2017), and the more so when it is coupled with regional growth and an important impact on global growth (Parinenko, 2020). The BRICS have already fostered payment in national currencies for intra-BRICS trade but it raised some problems of compensation (Karataev et al., 2017). The fact that in a multi-polar world the dominant position of the US was to be contested has been acknowledged by different authors (Guttman, 2022; Levy-Yeyati, 2021; Li, 2023; Eichengreen, 2011), and the fact that it has been the target of some BRICS member is also obvious (Chen, 2023). However, such an aim could induce tremendous political consequences (Saaida, 2023), even if it could help other developing countries (Pham, 2017). The current Kazan summit (October 2024) decisions to implement the BRICS-Clear clearing system, combined to the creation of a BRICS insurance and re-insurance compagnie, is the actual proof that this organization harbours, more or less quietly great ambitions.

We have now to go back to the institutional generation capacity of BRICS countries and of their “structural power”. As a matter of fact we are probably beyond the “Voice or Exit” or the “Voice and Exit” strategy of the past years (Mazenda, Ncwadi, 2016). BRICS countries have most probably “crossed the Rubicon” and their path is now an open alternative (if not already leading to a kind of conflict) with the one of the “Global West”. The NDB therefore presents itself as a unique case for assessing the “structural power” of the BRICS. Talks about the Bretton Woods institutions failure or obsolescence have been aplenty. Still, so far it has just been talks. No country, or group of country, had the “structural power” to develop alternative institutions. The fact that BRICS achieved that with the NDB creation means two things. First, the “Global West” structural power has been seriously eroded since the 1997–1998 financial crisis. Remember that the USA has been able, by the to block a Japanese attempt to create a kind of “Asiatic

<sup>49</sup> Petro-Yuan or Petro-BRICS: The need for better alternative reserve currencies to break dollar dominance. Available at: <https://www.forbesindia.com/article/bharatiya-vidya-bhavan039s-spji...r-alternative-reserve-currencies-to-break-dollar-dominance/84063/1>; O’Neill J. A BRIC threat to the dollar? Available at: <https://www.project-syndicate.org/commentary/brics-plus-and-the-future-of-dollar-dominance-by-jim-o-neill-2023-04>; Russia, China plan to counter dollar dominance with BRICS payment system. Available at: <https://www.domain-b.com/economy/world-economy/russia-china-plan-to-counter-dollar-dominance-with-brics-payment-system>

IMF". But the NDB existence also shows that this BRICS "structural power" is very real and could be compared to that of the countries of the "Global West".

But, if the NDB creation confirms that now BRICS structural power is at least comparable to the one of the "Global West" there is another face to the coin. By its existence, and the financial operations it conducts, the NDB seems sufficiently different from those of other MDBs for it to have become an important pole of attraction, at least for the countries of what we call the "Global South" (Thirlwell, 2014; Thompson, de Wet, 2017). The fact that the "Global South" as reacted so well to BRICS initiatives since 2022/2023, and particularly to Kazan summit decisions and the creation of an official status of "partnership" to the BRICS gives us an indication of how well BRICS initiatives contained in the NDB creation and expansion have been received. This power of attraction therefore allows now the BRICS to strengthen their "structural power". Therefore, the analysis goes beyond the classic "cause-consequence" framework and becomes dialectical. If the "structural power" of the BRICS was sufficient for them to create and develop an institution like the New Development Bank, this in return boost them and gives them additional "structural power" of which only the future will tell us how it will be implemented.

### Conclusion

The development of the global economy since the late 1990s has led to dramatic changes in the balance of political and economic power. Far from signifying an "end of History", the end of the Cold War generated significant changes which now bring conflicts of interest, but also conflicts of representation and therefore clashes over norms and rules. The importance of these conflicts should not be underestimated. They will probably structure the world in the next twenty years.

The emergence of BRICS+ symbolizes one of the possible new structuring of the world. The fact that the BRICS+ countries were pushed into a logic

of open protest against the world dominated by the "Collective West", while initially they were just looking for acceptable modifications to this world, says as much about the rise in power of these countries than on the lack of intelligence of the G-7 countries which did not know how, and undoubtedly did not want to, grant them the place that logically deserved them in international institutions. The current logic of confrontation is largely the product of this incapacity, or this ill will.

The decreasing share of the G-7 and the "Global West" in global GDP and conversely the growth that "emerging powers" like China and India have experienced have probably pushed most economic institutions towards obsolescence. Global crises caused by the Second World War and the Cold War. The governance of the world economy fell into the hands of the West partly because of these objective changes and partly because of subjective factors such as unfortunate American policy, a generalization of the practice of unilateral sanctions – therefore illegal – and in part because of a reluctance, if not outright opposition, to reform existing global economic institutions in time. In the negotiation game between countries' use of "voice" and that of "exit" from the existing system, the solution of "exit" has slowly become dominant due to the combination of these factors.

It should be remembered that the BRICS countries were initially extremely reluctant to choose an "exit" strategy. If their "voices" had been listened to and heard in the early 2000s, it is likely that they would not have chosen such a strategy. But the "exit" option is not, and cannot be, complete until new institutions are created. The disappearance of "old" institutions is never complete before "new" institutions appear.

In this process, the impact of BRICS has been decisive. The fact that the BRICS countries have started to flex their muscles in terms of institution building with the creation of the NDB and now with the 16th BRICS summit in Kazan is extremely important. It is not a surprise that these countries

have focused on one financial institution – the NDB – which aims at supplementing and may be one day as replacing both the IMF and the World Bank. The New Development Bank, with its different set of rules and standards, probably shows that the collapse institutions created by the West is an unavoidable fact in the next 15 or 20 years to come. In this regard, the creation of the NDB constitutes a strategic turning point of prime importance. It is both a sign of the “structural power” acquired by these countries and an instrument for developing and strengthening this same structural power.

The choice of an “exit” strategy by the BRICS countries, and now BRICS+, does not, however, resolve one last question. Will the global economy move towards stabilized fragmentation, implying that “Western” institutions could survive, albeit in a reduced form, to manage the fragment represented by the “Western” economy, or new institutions, coming from the “Global South”, will they be able to confer on these countries the hegemony which would subsequently allow them to reunify the world economy around new rules of governance.

This remains to be seen and is part of history that remains to be written.

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## Interactions of Regional Economies and Multiplicative Effects (Using the Example of a Two-Zone Input-Output Model of Russia)



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**Abstract.** Currently, the key areas of Siberian economics include analyzing the economy and assessing the prospects of the Asian part of Russia. To achieve the goal, it is necessary to determine the contribution of the Asian part of Russia to the economy of other regions and the country as a whole. The aim of this work is to study the interaction of Russia's European and Asian parts. The input-output tables built in the Institute of Economics and Industrial Engineering, Siberian Branch of the Russian Academy of Sciences for the European and Asian economic zones as of 2019 allow us to assess the effects of regional interaction at the industry level using multiplicative analysis tools. The paper presents calculated regional and interregional coefficients of direct and total costs, as well as balance sheets reflecting the creation and use of products for European and Asian regions. The results of the study indicate that in the structure of direct costs of the European part of Russia, the weight of the Asian part is significant for the production of coke and petroleum products (about 44%), ferrous and non-ferrous metallurgy (about 15%) and other industries. In the structure of the total costs of the European part of Russia, a high proportion of the Asian part is observed for extractive industries, ferrous and non-ferrous metallurgy and oil refining industry, which is partly due to the specifics of recording the results of foreign trade. If we consider the balance of use of products from the Asian part of Russia, we see that 7.5% of the produced product goes to intermediate consumption and 3.0% is sent to meet the final demand of European regions. The results of the work can be used to measure the effects of public financing at the regional and federal levels. Due to the fact that indirect and full costs account for only those product flows that relate to intermediate consumption, it seems advisable in the future to elaborate on the methodology so as to include accounting for investment goods.

**Key words:** interregional interactions, multi-regional input-output models, European part of Russia, Asian part of Russia, multiplicative effect, direct and indirect costs.

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### **Introduction**

The knowledge of industry indicators concerning the structure and directions of costs, and the proportions of the use of manufactured products are crucial for conducting any serious analysis of national economy and assessing its development prospects amid the changes in technology, final consumption and foreign economic relations. The most comprehensive picture of the situation regarding Russia's economy as a whole is provided by the input-output tables produced by Rosstat on a regular basis. Designing such tables in the context of territories (regionalization) is currently a task for research teams who use the entire available set of direct and indirect data to this end.

The Institute of Economics and Industrial Engineering, Siberian Branch of the Russian Academy of Sciences (IEIE SB RAS) carries out this work so as to further use the tool of optimization multi-regional input-output models (OMRIOTs), which is actively applied in long-term forecasting of the development of national economy in spatial and sectoral aspects. Currently, the Institute's staff, using this tool, are pursuing the following goals: building long-term macroeconomic forecasts and their sectoral and spatial sections (Ershov, 2012); analyzing and forecasting the development of the fuel and energy complex of the Russian Federation (Suslov, Buzulutskov, 2018); analyzing and forecasting the development of the

Russian forest complex (Blam, Mashkina, 2019); analysing and forecasting the development of the Russian transport complex (Malov, Melentyev, 2022); coalition analysis, search for the core and equilibrium state of the spatial economy of the Russian Federation (Suslov et al., 2021); agent-based modeling (Tsyplakov, 2022); assessment of investment projects (Novikova et al., 2021).

Currently, a set of interrelated models is used to achieve these goals, which primarily includes static and semi-dynamic formulations of OMRIOT. The main purpose of the static model is to estimate exogenous parameters of the base year for subsequent use in the semi-dynamic model, which is the main tool for addressing the tasks listed above.

A static OMRIOT is constructed by spatial expansion of the all-Russian tables of resources and the use of goods and services using direct and indirect regional statistical indicators available in Russian statistics (Ershov et al., 2021). Thus, a static OMRIOT reflects the condition of the country's economic space in the base year. This allows us to explore the possibility of using static OMRIOTs not only to build the foundation of a semi-dynamic model, but also to measure the structure of production and the proportions of distribution of goods and services between industries and regions.

One of the goals of the calculations performed is to assess the effects of interactions between the economies of the European and Asian parts of Russia as of 2019. The relevance of the work is explained by the fact that the development specifics of the Asian part of Russia are among the most important components determining the development of Siberian economics. It is worth noting that the current version of OMRIOT fully corresponds to the research direction. This is reflected by the spatial context of the economy at the model level, namely: federal districts with the division of the Ural Federal District into two components – the Tyumen Region and the rest of the territory. We define the Tyumen Region, the

Siberian and Far Eastern federal districts as the Asian part of the country (Asia), and all other regions as the European part (Europe).

The results of the work allow us to obtain quantitative estimates of the features of economic interaction between these two macro zones, and the degree of their interdependence. In the future, it is planned to conduct a retrospective analysis of the interaction of the regions, which will allow us to identify and explain the changes that have taken place.

### Literature review

#### *Foreign experience*

An important step toward measuring the effects of interregional interactions is to assess input-output tables for regions. When solving this problem, economists tend to think within the framework of two paradigms (Oosterhaven, Hewings, 2014). The first paradigm is based on the construction of a single input-output table for all regions, which comprehensively reflects the interregional flows of intermediate products. In this case, an interregional input-output model is obtained, in which the balance of production and distribution of products in region  $r$  looks as follows:

$$X^r = \sum_{s=1}^R A^{rs} X^s + Y^r, r = \overline{1, m},$$

where  $A^{rs}$  – interregional direct cost coefficients,  $X^r, Y^r$  – regional output and end-use volumes, respectively (in a broad sense, including the balance of exports and imports, gross fixed capital formation, and reserves growth).

With this formulation of the model, it becomes necessary to estimate regional and interregional input coefficients. The most preferred approaches are based on the adjustment of national coefficients using regional indicators that are able to reflect information about the regions' "demand" for goods and services. To understand the general logic, let us consider location quotients, reflecting the specialization of a region in relation to the country.

If the value of the location quotient for region  $r$  is greater than one, then region  $r$  is more specialized than the country and can meet its own demand at its own expense. Otherwise, region  $r$  needs supplies from other regions. Therefore, the proportions of the spatial distribution of production in the region can be described as follows

$$a_{ij}^{rr} = \begin{cases} LQ_i^r a_{ij}^n, & \text{if } LQ_i^r < 1 \\ a_{ij}^n, & \text{if } LQ_i^r > 1 \end{cases}$$

$$a_{ij}^{sr} = \begin{cases} (1 - LQ_i^r) a_{ij}^n, & \text{if } LQ_i^r < 1 \\ 0, & \text{if } LQ_i^r > 1, \end{cases}$$

where  $a_{ij}^n$  – direct input coefficients in the country as a whole.

There are many variations of location quotients, but one of the most popular is an indicator proposed by A. Flegg (Flegg, Webber, 2000):

$$FLQ_{ij}^r = \lambda^r \left( \frac{x_i^r/x_i^n}{x_j^r/x_j^n} \right)$$

$$\lambda^r = \left( \log_2 \left[ \left( 1 + \frac{\sum_i x_i^r}{\sum_i x_i^n} \right) \right] \right)^\delta, \delta \in [0; 1],$$

where  $x_i^r$  – regional output in  $i$ -industry,  
 $x_i^n$  – corresponding indicator for the country as a whole.

His methodology is often used in the development of regional tables and models in countries such as South Korea (Flegg, Tohmo, 2013), Spain (Azorín et al., 2022), Sweden (Kronenberg, Fuchs, 2021), Japan (Fujimoto, 2018), Finland (Flegg, Tohmo, 2013), Ireland (Morrissey, 2016) and others. The relevance of this approach is characterized by the activity of research on its modification (Pereira-López et al., 2020; Pereira-López et al., 2021), including works that use machine learning and deep learning algorithms (Fukui, 2023).

In addition to location quotients, there is a group of methods that similarly determine spatial contributions by adjusting national coefficients. These include Regional Purchase Coefficients (Lahr et al., 2020), Regional Supply Percentages (Jackson,

Járosi, 2020), and Commodity Balance (Round, 1972). The presented methods are actively used in many countries, such as the UK, Finland, USA, Indonesia, etc.

A limitation of the presented approaches lies in the possibility of using them only for the economy represented in the context of two regions. In the case of a multi-regional economy, these methods are able to quantify how much a region produces independently ( $a_{ij}^{rr}$ ) and how much other regions produce for it ( $a_{ij}^{sr}$ ). The influence of one region on other regions ( $a_{ij}^{rs}$ ) cannot be determined by the presented approaches.

The second paradigm is to create separate tables for each region, after which it becomes necessary to calculate trade flows between regions. In this case, a multiregional input-output model is obtained, the balance of production and distribution of which is as follows<sup>1</sup>:

$$X^r = A^r X^r + Y^r + \sum_{s \neq r} (X^{rs} - X^{sr}), r = \overline{1, m},$$

where  $X^{rs}, X^{sr}$  – regional export and import volumes.

When applying this approach, an important step is to evaluate the “aggregate” coefficients of direct costs of the regions (technical coefficients). The difference between the coefficients of  $A^{rr}$  and  $A^r$  matrices is that the former characterizes the direct costs of this particular region, excluding products from other regions (interregional direct cost coefficients) and imported products (import coefficients), i.e.:

$$A^r = A^{rr} + \sum_{s \neq r} A^{sr} + A^{rm}.$$

The simplest way to assess these indicators is to equate them with national direct cost coefficients. For example, this approach was used in the USA (Isard, Keunne, 1953). However, many authors identify the need to adjust national coefficients for interregional price differences (Richardson, 1972) and industry aggregation (Shen, 1960).

<sup>1</sup> OMRIOT is a multiregional model.

If the total values of intermediate consumption by rows and columns are known, it is possible to use the RAS method (Stone, 1961), which is an iterative procedure for bi-proportional fitting of quadrants by rows and columns. For each product, the relative disparities by rows are calculated as follows:

$$r_i = \frac{x_{ij}^r}{\sum_j x_{ij}^r},$$

after which the values of change proportionally along the rows. Next, a similar procedure is performed for the columns:

$$c_j = \frac{x_{ij}^r}{\sum_i x_{ij}^r}.$$

As a result of several iterations, the values of regional intermediate consumption and, consequently, the values of regional technological coefficients  $a_{ij}^r$  are estimated. Moreover, there are several RAS modifications (for example, CRAS, GRAS) that are used to regionalize input-output tables in the Czech Republic (Holý, Šafr, 2023), the Netherlands (Junius, Oosterhaven, 2003; Mínguez, 2009), Taiwan (Liu et al., 2013), the United Kingdom (Wiedmann et. al., 2011), Japan (Gabela, 2020) and many other countries. It is worth noting that the RAS method can also be used to update the first quadrant of input-output tables, both national and regional (Oosterhaven, 1980).

There is a group of entropy methods that represent a mathematical programming problem, where weighted cross-entropy acts as the target functional (Lamonica et al., 2020):

$$\left\{ \begin{array}{l} H = \sum_i \frac{x_j^r}{\sum_j x_j^r} \sum_j a_{ij}^r \log_2 \left( \frac{a_{ij}^r}{a_{ij}^n} \right) \rightarrow \min_{a_{ij}^r} \\ \sum_j a_{ij}^r x_j^r = x_i^r \\ \sum_i a_{ij}^r = \gamma_j, \end{array} \right.$$

where  $a_{ij}^r, a_{ij}^n$  – direct cost coefficients of region  $r$  and country, respectively;

$x_i^r$  – output of industry  $i$  of region  $r$ ;

$\gamma_j$  – proportion of intermediate consumption in the output of industry  $j$ .

The essence of entropy methods is similar to the RAS procedure, which consists in the adjustment to known total values in rows and columns with minimal changes in the table structure.

The method of gravity models is quite popular for estimating regional export/import values. In the framework of this approach, the degree of inter-regional interactions can be characterized by the distance between regions (the smaller the distance, the stronger the interaction). This methodology is used in China (Mi et al., 2018), Brazil (Siroen et al., 2014), Iran (Tarahomi, Bazzazan, 2021), Japan (Greaney, Kiyota, 2020) and other countries.

If in interregional models the proportions of the regional product distribution are set exogenously (coefficients  $a_{ij}^{rr}$  and  $a_{ij}^{sr}$ ), then in the case of multi-regional models the corresponding indicators must be measured using calculated values of technological coefficients and interregional trade. The Moses – Chenery approach (Zhuoying, 2002) can be applied to this end. This method is used in this article; thus, its detailed description is given in the next section.

**Russian experience**

Russian practice has an experience of compiling regional tables, but their development was carried out in a different economic system and based on the methodology of the balance of national economy (BNE). So, for 1959, 1966, 1972, 1977, 1982 and 1987, input-output tables were constructed for all the union republics of the USSR. However, after the transition to the SNA, statistics authorities no longer assess regional tables.

After the collapse of the USSR, work on the creation of regional input-output tables intensified in the 2000s. Thus, regional balances were

constructed for the republics of Bashkortostan (Sayapova, 2004) and Buryatia (Dondokov et al., 2014), for the Far Eastern Federal District (Mikheeva, 2005), and for the system of federal districts of the Russian Federation as a whole (Zaitseva, 2002; Ershov et al., 2021).

If we talk about the key parameters of the regional tables, then to calculate the values of intermediate consumption, the structure of the all-Russian table was used as an initial approximation, after which the RAS procedure for balancing was performed. The import-export values were determined both by collecting information on interregional flows from enterprises, and by applying the basic equation of input-output balance and further correcting inconsistencies.

**Research methodology**

To achieve the set goal, it is proposed to modify the basic formulation of the Moses – Chenery model by considering “economic” industries (matrix  $K$ ) and highlighting imports (column vector  $M$ ). Mathematically, this can be described by the following matrix equation:

$$KX + M = GAX + GY,$$

where  $X$  and  $Y$  – column vectors (compositions of vectors  $X^r, Y^r$  respectively) of dimension  $(m \times n)$ ;  $A$  – quasi-diagonal matrix of dimension  $(m \times n) \times (m \times n)$ , the diagonal blocks of which are regional matrices of direct cost coefficients  $A^r$ ;  $G$  – trading coefficients matrix of dimension  $(m \times n) \times (m \times n)$ , consisting of  $m^2$  diagonal blocks (Dushenin et al., 2023).

Trading coefficient  $g_i^{rs}$  determines the share of region  $r$  in the internal use of the products of the  $i$ -th industry of region  $s$ . The internal use of region  $s$  is understood as the use (output plus import) minus the export-import balance of a given region  $S_i^s$ :

$$g_i^{rs} = \frac{x_i^{rs}}{x_i^s + m_i^s - S_i^s}.$$

For the economies of two regions (Europe and Asia), the block matrix model looks like this:

$$\begin{pmatrix} K^E & 0 \\ 0 & K^A \end{pmatrix} \begin{pmatrix} X^E \\ X^A \end{pmatrix} + \begin{pmatrix} M^E \\ M^A \end{pmatrix} = \begin{pmatrix} G^{EE} & G^{EA} \\ G^{AE} & G^{AA} \end{pmatrix} \begin{pmatrix} A^E & 0 \\ 0 & A^A \end{pmatrix} \begin{pmatrix} X^E \\ X^A \end{pmatrix} + \begin{pmatrix} G^{EE} & G^{EA} \\ G^{AE} & G^{AA} \end{pmatrix} \begin{pmatrix} Y^E \\ Y^A \end{pmatrix}.$$

From the constructed Moses – Chenery model, it is easy to distinguish the matrices of spatial multipliers of direct and total costs  $Q$  and  $B$ , respectively, each of which includes four blocks:

$$Q = \begin{pmatrix} Q^{EE} & Q^{EA} \\ Q^{AE} & Q^{AA} \end{pmatrix} = GA,$$

$$B = \begin{pmatrix} B^{EE} & B^{EA} \\ B^{AE} & B^{AA} \end{pmatrix} = (K - Q)^{-1}G.$$

The degree of interdependence and complementarity of the regions can be viewed from several angles. First, by the balance of use of products:

$$\begin{aligned} K^E X^E + M^E &= Q^{EE} X^E + Q^{EA} X^A + G^{EE} Y^E + G^{EA} Y^A, \\ K^A X^A + M^A &= Q^{AE} X^E + Q^{AA} X^A + G^{AE} Y^E + G^{AA} Y^A. \end{aligned}$$

In fact, this means that each region allocates its resources to its own intermediate and final consumption, as well as to the intermediate and final consumption of another region. This allows determining the “generosity” of the European and Asian parts of the Russian Federation.

Second, through the balance of product creation<sup>2</sup>:

$$\begin{aligned} X^E + M^E &= Q^{EE} X^E + Q^{AE} X^E + GVA^E + M^E, \\ X^A + M^A &= Q^{EA} X^A + Q^{AA} X^A + GVA^A + M^A. \end{aligned}$$

In fact, this means that the resources of each region include production costs of all regions, production activities income (GVA), and imports. This will determine the “importance” of the European and Asian parts of the Russian Federation.

<sup>2</sup> GVA – gross value added.

Table 1. Trading coefficients as of 2019

Industry	Europe (r)		Asia (r)	
	Europe (s) $g^{EE}$	Asia (s) $g^{EA}$	Europe (s) $g^{AE}$	Asia (s) $g^{AA}$
Agricultural industry	0.994	0.000	0.006	1.000
Forestry and logging	0.812	0.000	0.188	1.000
Fish farming and fishing	0.520	0.000	0.480	1.000
Coal mining	0.116	0.000	0.884	1.000
Oil production	0.594	0.000	0.406	1.000
Gas production	0.265	0.000	0.735	1.000
Extraction of ferrous metal ores	1.000	0.322	0.000	0.678
Extraction of non-ferrous metal ores	0.557	0.000	0.443	1.000
Extraction of other minerals	0.772	0.000	0.228	1.000
Food industry	1.000	0.304	0.000	0.696
Light industry	1.000	0.253	0.000	0.747
Woodworking	0.999	0.000	0.001	1.000
Pulp and paper industry	1.000	0.221	0.000	0.779
Printing and copying	1.000	0.548	0.000	0.452
Coke production	0.936	0.000	0.064	1.000
Production of petroleum products	0.992	0.000	0.008	1.000
Chemical industry	1.000	0.237	0.000	0.763
Other non-metallic mineral products	1.000	0.468	0.000	0.532
Ferrous metals	1.000	0.435	0.000	0.565
Non-ferrous metals	0.728	0.000	0.272	1.000
Production of finished metal products	1.000	0.580	0.000	0.420
Mechanical engineering	1.000	0.277	0.000	0.723
Other productions	1.000	0.018	0.000	0.982
Electricity generation and distribution	0.852	0.000	0.148	1.000

Source: own calculations.

### Calculation results

*Table 1* shows the values of trading coefficients for the European and Asian parts of the Russian Federation. As we see, the Asian part of Russia supplies itself with almost all types of minerals, which is confirmed by the single values of  $g^{AA}$  coefficients and zero values of  $g^{EA}$  coefficients for the respective industries. In addition, for many types of extractive products, the contributions of this region to the European part of Russia are so significant that they approach unity (values of coefficients  $g^{AE}$ ). In fact, this situation means that the Asian part of Russia is characterized by excessive

output of raw materials and Asia is the only supplier of raw materials.

Essentially, the reason for such resource dependence lies in regional specialization due to geographical location. However, it is important to consider the directions of using the resources of the East. For example, Asia's high contributions of oil and gas products to Europe are related to the specifics of registering the results of foreign trade activities (the main part of oil and gas exports belongs to the Central Federal District – Moscow). In addition, it is necessary to point out the refining and petrochemical specialization of the European part of Russia.

Table 2. Spatial multipliers of direct costs as of 2019

Industry	Europe (s)		Asia (s)	
	Europe (r) $Q^{EE}$	Asia (r) $Q^{EA}$	Europe (r) $Q^{AE}$	Asia (r) $Q^{AA}$
Agricultural industry	0.484	0.004	0.041	0.444
Forestry and logging	0.479	0.022	0.026	0.502
Fish farming and fishing	0.388	0.013	0.029	0.376
Coal mining	0.474	0.077	0.025	0.515
Oil production	0.107	0.013	0.004	0.103
Gas production	0.166	0.008	0.003	0.081
Extraction of ferrous metal ores	0.322	0.054	0.017	0.366
Extraction of non-ferrous metal ores	0.402	0.068	0.022	0.445
Extraction of other minerals	0.282	0.047	0.015	0.319
Food industry	0.708	0.010	0.071	0.657
Light industry	0.633	0.003	0.097	0.574
Woodworking	0.593	0.035	0.038	0.650
Pulp and paper industry	0.596	0.015	0.067	0.589
Printing and copying	0.665	0.003	0.138	0.569
Coke production	0.543	0.238	0.010	0.788
Production of petroleum products	0.493	0.215	0.009	0.709
Chemical industry	0.646	0.012	0.089	0.582
Other non-metallic mineral products	0.621	0.044	0.117	0.534
Ferrous metals	0.635	0.094	0.092	0.643
Non-ferrous metals	0.449	0.067	0.066	0.459
Production of finished metal products	0.647	0.032	0.151	0.561
Mechanical engineering	0.701	0.013	0.157	0.569
Other productions	0.595	0.017	0.101	0.535
Electricity generation and distribution	0.629	0.085	0.011	0.655
Gas production and distribution	0.569	0.078	0.010	0.596
Production and distribution of thermal energy	0.648	0.088	0.011	0.685
Water supply, waste collection and disposal	0.589	0.030	0.062	0.560
Construction	0.551	0.014	0.115	0.455
Trade and repair of ATSiM	0.412	0.007	0.011	0.423
Land transport	0.472	0.009	0.015	0.468
Pipeline transport	0.580	0.012	0.019	0.555
Other transport	0.586	0.003	0.015	0.528
Hotels and catering	0.557	0.007	0.066	0.494
Information and communication	0.488	0.001	0.019	0.474
Financial and insurance activities	0.308	0.000	0.004	0.306
Real estate transactions	0.233	0.003	0.010	0.226
Professional, scientific, and technical activities	0.428	0.002	0.031	0.406
Administrative activities and related services	0.264	0.001	0.012	0.250
Public administration	0.369	0.002	0.013	0.352
Education	0.209	0.004	0.009	0.199
Healthcare	0.363	0.003	0.037	0.331
Culture, sports, leisure, entertainment	0.410	0.004	0.019	0.394
Other types of services	0.407	0.002	0.027	0.382
Activities of households	0.000	0.000	0.000	0.000
Source: own calculations.				

However, one should not conclude that the resource potential of this region plays a crucial role in the economic development of the entire system, since the high values of  $g^{BE}$  coefficients for minerals characterize only their absence in Europe (this may extend to other industries in other regions). More informative results were obtained at the end of the study when the structures of creation and use of a regional product were analyzed.

Table 2 shows the spatial multipliers of direct costs (amounts by columns). Let us interpret the results obtained using the example of the “Oil production” industry for the European part of Russia: if the demand for the output of the corresponding industry for Europe increases by 1 ruble, then intermediate consumption in the European part of the Russian Federation will increase by 0.107 rubles (regional multiplier), in the Asian part of the Russian Federation – by 0.013 rubles (interregional multiplier), in the Russian Federation in total – by 0.120 rubles (national multiplier).

Analyzing the spatial multipliers of direct material costs, one can notice a high share of the Asian part of Russia in the structure of direct costs of the European part for the industries “Coke production” and “Production of petroleum products”. This is due to Europe’s specialization in the sectors whose production requires raw materials resources, which Asia possesses. We also point out a high share of Europe in the structure of direct costs in Asia for industries such as “Light industry”, “Chemical industry”, and others.

Table 3 shows the spatial multipliers of total costs (amounts by columns). Let us interpret the results obtained using the example of the “Oil production” industry for the European part of Russia: if the demand for final consumption of products of the corresponding industry for Europe increases by 1 ruble, then material costs in the European part of the Russian Federation will increase by 0.701 rubles (regional multiplier), in the Asian part of the Russian Federation – by 0.477 rubles (interregional multiplier), in total in the Russian Federation – by 1.178 rubles (national multiplier).

Table 3. Spatial multipliers of total costs as of 2019

Industry	Europe (s)		Asia (s)	
	Europe (r) $B^{EE}$	Asia (r) $B^{EA}$	Europe (r) $B^{AE}$	Asia (r) $B^{AA}$
Agricultural industry	1.943	0.056	0.180	1.830
Forestry and logging	1.594	0.469	0.145	1.975
Fish farming and fishing	0.679	0.770	0.061	1.500
Coal mining	0.334	1.682	0.132	1.879
Oil production	0.701	0.477	0.021	1.154
Gas production	0.362	0.850	0.017	1.143
Extraction of ferrous metal ores	1.600	0.109	0.584	1.130
Extraction of non-ferrous metal ores	0.980	0.869	0.113	1.751
Extraction of other minerals	1.075	0.413	0.067	1.476
Food industry	2.492	0.061	0.983	1.634
Light industry	2.367	0.046	0.876	1.624

End of Table 3

Industry	Europe (s)		Asia (s)	
	Europe (r) $B^{EE}$	Asia (r) $B^{EA}$	Europe (r) $B^{AE}$	Asia (r) $B^{AA}$
Woodworking	2.224	0.138	0.198	2.293
Pulp and paper industry	2.281	0.095	0.732	1.722
Printing and copying	2.462	0.059	1.582	0.980
Coke production	1.613	0.570	0.001	2.213
Production of petroleum products	1.738	0.381	0.053	2.103
Chemical industry	2.402	0.116	0.849	1.717
Other non-metallic mineral products	2.311	0.152	1.291	1.151
Ferrous metals	2.352	0.270	1.233	1.398
Non-ferrous metals	1.467	0.654	0.253	1.883
Production of finished metal products	2.420	0.167	1.629	0.994
Mechanical engineering	2.688	0.108	1.212	1.618
Other productions	2.324	0.098	0.448	2.039
Electricity generation and distribution	1.958	0.551	0.091	2.266
Gas production and distribution	2.219	0.291	0.001	2.283
Production and distribution of thermal energy	2.333	0.268	0.087	2.348
Water supply, waste collection and disposal	2.244	0.154	0.265	2.129
Construction	2.177	0.093	0.396	1.896
Trade and repair of ATSiM	1.761	0.027	0.075	1.735
Land transport	1.895	0.078	0.098	1.862
Pipeline transport	2.104	0.096	0.118	2.023
Other transport	2.190	0.082	0.101	2.027
Hotels and catering	2.135	0.045	0.252	1.929
Information and communication	1.946	0.024	0.123	1.855
Financial and insurance activities	1.513	0.009	0.034	1.489
Real estate transactions	1.431	0.028	0.056	1.393
Professional, scientific, and technical activities	1.790	0.021	0.133	1.707
Administrative activities and related services	1.497	0.023	0.063	1.437
Public administration	1.742	0.034	0.097	1.657
Education	1.415	0.029	0.058	1.373
Healthcare	1.765	0.039	0.174	1.641
Culture, sports, leisure, entertainment	1.786	0.038	0.113	1.705
Other types of services	1.771	0.028	0.131	1.666
Activities of households	1.000	0.000	0.000	1.000

Source: own calculations.

If we analyze the structures of direct and total costs of the European part of Russia for the “Oil production” industry, we can see a high share of Asia in the total costs of Europe and a low share in direct costs. This is due to the fact that most of the oil is exported (given the specifics of registering foreign trade results, such values of the multipliers are quite logical).

Tables 4 and 5 show the product use balances for the European and Asian parts of the Russian Federation, respectively. We interpret the results obtained using the example of the economy of the European part of the Russian Federation as a whole: out of 100% of the products produced and imported by Europe, 42.8 and 55.4%

are spent within the region on intermediate and final consumption, while 0.8 and 0.9% go to meet the corresponding needs of the Asian part.

Considering the balance of the Asian part, we see that this economic zone sends about 10.5% of the produced product to Europe. This is due to the high level of the raw material base, which is demonstrated by the importance of Asia’s interregional influence in the relevant industries. If we talk about the contribution of the European part, it is most significant for the industries such as “Printing and copying”, “Other mineral non-metallic products” and “Production of finished metal products”.

Table 4. Balance of use of goods and services in the European part of the Russian Federation as of 2019, %

Industry	IC for Europe	IC for Asia	FC for Europe	FC for Asia
Agricultural industry	62.6	0.0	37.4	0.0
Forestry and logging	66.0	0.0	34.0	0.0
Fish farming and fishing	61.2	0.0	38.8	0.0
Coal mining	88.8	0.0	11.2	0.0
Oil production	66.1	0.0	33.9	0.0
Gas production	77.4	0.0	22.6	0.0
Extraction of ferrous metal ores	25.7	3.4	67.4	3.5
Extraction of non-ferrous metal ores	50.8	0.0	49.2	0.0
Extraction of other minerals	68.2	0.0	31.8	0.0
Food industry	24.3	1.2	69.9	4.6
Light industry	21.0	0.8	74.2	4.0
Woodworking	44.2	0.0	55.8	0.0
Pulp and paper industry	60.9	2.1	35.8	1.3
Printing and copying	89.2	9.0	1.6	0.2
Coke production	65.8	0.0	34.2	0.0
Production of petroleum products	49.5	0.0	50.5	0.0
Chemical industry	56.8	2.6	39.2	1.4
Other non-metallic mineral products	77.7	10.5	10.8	1.0
Ferrous metals	53.3	5.6	38.6	2.5
Non-ferrous metals	68.8	0.0	31.2	0.0
Production of finished metal products	59.2	8.0	29.0	3.7
Mechanical engineering	38.8	2.2	54.3	4.7
Other productions	47.9	0.3	51.6	0.3
Electricity generation and distribution	62.6	0.0	37.4	0.0
<b>ECONOMY AS A WHOLE</b>	<b>42.8</b>	<b>0.8</b>	<b>55.4</b>	<b>0.9</b>

Source: own calculations.

Table 5. Balance of use of goods and services in the Asian part of the Russian Federation as of 2019, %

Industry	IC for Europe	IC for Asia	FC for Europe	FC for Asia
Agricultural industry	2.0	50.5	1.2	46.3
Forestry and logging	23.1	35.3	11.9	29.7
Fish farming and fishing	26.5	11.1	16.7	45.7
Coal mining	33.0	15.3	4.2	47.6
Oil production	18.9	19.1	9.7	52.3
Gas production	19.9	11.1	5.8	63.2
Extraction of ferrous metal ores	0.0	49.0	0.0	51.0
Extraction of non-ferrous metal ores	9.8	9.1	9.5	71.5
Extraction of other minerals	18.9	34.0	8.8	38.3
Food industry	0.0	21.1	0.0	78.9
Light industry	0.0	17.4	0.0	82.6
Woodworking	0.1	45.4	0.1	54.4
Pulp and paper industry	0.0	62.1	0.0	37.9
Printing and copying	0.0	97.8	0.0	2.2
Coke production	9.8	49.3	5.1	35.9
Production of petroleum products	1.3	48.6	1.3	48.8
Chemical industry	0.0	64.4	0.0	35.6
Other non-metallic mineral products	0.0	91.6	0.0	8.4
Ferrous metals	0.0	68.9	0.0	31.1
Non-ferrous metals	26.9	23.8	12.2	37.0
Production of finished metal products	0.0	68.2	0.0	31.8
Mechanical engineering	0.0	32.2	0.0	67.8
Other productions	0.0	50.3	0.0	49.7
Electricity generation and distribution	2.0	50.5	1.2	46.3
<b>ECONOMY AS A WHOLE</b>	<b>7.5</b>	<b>35.2</b>	<b>3.0</b>	<b>54.3</b>
Source: own calculations.				

Tables 6 and 7 show the balances of products creation for the European and Asian parts of the Russian Federation, respectively. Let us interpret the results obtained using the example of the economy of the European part of the Russian Federation as a whole: if we consider the manufactured and imported product together, then 100% of its value includes 42.1 and 2.3% of the material costs of Europe and Asia, respectively, 45.8% of gross value added and 9.8% of imports.

The contribution of the Asian part of the Russian Federation to the European one is quite high in the structure of use; however, the share of costs incurred by Asia for Europe in the structure

of product creation is much lower, which is comparable with the proportions of production in the corresponding economic zones. Significant contributions from the Asian part of the Russian Federation are observed for the oil refining industry, metallurgy and energy. Significant contributions from the European part of the Russian Federation are typical for the industries such as “Printing and copying”, “Construction”, “Other mineral non-metallic products”, “Production of finished metal products”, etc.

The first calculations based on the two-zone model of the input-output balance were carried out at IEIE SB RAS more than 30 years ago. But then there was another object of research – the country

Table 6. Balance of creation of goods and services in the European part of the Russian Federation as of 2019, %

Industry	MP from Europe	MP from Asia	GVA	Imports
Agricultural industry	42.0	0.3	47.1	10.6
Forestry and logging	45.1	2.0	51.7	1.1
Fish farming and fishing	33.0	1.1	52.5	13.3
Coal mining	36.5	5.9	34.6	23.1
Oil production	10.4	1.3	85.1	3.3
Gas production	12.1	0.6	59.8	27.5
Extraction of ferrous metal ores	30.9	5.2	59.8	4.1
Extraction of non-ferrous metal ores	34.3	5.7	45.2	14.8
Extraction of other minerals	27.6	4.6	65.8	2.0
Food industry	63.1	0.9	23.4	12.5
Light industry	22.4	0.1	13.6	63.9
Woodworking	55.3	3.3	35.2	6.2
Pulp and paper industry	51.0	1.3	30.2	17.5
Printing and copying	65.0	0.3	33.0	1.7
Coke production	53.5	23.4	21.5	1.6
Production of petroleum products	48.1	20.9	28.4	2.6
Chemical industry	43.1	0.8	22.6	33.5
Other non-metallic mineral products	55.6	4.0	30.5	9.9
Ferrous metals	59.3	8.7	25.3	6.7
Non-ferrous metals	40.5	6.0	43.6	9.9
Production of finished metal products	54.8	2.7	26.7	15.8
Mechanical engineering	38.1	0.7	16.8	44.4
Other productions	45.8	1.3	31.6	21.3
Electricity generation and distribution	62.8	8.5	28.6	0.1
Gas production and distribution	56.9	7.8	35.3	0.0
Production and distribution of thermal energy	64.7	8.7	26.5	0.1
Water supply, waste collection and disposal	63.9	3.2	30.5	2.4
Construction	53.2	1.4	42.7	2.8
Trade and repair of ATSiM	41.4	0.7	57.9	0.0
Land transport	46.5	0.9	51.2	1.4
Pipeline transport	57.3	1.1	40.3	1.3
Other transport	55.0	0.3	38.5	6.2
Hotels and catering	55.2	0.7	43.2	1.0
Information and communication	44.1	0.1	46.2	9.6
Financial and insurance activities	30.0	0.0	67.2	2.8
Real estate transactions	23.2	0.3	76.2	0.2
Professional, scientific, and technical activities	39.4	0.2	52.6	7.9
Administrative activities and related services	21.2	0.1	58.9	19.8
Public administration	29.3	0.2	70.5	0.0
Education	20.1	0.4	78.1	1.4
Healthcare	32.4	0.2	67.2	0.1
Culture, sports, leisure, entertainment	40.8	0.4	58.4	0.4
Other types of services	40.4	0.2	58.9	0.5
Activities of households	0.0	0.0	100.0	0.0
<b>ECONOMY AS A WHOLE</b>	<b>42.1</b>	<b>2.3</b>	<b>45.8</b>	<b>9.8</b>
Source: own calculations.				

Table 7. Balance of creation of goods and services in the Asian part of the Russian Federation as of 2019, %

Industry	MP from Europe	MP from Asia	GVA	Imports
Agricultural industry	3.6	38.8	47.6	10.0
Forestry and logging	2.4	47.6	49.4	0.5
Fish farming and fishing	2.8	36.5	59.5	1.3
Coal mining	2.4	51.0	45.6	1.0
Oil production	0.4	10.2	88.2	1.2
Gas production	0.3	8.1	91.4	0.2
Extraction of ferrous metal ores	1.7	35.6	59.8	2.8
Extraction of non-ferrous metal ores	2.1	43.1	51.7	3.0
Extraction of other minerals	1.5	31.7	66.2	0.5
Food industry	5.7	53.7	20.6	19.9
Light industry	0.7	4.1	2.5	92.8
Woodworking	3.5	60.8	29.4	6.3
Pulp and paper industry	5.1	46.5	24.1	24.2
Printing and copying	13.0	54.9	28.6	3.6
Coke production	1.0	77.9	20.0	1.1
Production of petroleum products	0.8	69.1	27.5	2.6
Chemical industry	4.1	27.5	15.3	53.1
Other non-metallic mineral products	9.1	41.7	27.7	21.6
Ferrous metals	7.9	55.8	23.0	13.2
Non-ferrous metals	6.2	43.8	45.3	4.7
Production of finished metal products	7.7	28.8	14.5	49.1
Mechanical engineering	4.5	16.6	8.6	70.3
Other productions	7.5	40.1	28.9	23.4
Electricity generation and distribution	1.1	65.4	33.4	0.1
Gas production and distribution	1.0	59.6	39.3	0.2
Production and distribution of thermal energy	1.1	68.5	30.4	0.1
Water supply, waste collection and disposal	6.6	59.6	29.4	4.4
Construction	11.0	43.9	42.1	3.0
Trade and repair of ATSiM	1.1	42.7	56.2	0.0
Land transport	1.5	46.5	51.2	0.9
Pipeline transport	1.8	55.1	42.3	0.8
Other transport	1.4	49.0	42.2	7.4
Hotels and catering	6.5	49.0	43.6	1.0
Information and communication	1.6	40.2	42.9	15.2
Financial and insurance activities	0.4	29.0	65.5	5.1
Real estate transactions	0.9	22.5	76.2	0.3
Professional, scientific, and technical activities	2.7	35.1	48.7	13.5
Administrative activities and related services	1.0	20.2	59.5	19.3
Public administration	1.0	28.0	71.0	0.0
Education	0.9	19.3	78.8	1.0
Healthcare	3.3	29.6	67.1	0.1
Culture, sports, leisure, entertainment	1.9	39.3	58.4	0.5
Other types of services	2.6	38.0	58.7	0.7
Activities of households	0.0	0.0	100.0	0.0
<b>ECONOMY AS A WHOLE</b>	2.7	34.5	54.5	8.3
Source: own calculations.				

in the context of “the RSFSR – the rest of the USSR”. The composition of the economy reflected in the input-output tables was also different: only the branches of the manufacturing sector were represented; as for intangible services, whose share in the economy is currently quite large and continues to grow, there was not even such a thing as gross output. The industry classifier was also more aggregated. In this regard, the performed research has obvious signs of novelty according to the mentioned criteria.

### Conclusion

The quantitative estimates of the interaction between the European and Asian parts of the Russian Federation presented in this paper show that the contribution of Asian regions is most significant for the products of mining industries.

Due to the fact that the indirect and full costs consider only those product flows that relate to intermediate consumption, it seems advisable in the future to develop the methodology in the direction of accounting for investment goods. In addition, in the future, it is planned to attempt to build regional tables of the use of domestic and imported goods for more detailed accounting of intermediate import costs and a deeper assessment of the impact of foreign trade on the economy of the regions.

The problem of disaggregating the classifier of economic activities remains relevant, since the aggregated representation of industries in input-output tables contains an implicit hypothesis about the complete interchangeability of all products included in one industry. Calculations based on more detailed tables will allow us to obtain more reliable indicators of interregional interactions, and the degree of interdependence of the economies of the macro regions should increase. These calculations can be carried out after the Rosstat's

promised publication of detailed tables for 2021.

Such tables will make it possible to make the transition from a two-zone analysis of the economy to a multi-regional one at a higher level. In addition, the problem of interregional “supplies” of services provided by economic entities of one region to consumers of other regions seems to be relevant. Including them in the number of products involved in interregional exchange will help to carry out a more complete analysis of the specifics of interregional relations. When making calculations using a multi-regional model, we find it most relevant for assessing the role of the Central Federal District as the main provider of financial, information and trade services for enterprises and the population of other districts.

The calculations performed allow us to state that the relationship between the two macro zones has the following specifics: the development of the Asian part of the country has a greater positive impact on the economy of the European part of the Russian Federation than the development of the European part on the Asian economy, since the range of goods produced in the European part of the Russian Federation is much wider than in the Asian part, especially investment goods, in particular machinery and equipment. Therefore, investments in the Asian part and the growth of production here will have a significant indirect impact on the economy of the European part. This kind of effect will be even more significant when it is included in the interregional model of “supply” of services, for many of which Europe clearly dominates and actually serves a significant part of their market in Asia. The further disaggregation of the classifier of activities presented at the model level will make it possible to obtain more accurate quantitative estimates of the interaction features of the two macro zones.

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## Two Approaches to Assessing the Effectiveness of Demographic Policy (Using the Example of Federal Maternity Capital)



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**Abstract.** Recently, attention to assessing the effectiveness of measures aimed at promoting birth rate has been increasing. Among these measures, federal maternal (family) capital is, doubtless, the most significant one; thus, it is necessary to develop methodological approaches so as to assess the impact of specific demographic policy measures, in particular maternity capital, on birth rate dynamics. The aim of the study is to design a methodology for evaluating and measuring the effectiveness of federal maternity capital based on official statistics. The article presents two approaches to the methodology for evaluating the effectiveness of federal maternal (family) capital: the first is based on current accounting data, the second is based on census and micro-census data. Within the framework of the first approach, we consider it necessary to apply age-related birth rates for second births in real generations of women, that is, attributed to generations rather than calendar years. The second approach is based on the information about reproductive intentions. In accordance with this information, data on the average expected number of children, according to the 2015 micro-census, and the average number of children born according to the results of the 2020 census are compared. The proposed methodology helps to obtain estimates of the effectiveness of demographic policy measures, taking into account their target orientation (for example, an increase in the birth rate of a certain order or in women of certain age groups). The approbation of the proposed approaches on the example of assessing the effectiveness of maternity capital indicates the expediency of their application. Scientific novelty of our research consists in the convergence of the two approaches in order to measure the effectiveness of federal maternity capital, and in the methodology for using more detailed birth rate indicators in assessing demographic policy measures. The approbation of the approaches has not only analytical capabilities, allowing us to study birth rate in real generations of women according to the order of births and characterize reproductive attitudes; it also substantiates the conclusions about the effectiveness of federal maternity capital.

**Key words:** federal maternity capital, birth rate, second births, “timing” shifts, effectiveness of measures.

### Introduction

In modern Russia the demographic crisis is intensifying due to the second wave of depopulation that began in 2016–2017 (Ryazantsev, Rybakovsky, 2021), characterized by population decline against the background of a critically low birth rate. Currently, despite the implementation of demographic policy, total fertility rate is not only far from the level of simple population reproduction (2.12–2.14), but shows unfavorable dynamics (*Fig. 1*).

The forecast values of total fertility rate presented by Rosstat for the foreseeable time

lag look very disappointing, suggesting that the set national development goals for both 2030 and 2036<sup>1</sup> will not be achieved (by 2030, the target value is 1.6 with Rosstat’s most optimistic upper bound forecast of 1.516<sup>2</sup>; by 2036, respectively, 1.8 versus 1.675). In this regard, it is of high practical importance to assess the effectiveness of government decisions in the field of fertility<sup>3</sup>. Back in the late 1990s, a leading Russian demographer V.A. Borisov proved that it fertility that plays the main role in population reproduction<sup>4</sup>.

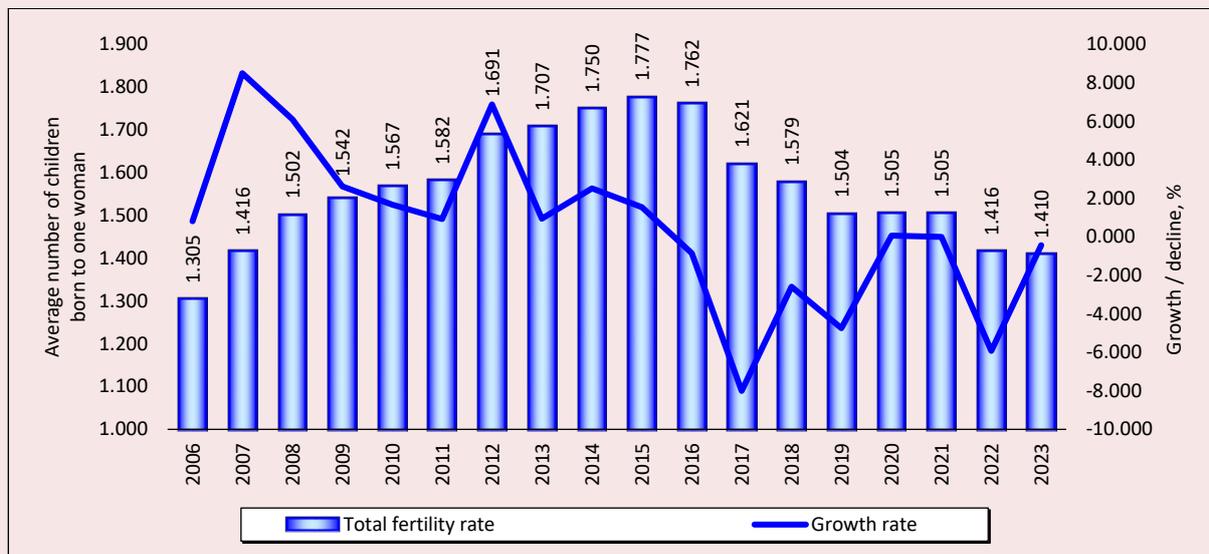
<sup>1</sup> Decree on the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036. Available at: <http://www.kremlin.ru/events/president/news/73986> (accessed: October 9, 2024).

<sup>2</sup> Rosstat. Demographic forecast. Available at: <https://rosstat.gov.ru/folder/12781> (accessed: October 9, 2024).

<sup>3</sup> Increasing birth rate is the main goal of Russia’s demographic policy. Available at: <https://vcot.info/blog/povyshenie-rozdaemosti-osnovnaa-cel-demograficeskoj-politiki-rossii> (accessed: October 9, 2024).

<sup>4</sup> Borisov V.A. (1999). Demography: A Textbook for Universities. Moscow: NOTABENE publishing house.

Figure 1. Total fertility rate dynamics in Russia in 2006–2023



Source: Rosstat.

### Literature review

Currently, researchers and practitioners pay great attention to measuring the effectiveness of demographic policy, in particular those measures aimed at increasing fertility (Arkhangelskiy et al., 2016; Rybakovsky, 2016; Slonimchik, Yurko, 2016; Bulanova, 2022; Rostovskaya et al., 2022; Ageev, Zolotareva, 2023; Bagirova et al., 2024, etc.). However, there is no unity in approaches, which gives us reason to propose our own vision of this issue.

Most studies present a comprehensive approach to assessing the effectiveness of demographic policy, and only some cases focus on individual measures. We should note that an integrated approach is typical for foreign practice in general, which is reflected, for example, in the article by C. Adelle and S. Weiland, which systematizes theoretical foundations of a methodology for assessing social policy, of which demographic policy is a part (Adelle, Weiland, 2012).

A work of A.I. Ageev and O.A. Zolotareva presents a comprehensive approach to assessing the effectiveness of demographic policy, which does not

single out the effectiveness of the impact of concrete decisions adopted (Ageev, Zolotareva, 2023).

An article by M.A. Bulanova evaluates the effectiveness of demographic policy to promote fertility (using the example of the Far Eastern Federal District) and also does not measure the impact of individual implemented measures on fertility (Bulanova, 2022).

In the work “Demographic Well-Being of Russia’s Regions. National Demographic Report 2022” by the team of authors (Rostovskaya et al., 2022) uses an approach based on an integrated assessment according to a system of indicators for monitoring family demographic policy. A comprehensive approach to the analysis of demographic behavior, reflecting the results of the project “Demographic behavior of the population in the context of Russia’s national security”, carried out by a creative team of Russian scientists from academic institutions and leading universities, supported by the Russian Science Foundation, is presented in a number of works by a team of researchers (Shabunova, Rostovskaya, 2020; Ilyin et al., 2021).

One of the ways to assess the effectiveness of demographic policy measures is to analyze the results of surveys of target groups (Maleva et al., 2017). Thus, the work of A.P. Bagirova, N.D. Blednova and A.V. Neshataev is based on the results of a survey that assesses the impact of parental leave on fertility, according to parents' opinions (Bagirova et al., 2024). In this case, it is proposed to assess the impact of a specific measure, but rather narrowly focused. It is important to note that in modern conditions, the development of the parental leave system is undoubtedly significant, primarily in the context of the need to ensure a balanced combination of professional and household responsibilities, which helps to alleviate the burden of work–family balance, which is considered a factor in fertility reduction (Ekberg et al., 2013; Gandevani et al., 2014; Nomaguchi, Fetto, 2019).

Among the studies devoted to assessing the effectiveness of maternity capital, there are also works whose authors use data from sample surveys and econometric modeling techniques (Shelkova, 2020). The following works deserve special attention: 1) F. Slonimchik and A.V. Yurko, which assesses the impact of the maternity capital program on fertility dynamics based on the “before-after” and “difference-differences” models; however, it does not take into account the dependence of second births on the average number of first births among real generations of women at a given age, which makes it possible to more correctly assess the impact of demographic policy on second births (Slonimchik, Yurko, 2016; 2) V.N. Arkhangelskiy, A.E. Ivanova, L.L. Rybakovsky, which, in particular, provides an approach to assessing individual measures aimed at increasing fertility, including federal maternity (family) capital (Arkhangelskiy et al., 2016). The latter source served as the basis for a deeper study of the issue of assessing the effectiveness of the introduction and use of federal maternity (family) capital in order to increase fertility.

A comparative analysis of the studies shows that their authors use various data sources and methods of their processing, and indicators reflecting fertility. However, the debatable question remains, to what extent are the measures, in particular federal maternity capital, achieving their goals? Can we reasonably say that the introduction of this measure has helped raise the number of second and subsequent births? Answering these questions requires using more detailed demographic indicators, including calculations for the real generation, and an integrated approach to using demographic statistics based on current accounting of demographic events and population censuses.

#### **Research methodology**

**The aim of the study** is to develop a methodology for assessing and measuring the effectiveness of federal maternity capital based on official statistical information: according to both current accounting and population census data.

Assessing the possible impact of demographic policy measures on fertility dynamics using statistical information, it is necessary to identify the influence of this factor as precisely as possible, eliminating the influence of other determinants. To some extent, this is possible if the measures implemented are not focused on all births, but are differentiated according to order of birth and/or age of the mother. In this case, with a certain degree of conditionality, it will be possible to judge the impact of measures on fertility dynamics related to the order of birth or the age of the mother that they are aimed at.

In addition, when assessing the impact of demographic policy measures on fertility dynamics, it is possible to focus on the timing, the time interval between the launch of measures and an increase in fertility. Almost all measures to increase fertility are aimed at creating more favorable conditions for realizing the need for children, rather than changing the need itself. Experience shows that in this case people's reaction in their reproductive

behavior to the implementation of measures occurs immediately and is not being delayed (meaning that the beginning of the reaction is not delayed, but it can, to one degree or another, persist throughout the period of implementation of the demographic policy measure). At the same time, it is advisable to use fertility indicators not only in the whole year, but also by quarter and month.

When assessing the impact of demographic policy measures on fertility dynamics, it is important to determine to what extent this influence affects only “timing” shifts, i.e. earlier birth of children (at a younger age, with a shorter interval after marriage (first child) or the birth of a previous child), and to what extent – on increasing the total number of children born in real generations of women.

The methodology we propose for measuring the effectiveness of federal maternal (family) capital for the second or subsequent child is based on the consideration of two types of data (according to which two approaches to such performance measurement are defined): current accounting and data from censuses and micro-censuses.

The advantage of the assessment based on current accounting data (the first approach) is that it allows for annual monitoring of the situation, which made it possible, using statistical and demographic analysis methods, in particular, the analysis of age-specific fertility rates for second births in real generations of women, to identify the above-mentioned “timing” shifts and substantiate them. Data from censuses and micro-censuses (the second approach) provide information about reproductive intentions and their determinants. In fact, this is a value-based approach, which is no less important for measuring the effectiveness of federal maternal (family) capital for the second or subsequent child, as it provides an opportunity to get the opinion of the population directly on the importance of certain measures. Thus, the complexity of the approaches allows us to more fully

characterize the consequences of the introduction of such a demographic policy measure as federal maternity capital.

We should note that we calculated all fertility rates (the first approach) taking into account the data from the 2020 census.

***Measuring the effectiveness of federal maternal (family) capital for the second or subsequent child according to current statistics (the first approach)***

Among the demographic policy measures implemented in Russia, federal maternal (family) capital is not just a significant, but a critically important one (Elizarov, Dzhanava, 2020). It was introduced on January 1, 2007 in accordance with Federal Law 256-FZ, dated December 29, 2006 “On additional measures of state support for families with children”.

A steady significant increase in the number of births in 2007 compared to 2006 began in July and was greatest in October – December (in January the increase was 5.5%; in February – 3.6%; in March – 3.8%; in April – 4.4%; in May – 9.2%; in June – 3.1%; in July – 10.6%; in August – 9.6%; in September – 10.0%; in October – 14.3%; in November – 15.7%; in December – 16.4%).

It would seem that there is no reason to associate a significant increase in the number of births in July – September 2007 with the launch of measures to support families with children on January 1. However, we should point out that Russian President Vladimir Putin announced the introduction of these measures as of January 1, 2007 in his Address to the Federal Assembly of the Russian Federation on May 10, 2006. That is, families who expected the birth of a child knew about these measures in advance. It is possible that some women, after waiting for confirmation of the implementation of new measures to support families with children in early January 2007, did not terminate their pregnancy (it was too late for those who gave birth before June 2007 to decide whether or not to continue their pregnancy in early 2007).

Table 1. Total fertility rate by birth order in Russia in 1999–2023 (based on 2020 census data)

Year	First	Second	Third	Fourth	Fifth and subsequent
1999	0.679	0.344	0.087	0.026	0.018
2000	0.706	0.357	0.089	0.024	0.017
2001	0.718	0.369	0.090	0.026	0.017
2002	0.744	0.396	0.099	0.027	0.018
2003	0.758	0.412	0.102	0.028	0.018
2004	0.757	0.413	0.102	0.028	0.017
2005	0.728	0.398	0.098	0.027	0.016
2006	0.738	0.401	0.098	0.026	0.015
2007	0.742	0.469	0.123	0.033	0.019
2008	0.767	0.506	0.140	0.036	0.020
2009	0.800	0.535	0.147	0.038	0.021
2010	0.784	0.565	0.156	0.040	0.021
2011	0.779	0.573	0.164	0.041	0.022
2012	0.807	0.618	0.188	0.047	0.025
2013	0.807	0.621	0.197	0.048	0.025
2014	0.783	0.644	0.207	0.052	0.027
2015	0.781	0.682	0.217	0.055	0.028
2016	0.756	0.679	0.222	0.057	0.029
2017	0.696	0.597	0.219	0.058	0.030
2018	0.654	0.574	0.227	0.065	0.035
2019	0.626	0.523	0.225	0.068	0.036
2020	0.611	0.514	0.237	0.073	0.040
2021	0.593	0.513	0.245	0.077	0.042
2022	0.595	0.462	0.237	0.079	0.043
2023	0.597	0.441	0.240	0.087	0.045

Source: own calculation using Rosstat data.

Federal maternity (family) capital was initially provided at the birth of a second or subsequent (if not previously received) child. In 2020 it began to be provided at the birth of the first child. Therefore, to assess its impact on fertility dynamics, it is possible and advisable to use indicators differentiated by birth order, primarily total fertility rate (*Tab. 1*).

Total fertility rate for second births in 2007 increased by 0.068 compared to 2006. This is significantly more than in previous years (before 2007, the largest increase was in 2002 – by 0.027). The increase in this indicator was only slightly higher in 2000–2004 (by 0.069).

Total fertility rate for third and subsequent births increased by 0.036 in 2007 (for comparison, the overall increase in 2000–2003 was only 0.017; the indicator decreased in 2004–2006).

Thus, first, there is a coincidence in the timing of the start of the provision of federal maternal (family) capital and a significant increase in the total fertility rate for a second, third and subsequent births. Second, if the increase in fertility had been due to some other factors other than the beginning of the implementation of this measure, it would probably have manifested itself in relation to the first births. However, the increase in the total fertility rate for first births in 2007 was quite small (by 0.004). A significant increase in this indicator in 2008 (by 0.025) and 2009 (by 0.033) was probably due to a significant increase in marriage rates in 2007: total marriage rate increased by 12.8% (the largest increase since the early 1960s); the number of first marriages in women increased by 12.4%; marriage rate in women in the 18–24 age group increased by 9.2%, in the 25–34 age group – by 18.4%.

Continuous increase in the total fertility rate for second births in the period up to 2015 suggests that there was at least no priority effect of “timing” shifts on a significant increase in this indicator at the beginning of the implementation of the federal maternal (family) capital program. If they were present, then a “timing” gap would be inevitable after them, i.e. a significant decrease in the indicator due to the fact that children who could have been born in subsequent years were already born earlier.

Apparently, there were “timing” shifts in second births in 2015 and, probably, in 2016 due to the approaching the deadline originally set for the implementation of the federal maternity (family) capital program (until the end of 2016). In this case, there was a “timing” gap after them.

The use of fertility rates for real generations of women allows for a more accurate assessment of the presence or absence of “timing” shifts. However, this assessment is not given due attention, and

the researchers’ conclusions are mainly based on analyzing total fertility rate by birth order (Bulanova, 2022).

First of all, it is possible to analyze age-specific fertility rates (in this case, by second births) in real generations of women and assess in which generations and at which ages an increase was recorded compared to the coefficients at the same ages in previous generations. If there was an increase, but at older ages, then in the same generations the coefficients were lower than in previous generations, then there is reason to talk about “timing” shifts.

Starting from the generation of women born in 1975, we can probably talk about a significant increase (compared with the previous generation) in fertility rate for second births at the age at which women were in 2007, with the beginning of the provision of federal maternity (family) capital (Tab. 2).

Table 2. Dynamics (compared with the previous generation) of age coefficients for second births in 2007, before and after 2007 in Russia in generations of women born in 1972–1983, percentage points

Year of birth of women	Age in 2007	Increase in fertility rate for second births at the age at which women were in 2007, compared with the previous generation	The largest increase (compared to the previous generation) in fertility rate for second births at younger ages (i.e. before 2007)	Decline (compared with the previous generation) in fertility rate for second births at older ages (i.e. after 2007)
1972	35	2.7	2.4 (30 years)	yes
1973	34	2.9	2.2 (29 years)	no
1974	33	4.0	3.3 (28 years)	no
1975	32	3.9	1.9 (27 years)	-0.1 (36 years)
1976	31	5.5	1.4 (26 years)	-0.1 (35 years)
1977	30	4.6	0.8 (25 years)	no
1978	29	5.4	0.9 (24 years)	-0.5 (39 years)
1979	28	5.3	1.1 (23 years)	-0.1 (34 years); -1.1 (38 years); -0.3 (39 years)
1980	27	4.5	no	-1.2 (31 years); -0.9 (33 years); -0.2 (34 years); -0.5 (36 years); -2.0 (37 years); -0.8 (38 years); -0.8 (39 years)
1981	26	4.6	0.2 (21 years)	-0.7 (30 years); -0.1 (32 years); -2.0 (36 years); -0.5 (37 years); -0.5 (38 years)
1982	25	3.9	0.1 (20 years)	-2.2 (35 years); -0.4 (37 years)
1983	24	3.3	no	-3.6 (34 years); -0.6 (35 years); -0.9 (36 years); -0.4 (37 years); -0.3 (39 years)

Source: own calculation using Rosstat data.

In the generations of women born in 1972–1974 the increase in fertility rate for second births was relatively close to the one in 2007 and five years earlier (in 2002), while starting from the generation born in 1975 there was no increase in younger ages that was close in magnitude to the one in 2007. Here, with a high degree of confidence, we can talk about the impact of the beginning of the provision of federal maternity (family) capital in 2007. Probably, there were no “timing” shifts in these generations, because at older ages, first, there was either no decrease in fertility rate for second births (compared with older generations), or it was very small; second, it was recorded only in certain ages (in generations born in 1975, 1976, and 1978 – in one age group; in the generation born in 1979 – in three age groups); third, it was relatively far from the age of a significant increase in the indicator (in the

generations born in 1975 and 1976 – after four years; in the generation born in 1979 – after six years; in the generation born in 1978 – after ten years; see Tab. 2).

Perhaps, in the generation of women born in 1980 there could be small “timing” shifts in second births. The first (after a significant increase) decrease in fertility rate for second births was recorded at the age of 31 in 2011 (i.e., four years after the increase in 2007) and then at almost all ages, starting at 33. Small “timing” shifts in second births could also occur in the generation of women born in 1981.

However, with regard to the generations born in 1982 and 1983, there is less reason to talk about “timing” shifts in the increase in fertility rate for second births in 2007, since the first decrease, although relatively significant, took place only 10 years later.

Table 3. Increase (compared with the previous generation) in the age coefficients for second births in 2015 in Russia in the generations of women born in 1984–1995, percentage points

Year of birth of women	Age in 2015	The increase in fertility rate for second births at the age at which women were in 2015	Decline (compared with the previous generation) in fertility rate for second births at older ages
1984	31	2.8	-5.5 (33 years); -1.3 (34 years); -2.0 (35 years); -0.9 (36 years); -0.7 (38 years); -0.1 (39 years)
1985	30	2.3	-0.8 (31 years); -7.3 (32 years); -2.1 (33 years); -2.9 (34 years); -1.4 (35 years); -0.3 (36 years); -1.4 (37 years); -0.4 (38 years)
1986	29	3.0	-0.7 (30 years); -8.1 (31 years); -2.5 (32 years); -3.2 (33 years); -1.5 (34 years); -0.4 (35 years); -1.7 (36 years); -0.5 (37 years)
1987	28	5.6	-5.8 (30 years); -2.0 (32 years); -0.6 (35 years)
1988	27	2.9	-0.6 (28 years); -8.7 (29 years); -1.7 (30 years); -4.3 (31 years); -0.9 (32 years); -0.1 (33 years); -2.5 (34 years); -0.7 (35 years)
1989	26	1.3	-1.5 (27 years); -9.0 (28 years); -2.9 (29 years); -5.9 (30 years); -2.1 (31 years); -1.3 (32 years); -3.6 (33 years); -1.3 (34 years)
1990	25	1.6	-2.1 (26 years); -8.5 (27 years); -3.0 (28 years); -6.0 (29 years); -2.3 (30 years); -1.4 (31 years); -4.1 (32 years); -1.8 (33 years)
1991	24	2.4	-0.8 (25 years); -4.9 (26 years); -0.4 (27 years); -3.8 (28 years); -0.4 (29 years); -2.7 (31 years); -0.7 (32 years)
1992	23	2.5	-3.3 (25 years); -0.2 (26 years); -3.2 (27 years); -2.8 (30 years); -0.4 (31 years)
1993	22	1.1	-1.1 (23 years); -3.3 (24 years); -0.9 (25 years); -3.5 (26 years); -0.3 (27 years); -0.4 (28 years); -4.7 (29 years); -1.7 (30 years)
1994	21	1.0	-0.8 (22 years); -1.6 (23 years); -2.2 (25 years); -2.6 (28 years); -0.6 (29 years)
1995	20	0.6	-0.8 (21 years); -1.4 (22 years); -1.6 (23 years); -3.1 (24 years); -0.1 (26 years); -5.0 (27 years); -2.3 (28 years)

Source: own calculation using Rosstat data.

In older generations, there was a significant increase in fertility rate for second births in 2015, due to the approaching completion of the originally established term of the federal (maternal) family capital program (until the end of 2016) (*Tab. 3*).

Beginning from the generation of women born in 1984, the increase (compared to the previous generation at the same age) in fertility rate for second births in 2015 was higher than in 2007. And if, after the increase in 2007, there was no significant decrease in older ages in the same generation (i.e., if there were “timing” shifts, they were relatively insignificant), then after its increase in 2015 there was a significant decrease in older ages. This suggests a significant impact of “timing” shifts on the increase in fertility rate for second births in 2015 and the inevitable “timing” failure after that (which is largely due to the decrease in fertility rates for second births at older ages in this generation compared to the previous generation). Moreover, this decrease was most significant not at the next age (respectively, in 2016), but at the age at which women of this generation were in 2017. It is likely that the continued “timing” shifts still had a positive impact in some months of 2016 (see *Tab. 3*).

To assess the impact of federal maternal (family) capital on fertility rates in real generations of women, it is also advisable to use the average number of second births in certain age periods (*Tab. 4*), as well as by one age or another. To calculate this indicator, age-specific fertility rates are summed up within a generation (followed by division by 1000), and not within a calendar year, as when calculating total fertility rate.

A relatively significant increase in the average number of second births during the period when the federal maternal (family) capital program was launched (2007) can probably be noticed in relation to the generations of women born in 1973–1974 and especially in 1975. In the age range of 32–34 years the average number of second births (1973–1974 years of birth – 0.07; 1975 year of birth – 0.08) is higher than in older generations (1970–1972 years

of birth – 0.06; 1968–1969 years of birth – 0.05). At the same time, in the next age range of 35–37 years the average number of second births is higher than in older generations. That is, it is likely that the increase in the indicator in 2007 was not related to “timing” shifts.

To an even greater extent, the impact of the beginning of implementation of federal maternal (family) capital probably manifested itself in the generations of women born in 1976–1978. In the age range of 29–31 years the average number of second births in each one-year generation increased and was higher than in the generations born in 1972–1975 (0.09): in those born in 1976 – 0.10; 1977 – 0.11; 1978 – 0.12. Compared to previous generations, it was also higher at older ages.

To a lesser extent there was an increase in the average number of second births among women born in 1979–1981 in the age range of 26–28 years.

In anticipation of the approach of the originally set deadline for the completion of the federal maternal (family) capital program (by the end of 2016), there was also a significant increase in fertility rate for second births in 2015. The estimates given above indicate that, unlike in 2007, “timing” shifts could have been more pronounced here.

The generation of women born in 1985 has the highest average number of second births in the age range of 29–31 years (0.15). However, at older ages in this generation the rate is lower than in the generations born in 1978–1984.

Women born in 1987–1989 have the highest average number of second births (compared to previous and subsequent generations) in the age range of 26–28 years. However, in older ages, on the contrary, it is less: 29–31 years old – 0.15 in the generation born in 1985, 0.14 in the generations born in 1986–1987, 0.12 in the generation born in 1988, 0.11 in the generation born in 1989; at the age of 32–34 – 0.11 in the generations born in 1982 and 1983, 0.10 in the generation born in 1984, 0.09 in the generation born in 1985, 0.08 in the generations born in 1986–1988, 0.07 in the generation born in 1989.

Table 4. Average number of second births by age range in Russia in generations of women born in 1965–1995 (per woman)

Year of birth of women	Age (years)											
	15-17	18-19	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46	47-49
1965	0.00	0.01	0.13	0.19	0.11	0.06	0.04	0.02	0.01	<b>0.00</b>	0.00	0.00
1966	0.00	0.02	0.13	0.17	0.10	0.07	0.04	0.02	0.01	<b>0.00</b>	0.00	<i>0.00</i>
1967	0.00	0.02	0.13	0.15	0.10	0.07	0.04	0.03	<b>0.01</b>	0.00	0.00	<i>0.00</i>
1968	0.00	0.02	0.12	0.13	0.10	0.07	0.05	0.03	<b>0.01</b>	0.00	0.00	<i>0.00</i>
1969	0.00	0.02	0.11	0.12	0.10	0.07	0.05	0.03	<b>0.02</b>	0.01	<i>0.00</i>	0.00
1970	0.00	0.02	0.09	0.11	0.09	0.07	0.06	<b>0.03</b>	0.02	0.01	<i>0.00</i>	0.00
1971	0.00	0.02	0.08	0.10	0.09	0.08	0.06	<b>0.04</b>	0.02	0.01	<i>0.00</i>	0.00
1972	0.00	0.02	0.07	0.09	0.09	0.09	0.06	<b>0.04</b>	0.02	<i>0.01</i>	0.00	0.00
1973	0.00	0.02	0.07	0.09	0.09	0.09	<b>0.07</b>	0.05	0.02	<i>0.01</i>	0.00	0.00
1974	0.00	0.01	0.06	0.08	0.10	0.09	<b>0.07</b>	0.05	0.02	<i>0.01</i>	0.00	0.00
1975	0.00	0.01	0.06	0.08	0.10	0.09	<b>0.08</b>	0.05	<i>0.03</i>	0.01	0.00	–
1976	0.00	0.01	0.05	0.08	0.10	<b>0.10</b>	0.09	0.06	<i>0.03</i>	0.01	0.00	–
1977	0.00	0.01	0.05	0.08	0.10	<b>0.11</b>	0.09	0.06	<i>0.03</i>	0.01	0.00	–
1978	0.00	0.01	0.05	0.08	0.10	<b>0.12</b>	0.10	<i>0.06</i>	0.03	0.01	–	–
1979	0.00	0.01	0.04	0.08	<b>0.10</b>	0.12	0.10	<i>0.06</i>	0.03	0.01	–	–
1980	0.00	0.01	0.04	0.07	<b>0.11</b>	0.12	0.10	<i>0.06</i>	0.02	0.01	–	–
1981	0.00	0.01	0.04	0.07	<b>0.11</b>	0.13	<i>0.10</i>	0.06	0.02	–	–	–
1982	0.00	0.01	0.04	<b>0.07</b>	0.12	0.14	<i>0.11</i>	0.06	0.02	–	–	–
1983	0.00	0.01	0.04	<b>0.08</b>	0.12	0.14	<i>0.11</i>	0.06	0.02	–	–	–
1984	0.00	0.01	0.04	<b>0.08</b>	0.13	<i>0.14</i>	0.10	0.05	–	–	–	–
1985	0.00	0.01	<b>0.04</b>	0.08	0.13	<i>0.15</i>	0.09	0.05	–	–	–	–
1986	0.00	0.01	<b>0.04</b>	0.08	0.13	<i>0.14</i>	0.08	0.05	–	–	–	–
1987	0.00	0.01	<b>0.04</b>	0.09	<i>0.14</i>	0.14	0.08	–	–	–	–	–
1988	0.00	<b>0.01</b>	0.04	0.09	<i>0.14</i>	0.12	0.08	–	–	–	–	–
1989	0.00	<b>0.01</b>	0.04	0.09	<i>0.14</i>	0.11	0.07	–	–	–	–	–
1990	<b>0.00</b>	0.01	0.05	<i>0.10</i>	0.12	0.10	–	–	–	–	–	–
1991	<b>0.00</b>	0.01	0.05	<i>0.10</i>	0.11	0.10	–	–	–	–	–	–
1992	<b>0.00</b>	0.01	0.05	<i>0.10</i>	0.11	0.10	–	–	–	–	–	–
1993	0.00	0.01	<i>0.06</i>	0.09	0.11	–	–	–	–	–	–	–
1994	0.00	0.01	<i>0.06</i>	0.09	0.11	–	–	–	–	–	–	–
1995	0.00	0.01	<i>0.06</i>	0.08	0.10	–	–	–	–	–	–	–

Age groups in the generations that include births in 2007 are highlighted in bold; age groups that include births in 2015 are highlighted in italics.  
Source: own calculation using Rosstat data.

In the generations of women born in 1990–1992 the average number of second births in the age range of 23–25 years is the largest since the generation born in 1972. However, at the age of 26–28 it is lower than in the generations born in 1984–1989, and at the age of 29–31 it is lower than in the generations born in 1977–1989.

The generations of women born in 1993–1995 have the highest average number of second births in the age range of 20–22 years, starting with the generation born in 1976. However, in the age range of 23–25 years it is lower than in the generations born in 1990–1992. In the age range of 26–28 years it is lower than in the generations born in 1982–1990 (see Tab. 4).

Thus, an analysis of the average number of second births by age range in women's generations shows the following: if the increase in fertility rate for second births in 2007 was practically not associated with "timing" shifts, then with a significant increase in 2015 such shifts probably took place.

To assess changes in fertility rates for second births in real generations of women it is advisable to use not only the average number of second births,

but also the proportion of those who gave birth to a second child among those who gave birth to their first child (*Tab. 5*). It is calculated as the average number of second births divided by the average number of first births. The quotient of the division is multiplied by 100, i.e. the indicator is calculated in %. Unlike the average number of second births, this indicator does not depend on the average number of first births and therefore makes it more accurate to assess the impact of demographic policy

Table 5. Average number of second births and the proportion of those who gave birth to a second child among those who gave birth to the first child by a certain age in Russia in generations of women born in 1965–1995 (per woman)

Year of birth of women	Average number of second births (per woman)						Proportion of those who gave birth to a second child among those who gave birth to the first child (%)					
	25	30	35	40	45	50	25	30	35	40	45	50
1965	0.28	0.47	0.54	0.57	0.57	0.57	37.4	53.8	59.9	62.0	62.4	62.4
1966	0.27	0.44	0.52	0.55	0.56	0.56	35.8	50.9	57.4	60.0	60.5	60.5
1967	0.25	0.41	0.50	0.53	0.54	0.54	33.4	47.8	55.0	57.9	58.6	58.6
1968	0.23	0.39	0.48	0.52	0.53	0.53	30.7	45.0	52.9	56.4	57.2	57.2
1969	0.21	0.37	0.47	0.51	0.52	0.52	28.0	42.7	51.4	55.2	56.1	56.1
1970	0.19	0.34	0.45	0.49	0.50	0.50	25.5	39.8	49.3	53.5	54.5	54.5
1971	0.17	0.32	0.43	0.49	0.50	0.50	23.6	37.9	48.3	53.2	54.2	54.2
1972	0.15	0.30	0.42	0.48	0.50	0.50	22.2	36.7	48.1	53.7	54.8	54.9
1973	0.14	0.29	0.42	0.48	0.50	0.50	21.2	36.2	48.3	54.5	55.7	55.7
1974	0.13	0.29	0.43	0.50	0.51	0.51	20.4	36.0	48.9	55.6	56.8	56.9
1975	0.12	0.29	0.43	0.50	0.52	–	19.8	35.9	49.7	56.7	57.9	–
1976	0.12	0.28	0.43	0.51	0.52	–	19.2	35.4	50.6	57.9	59.1	–
1977	0.11	0.27	0.44	0.52	0.53	–	18.8	35.1	51.6	59.4	60.6	–
1978	0.11	0.27	0.45	0.53	0.54	–	18.7	35.4	52.8	60.6	61.8	–
1979	0.10	0.27	0.45	0.54	0.55	–	18.6	35.9	53.8	61.6	62.7	–
1980	0.10	0.27	0.45	0.53	–	–	18.1	36.3	54.6	62.0	–	–
1981	0.09	0.28	0.46	0.54	–	–	17.7	37.2	56.0	63.1	–	–
1982	0.09	0.28	0.48	0.56	–	–	17.5	38.2	57.9	64.7	–	–
1983	0.09	0.29	0.49	0.57	–	–	18.1	39.7	59.6	66.1	–	–
1984	0.09	0.30	0.50	0.57	–	–	19.1	41.0	60.5	66.7	–	–
1985	0.09	0.30	0.49	–	–	–	19.9	42.1	60.6	–	–	–
1986	0.10	0.31	0.49	–	–	–	20.9	43.6	60.0	–	–	–
1987	0.10	0.34	0.50	–	–	–	22.2	46.0	61.3	–	–	–
1988	0.11	0.33	0.49	–	–	–	23.6	46.5	61.0	–	–	–
1989	0.11	0.32	0.47	–	–	–	24.7	46.9	60.3	–	–	–
1990	0.11	0.31	–	–	–	–	26.3	47.1	–	–	–	–
1991	0.12	0.31	–	–	–	–	28.4	47.6	–	–	–	–
1992	0.13	0.31	–	–	–	–	30.4	48.8	–	–	–	–
1993	0.13	0.30	–	–	–	–	31.6	49.0	–	–	–	–
1994	0.13	0.30	–	–	–	–	32.0	48.8	–	–	–	–
1995	0.12	–	–	–	–	–	32.4	–	–	–	–	–

Source: own calculation using Rosstat data.

on second births. It can only be used to characterize fertility rate for second births in real generations for a particular age of women and cannot be used to characterize fertility rate in the age range due to the incompatibility of the numerator and denominator, i.e. it is very likely that the second and first births in a given woman were not in the same age range.

The average number of second births decreased in the generations of women born in the second half of the 1960s and early 1970s.

The proportion of those who gave birth to a second child among those who gave birth to the first child increases slightly in the generation born in 1972 by the age of 40, 45 and 50 years. To some extent, this may be due to the beginning of the provision of federal maternity (family) capital. The women of this generation were 35 years old in 2007. This increase was even more pronounced in the generation born in 1973. At the same time, the proportion of those who gave birth to a second child among those who gave birth to their first child by the age of 35 increased slightly (in 2007, women of this generation were 34 years old).

For women born in 1974, the average number of second births increased slightly by the age of 35, 40, 45, and 50. The increase continued in the generations born in 1975 and 1976. If the average number of second births was small, then the proportion of those who gave birth to a second child among those who gave birth to the first child was more significant. The increase in these indicators was even more significant in the generation of women born in 1977.

Among women born in 1978, 1979 and 1980 the proportion of those who gave birth to a second child among those who gave birth to the first child increased slightly by the age of 30 (in 2007 they were, respectively, 29, 28 and 27 years old).

Since the generation born in 1981, there has been a more significant increase in the rates of second births. Among women born in 1983 there is a slightly higher proportion of those who have given

birth to a second child among those who have given birth to the first child by the age of 25 (in 2007 they were 24 years old). The increase in indicators continues in the generation born in 1984, although the increase in the proportion of those who gave birth to a second child among those who gave birth to the first child by the age of 35 and 40 is less than in older generations.

Among women born in 1986, the proportion of those who gave birth to a second child among those who gave birth to the first child by the age of 25 and 30 is significantly higher than in older generations, but by the age of 35 it is lower than in the generations born in 1984 and 1985. However, in the generation born in 1987 this figure is higher than in older generations, and by the age of 35, too.

But in the next generation (born in 1988) by the age of 35 the proportion of those who gave birth to a second child among those who gave birth to the first child is slightly lower than that in women born in 1987. The average number of second births by the age of 30 and 35 is also lower. It is even lower in the generation born in 1989, but the proportion of those who gave birth to a second child among those who gave birth to the first child is lower only by the age of 35, and by the age of 25 and 30 it is higher than in previous generations. Probably, this can reflect "timing" shifts.

In the generations of women born in the first half of the 1990s, the average number of second births continues to decrease by the age of 30, but the proportion of those who gave birth to a second child among those who gave birth to the first child by this age rises to the generation born in 1993, and only among women born in 1994 it is slightly lower.

Based on the analysis of the dynamics of different fertility rates for second births, we can say that the provision of federal maternity (family) capital contributed to an increase in fertility rates for second and subsequent births. It occurred both in calendar indicators (total and age-specific fertility rates for the second, third and subsequent

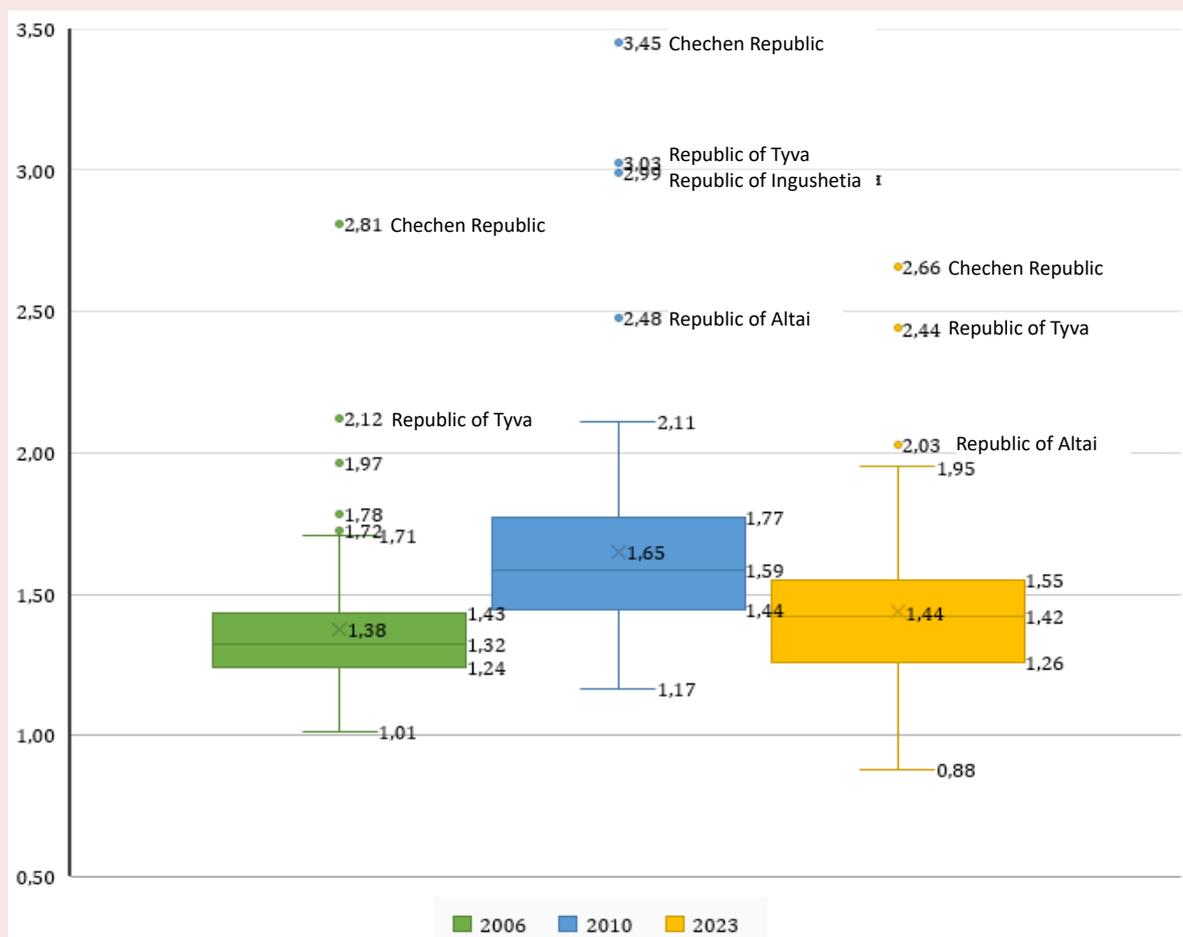
births) and in real generations of women. The increase in fertility rate for second births in 2007, i.e. at the beginning of the maternity capital program, was most likely not accompanied by “timing” shifts (i.e. there were probably cases of an earlier birth of a second child, but at the level of statistical indicators they were compensated by the realization of previously postponed births). There is a high probability that “timing” shifts will affect the change in indicators in 2015 and, apparently, in the first half of 2016, i.e. on the eve of the originally set deadline for the completion of the federal maternity (family) capital program. A more correct assessment for real generations is provided by an analysis of the

change in the proportion of those who gave birth to a second child among those who gave birth to the first child. This indicator does not depend on the average number of first births, which decreases in younger generations, thereby contributing to a decrease in the average number of second births.

***Measuring the effectiveness of federal maternal (family) capital for the second or subsequent child according to census and micro-census data (the second approach)***

Fertility rate varies significantly by region (Fig. 2); this is determined both by the specifics of regional demographic measures (for example, the presence and size of regional maternity capital, which is

Figure 2. Total fertility rate in the regions of Russia in 2022



Source: Rosstat.

absent in some regions of the country) and by socio-economic development of constituent entities of the Russian Federation themselves (Rostovskaya et al., 2023).

Considering the task of achieving fertility targets, it is important to note that the data from the population's micro-census on reproductive attitudes provide grounds for forecasting the average number of children born in real generations. Based on such a forecast, a forecast of total fertility rate can be made. Using such a forecast, it is possible to assess the achievability of the set targets for the indicator. If the forecast indicators turn out to be less than the targets, then based on the magnitude of the difference between them it can be judged how significant additional demographic policy measures aimed at increasing the birth rate should be.

Unfortunately, the forecasting possibilities of using the results of research on reproductive intentions have so far been very rarely analyzed, at least in Russia. Here we can highlight, first of all, the article by E.M. Andreev and G.A. Bondarskaya "Is it possible to use data on the expected number of children in the population forecast?" published in the journal *Voprosy statistiki* (Andreev, Bondarskaya, 2000), as well as an earlier work by V.A. Belova, G.A. Bondarskaya, A.G. Vishnevsky, L.E. Darsky and R.I. Sifman "How many children will there be in a Soviet family (survey results)"<sup>5</sup>. We should note that in foreign practice, when developing fertility scenarios for demographic forecasts, the results of systematically conducted surveys of women about the expected number of children are used (Predicting Fertility..., 1981); moreover, the first tests of this approach date back to the late 1940s (Whelpton et al., 1966).

In our study, in order to assess the predictive possibilities of information about reproductive intentions, we compared data on the average

expected number of children according to the 2015 population micro-census and the average number of children born according to the 2020 population census. Taking into account the interval between the micro-census and the population census and the expediency of considering the average number of children born in generations close to the end of the reproductive period (otherwise, one could say that reproductive intentions had not yet been realized at the time of the population census, but would be realized later), the average numbers of children born in the 2020 population census are compared across constituent entities of the Russian Federation in the generations of 40–44-year-old and 45–49-year-old women with an average expected number of children according to the 2015 population micro-census in generations, respectively, of 35–39-year-old and 40–44-year-old (at the time of the micro-census) women (Appendix).

From the point of view of assessing the implementation of reproductive intentions expressed by the expected number of children (according to the responses to the question "How many children (including existing ones) are you going to have?"), we should note that even in 40–44-year-old women (at the time of the 2015 micro-census) it is higher than the average number of children born to 45–49-year-old women according to the 2020 census. Of course, it should be borne in mind that these two sets of women are not quite comparable, since only 1.5% of the population participated in the micro-census.

In Russia as a whole the difference between the average expected number of children in 40–44-year-old women according to the 2015 micro-census and the average number of children born to 45–49-year-old women according to the 2020 census is 0.11. The largest difference between them was observed in the Republic of North Ossetia–Alania (0.31)

<sup>5</sup> Belova V.A., Bondarskaya G.A., Vishnevsky A.G., Darsky L.E., Sifman R.I. (1977). How Many Children Will There Be in a Soviet Family (Survey Results). Moscow: Statistika. 104 p. Available at: [https://www.demoscope.ru/weekly/knigi/IDEM\\_library/book074.php](https://www.demoscope.ru/weekly/knigi/IDEM_library/book074.php) (accessed: October 9, 2024).

and the Karachay-Cherkess Republic (0.26). In one region it is 0.18, in four – 0.17, in two – 0.15, in ten – 0.14, in three – 0.13, in four – 0.12, in seven – 0.11, in six – 0.10, in nine – 0.09, in five – 0.08, in six – 0.07, in one – 0.06, in six – 0.05, in four – 0.04, in two – 0.03, in three – 0.02. In the Bryansk, Kurgan, Penza and Pskov regions, and in the Yamal-Nenets Autonomous Area these indicators coincide. In the republics of Altai, Mari El and Udmurtia, and in the Kostroma region, on the contrary, the average expected number of children according to the 2015 population micro-census is less than the average number of children born according to the 2020 population census.

The difference between the average expected number of children in 35–39-year-old women according to the 2015 micro-census and the average number of children born to 40–44-year-old women according to the 2020 census is 0.13 in Russia as a whole. The largest difference between them is observed in the republics of Chechnya (0.37), North Ossetia–Alania (0.32), Kabardino-Balkaria (0.31), Ingushetia (0.26), Bashkortostan (0.24) and Karachay-Cherkessia (0.23), in the Stavropol Territory (0.21), in the Murmansk (0.21) and Tula (0.21) regions, in the Chukotka Autonomous Area (0.25). In two regions it is 0.20, in two – 0.19, in three – 0.18, in one – 0.17, in three – 0.16, in five – 0.15, in five – 0.14, in three – 0.13, in four – 0.12, in four – 0.11, in eight – 0.10, in four – 0.09, in two – 0.08, in three – 0.07, in two – 0.06, in four – 0.05, in four – 0.04, in two – 0.02, in four – 0.01. In the republics of Altai and Mari El, and in the Nenets Autonomous Area these indicators coincide. In the republics of Komi, Crimea, Tyva, Udmurtia and Khakassia, in the Altai Territory and in the Kostroma Region, on the contrary, the average expected number of children according to the 2015 population micro-census is less than the average number of children born according to the 2020 population census.

Considering that Presidential Decree 309, dated May 7, 2024 “On the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036” highlights the task of “annual growth in the total fertility rate for a third child and subsequent children”, it is advisable to make such a prognostic assessment in general by the number of children born, but also differentiated by order of birth. According to the population census, it is possible to calculate the average number of children born according to order of birth, the proportion of those who gave birth to a child of a particular order of birth among those who gave birth to a child of the previous order of birth. In order to compare these data with the data on reproductive intentions from the micro-census, it is advisable, along with the question of the expected number of children, to ask about the intention to have another child in the coming years (at the same time, it is necessary, apparently, to specify the time). In combination with information about the number of children born, the answers to this question will provide information about the proportion of those intending to have a child of a particular birth order.

Only a micro-census can provide representative information for such predictive assessments at the regional and municipal levels.

The study of large-family orientations and their determination within the framework of the micro-census is also important in the context of the implementation of Presidential Decree 63, dated January 23, 2024 “On measures of social support for large families”.

Value orientations are, probably, among the most significant determinants of reproductive orientations. According to the data of the “Selective observation of the reproductive plans of the population” conducted by Rosstat in 2022, two groups of respondents were identified: family-oriented and individual-oriented. The first group includes those who scored the importance of

living in a registered marriage at 5 points and the importance of the value of “being free, independent and doing what only I want” at 1 point. On the contrary, the second group includes those who scored the importance of “being free, independent and doing what only I want” at 5 points and the importance of living in a registered marriage at 1 point.

The group of respondents focused on family includes 17.4% of women and 17.1% of men, while those focused on their own values comprise 2.5% and 3.6%, respectively (the rest of the respondents are not included in these groups, since they do not have diametrically opposed extreme assessments of the importance of these two values).

The selected groups of respondents have significantly different reproductive orientations. Family-oriented parents have an average desired number of children (according to the responses to the question “How many children (including existing ones) would you like to have it if you had all the necessary conditions?”) equal to 2.19 for women and 2.24 for men, and 1.45 and 1.30 for those focused on their own values, respectively. The average expected number for family-oriented people is 2.04 for women and 2.05 for men, while for those focused on their own values it is 1.20 and 1.11, respectively (*Tab. 6*).

In this regard, it seems important to include the question of the importance of values (with an assessment on a five-point scale) in the population micro-census program.

The relevance of studying value orientations in a micro-census (i.e., in a survey representative at the regional and municipal levels) is primarily

related to the task of evaluating the effectiveness of the policy provided for in Presidential Decree 809, dated November 9, 2022 “On approval of the foundations of state policy for the preservation and strengthening of traditional Russian spiritual and moral values”. The Decree notes that monitoring the achievement of state policy goals for the preservation and strengthening of traditional values requires the development of an appropriate system of indicators based on the following data: a) official statistical information; b) results of sociological research. Official statistical information can be obtained based on the results of a micro-census.

### Conclusion

The methodology proposed in this article for assessing the effectiveness of demographic policy measures, in particular federal maternal (family) capital, is based on two approaches: the possibility of making estimates by using a system of fertility indicators obtained on the basis of current accounting data, and a comparative analysis of the actual birth rate and forecast estimates obtained on the basis of data on reproductive intentions during censuses and micro-censuses of the population. Each of the approaches has its own specifics: in the first case the effectiveness is assessed using statistical and demographic data analysis, in the second the focus is on a value-based approach using survey data from target groups. At the same time, measurements during the testing of each of the approaches revealed the importance of federal maternity capital in the context of fertility growth.

The analysis based on the use of fertility rates by birth order and by the age of the mother indicates that the increase in the total fertility rate for second

Table 6. Average desired and expected number of children for family-oriented people and for those oriented on their own values

Respondents	Average desired number of children		Average expected number of children	
	Women	Men	Women	Men
Family-oriented	2.19	2.24	2.04	2.05
Focused on their own values	1.45	1.30	1.20	1.11

Source: Selective observation of the reproductive plans of the population, Rosstat, 2022

births in the period up to 2015 indicates the absence of “timing” shifts at the initial stage of the implementation of the federal maternal (family) capital program. There were “timing” shifts in second births in 2015 and, probably, in 2016 due to the approaching completion of the originally set deadline for the implementation of the federal maternity (family) capital program (until the end of 2016).

The use of fertility rates for real generations of women allows for a more accurate assessment of the presence or absence of “timing” shifts. Beginning from the generation of women born in 1975, we can talk about a significant increase in fertility rate for second births compared to the previous generation with the beginning of the provision of federal maternity (family) capital. The analysis of age-specific fertility rates for second births in real generations of women allows us to formulate a conclusion about the effectiveness of fertility policy measures for real generations of Russians.

The uniqueness of the second approach consists in identifying the predictive possibilities of information about reproductive intentions obtained from the database of censuses and micro-censuses.

The convergence of the two approaches forms a comprehensive approach to assessing federal maternal (family) capital as one of the measures that can have an impact on promoting fertility, which is particularly important in light of the inclusion of the goal of birth rate growth in strategic documents in the field of demography and social policy<sup>6</sup>.

In general, the proposed approaches expand the possibilities of assessing the effectiveness of measures aimed at increasing birth rate in a country and can be used in relation to various demographic policy measures. The prospect of research may be to test the proposed methodology for assessing the effectiveness of federal maternity (family) capital for the first child, regional maternal (family) capital, as well as a number of measures related to the impact of lump-sum payments on fertility.

## Appendix

Average number of children born in real generations of women (according to the 2020 census) and the average expected number of children (according to the 2015 micro-census)

Region*	Women aged 40–44 according to the 2020 population census and aged 35–39 according to the 2015 micro-census		Women aged 45–49 according to the 2020 population census and aged 40–44 according to the 2015 micro-census	
	Average number of children		Average number of children	
	Born (40–44 years)	Expected (35–39 years)	Born (45–49 years)	Expected (40–44 years)
<b>Russian Federation</b>	<b>1.66</b>	<b>1.79</b>	<b>1.60</b>	<b>1.71</b>
Chechen Republic	2.79	3.16	2.72	2.84
Republic of Ingushetia	2.73	2.99	2.96	3.01
Republic of Dagestan	2.48	2.60	2.47	2.54
Republic of Tuva	2.41	2.28	2.33	2.38
Republic of Altai	2.29	2.29	2.18	2.03
Republic of Sakha (Yakutia)	2.18	2.31	2.10	2.19
Republic of Buryatia	2.03	2.16	1.92	1.97
Republic of Kalmykia	2.03	2.10	1.98	2.08

<sup>6</sup> Bulletin of the Accounts Chamber of the Russian Federation. 2021. No. 9. Maternity capital. Available at: [https://ksp.mos.ru/upload/info\(press-centr\)/news/documents/Бюллетень%20СП%20РФ%20№9%202021\\_материнский%20капитал.pdf](https://ksp.mos.ru/upload/info(press-centr)/news/documents/Бюллетень%20СП%20РФ%20№9%202021_материнский%20капитал.pdf). (Accessed: November 9, 2024).

## Continuation of Appendix

Region*	Women aged 40–44 according to the 2020 population census and aged 35–39 according to the 2015 micro-census		Women aged 45–49 according to the 2020 population census and aged 40–44 according to the 2015 micro-census	
	Average number of children		Average number of children	
	Born (40–44 years)	Expected (35–39 years)	Born (45–49 years)	Expected (40–44 years)
Karachay-Cherkess Republic	2.03	2.26	1.97	2.23
Nenets Autonomous Area	2.02	2.02	2.00	2.08
Kabardino-Balkarian Republic	1.94	2.25	1.91	2.04
Yamal-Nenets Autonomous Area	1.90	2.01	1.82	1.82
Trans-Baikal Territory	1.89	1.98	1.84	1.98
Chukotka Autonomous Area	1.88	2.13	1.80	1.97
Khanty-Mansi Autonomous Area – Yugra	1.86	1.92	1.75	1.84
Republic of Khakassia	1.85	1.80	1.76	1.79
Kurgan Region	1.84	1.85	1.73	1.73
Astrakhan Region	1.83	1.87	1.75	1.78
Chuvash Republic	1.82	1.83	1.74	1.76
Udmurt Republic	1.81	1.77	1.75	1.72
Republic of Adygea	1.81	1.91	1.76	1.81
Tyumen Region (excluding autonomous areas)	1.81	1.85	1.72	1.77
Republic of North Ossetia – Alania	1.81	2.13	1.79	2.10
Jewish Autonomous Region	1.79	1.87	1.74	1.86
Irkutsk Region	1.78	1.94	1.73	1.87
Orenburg Region	1.77	1.87	1.69	1.76
Republic of Mari El	1.76	1.76	1.69	1.63
Altai Territory	1.75	1.71	1.64	1.71
Republic of Komi	1.74	1.73	1.65	1.73
Arkhangelsk Region	1.74	1.85	1.65	1.74
Vologda Region	1.74	1.83	1.66	1.68
Stavropol Region	1.73	1.94	1.69	1.79
Kostroma Region	1.72	1.70	1.62	1.61
Tomsk Region	1.72	1.81	1.63	1.77
Perm Region	1.72	1.86	1.65	1.79
Omsk Region	1.71	1.75	1.61	1.72
Kirov Region	1.71	1.78	1.62	1.72
Republic of Crimea	1.71	1.68	1.63	1.65
Republic of Bashkortostan	1.71	1.95	1.71	1.89
Amur Region	1.69	1.87	1.65	1.70
Krasnodar Region	1.68	1.72	1.63	1.67
Republic of Karelia	1.67	1.77	1.58	1.62

End of Appendix

Region*	Women aged 40–44 according to the 2020 population census and aged 35–39 according to the 2015 micro-census		Women aged 45–49 according to the 2020 population census and aged 40–44 according to the 2015 micro-census	
	Average number of children		Average number of children	
	Born (40–44 years)	Expected (35–39 years)	Born (45–49 years)	Expected (40–44 years)
Chelyabinsk Region	1.66	1.75	1.60	1.69
Krasnoyarsk Region	1.65	1.77	1.61	1.75
Novosibirsk Region	1.65	1.72	1.57	1.66
Republic of Tatarstan	1.65	1.79	1.64	1.81
Khabarovsk Region	1.64	1.75	1.57	1.65
Kamchatka Region	1.64	1.74	1.56	1.71
Kaliningrad Region	1.64	1.81	1.57	1.71
Novgorod Region	1.63	1.73	1.54	1.68
Sverdlovsk Region	1.62	1.80	1.57	1.68
Bryansk Region	1.62	1.68	1.57	1.57
Ulyanovsk Region	1.61	1.66	1.55	1.62
Kursk Region	1.61	1.69	1.53	1.64
Ryazan Region	1.61	1.62	1.53	1.57
Primorye Territory	1.61	1.71	1.56	1.64
Volgograd Region	1.61	1.76	1.58	1.66
Murmansk Region	1.60	1.81	1.49	1.62
Yaroslavl Region	1.60	1.65	1.49	1.58
Magadan Region	1.60	1.75	1.56	1.70
Kemerovo Region	1.59	1.75	1.54	1.66
Kaluga Region	1.59	1.72	1.51	1.62
Tver Region	1.58	1.70	1.51	1.63
Oryol Region	1.58	1.76	1.52	1.63
Republic of Mordovia	1.58	1.74	1.50	1.58
Saratov Region	1.57	1.71	1.52	1.58
Pskov Region	1.57	1.62	1.48	1.48
Lipetsk Region	1.57	1.72	1.50	1.59
Rostov Region	1.56	1.71	1.53	1.62
Sevastopol	1.56	1.58	1.46	1.56
Tambov Region	1.55	1.56	1.50	1.57
Penza Region	1.55	1.60	1.50	1.50
Vladimir Region	1.55	1.57	1.46	1.50
Nizhny Novgorod Region	1.54	1.64	1.47	1.54
Ivanovo Region	1.53	1.68	1.44	1.53
Sakhalin Region	1.53	1.72	1.48	1.65
Belgorod Region	1.53	1.63	1.48	1.59
Leningrad Region	1.51	1.63	1.47	1.60
Smolensk Region	1.49	1.60	1.43	1.53
Samara Region	1.49	1.63	1.44	1.58
Voronezh Region	1.47	1.61	1.44	1.55
Tula Region	1.46	1.67	1.40	1.57
Moscow Region	1.46	1.66	1.43	1.53
Moscow	1.37	1.57	1.34	1.48
Saint Petersburg	1.36	1.55	1.29	1.44

\* The regions are ranked according to reduction in the average number of children born to women aged 40–44.

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## Assessing the Resilience of Russia's Economy to Internal and External Challenges



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**Abstract.** The competition between the world economy leaders and contenders, which has intensified dramatically in the 21st century, resulted in the formation of a new global geo-economic reality. Its features include dissemination of aggressive tools like trade wars, secondary and tertiary sanctions, and hybrid conflicts to influence competitors' economic systems. Against the background of these circumstances coinciding with the rise of the sixth wave of innovation, there is a growing need to study the issue of raising the resistance of the economy to internal and external challenges. In this paper the resilience of the Russian economy is considered in the context of achieving economic sovereignty. We develop our own methodology for assessing its condition in terms of industrial, technological, structural and geo-economic components. The novelty of our approach is as follows: we combine end-to-end consideration of external factors influencing the resilience of the country's economy; we abandon

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thresholds in favor of comparing accounting periods with the baseline period, and use a floating scale of assessment. In order to avoid data subjectivization we use only transparent information and statistical materials from Rosstat, World Bank, WTO, OECD and other official institutions. The methodology was tested on the 2015–2022 time period, which made it possible to identify weak spots in the country's economic resilience system and develop a three-stage strategy for strengthening it. The major task of the first stage is to design a set of measures to protect and support the most vulnerable industries and those affected by sanctions pressure on the principles of “reciprocal protectionism”; at the second stage we propose to launch a restructuring of the economic system based on “enlightened semi-isolationism”; at the third stage it is vital to shift to “reasonable protectionism” with the task of integrating the national economy into the sixth wave of innovation. The results obtained can be used by the authorities of the Russian Federation when developing and adjusting the counter-sanctions strategy.

**Key words:** foreign trade activity, autarky trap, world economy, neo-protectionism, sanctions, hidden protectionism, economic resilience.

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### Introduction

A new economic order has emerged in the world economy by the third decade of the 21st century. One of its features is the forced necessity of countries “to pay attention to their national interests, even relying on the theory of open economy and on inviolable market principles in domestic and foreign markets” (Porokhovskii, 2024, p. 12). As a result of states increasingly raising the issues of achieving economic sovereignty and increasing economic resilience, “theories of ‘home economics’ are spreading” (Porokhovskii, 2024, p. 12).

Their practical implementation in recent years is accompanied by the massive use of economic and non-economic instruments of coercion of competitors, which have reached unprecedented levels by the 2020s, with the activation of secondary and tertiary forms of pressure, sanctioning their own allies for deviating from policies favorable to the world economy leaders. For example, 34 countries of the Global North imposed 10,124

restrictions against Russia alone, or 73% of all restrictions in force in the world at that time in 2022 as a result of the sharp deployment of anti-Russian sanctions pressure (*Tab. 1*). As of October 1, 2024, the number of anti-Russian sanctions imposed by unfriendly countries reached 22,230 (64% of the global total). For comparison: the two other most sanctioned countries in 2022–2024: Iran (which was in second place in the sanctions anti-rating as of October 1, 2024) and the Republic of Belarus (5th place) – cumulatively received various restrictions (in most cases for possible “assistance” to the Russian Federation in circumventing the sanctions regime) in 10% of the global total Russia in circumventing the sanctions regime) 10 times less – 1,634 and 711 respectively. Experts note the increasing unwinding of blocking (secondary) sanctions by the United States against both legal entities and individuals of its own partners (the Netherlands, Finland) and competitors (China, India) (Timofeev, 2023).

Table 1. Dynamics of sanctions in modern world practice, units

Imposing sanctions	2019	2020	2021	2022	2023	2024*
In relation to the Russian Federation	159	200	193	10,124	6,748	4,806
In relation to foreign countries	1,260	1,742	1,782	3,701	2,056	508
Total	1,419	1,942	1,975	13,825	8,804	5,314

\* On October 1, 2024.  
According to: Castellum.AI. Russia sanctions dashboard. Available at: <https://www.castellum.ai/russia-sanctions-dashboard>; X-Compliance. Statistics. Available at: <https://x-compliance.ru/statistics> (accessed: October 24, 2024).

It is clear that only a strong economic system with a proper resistance level can withstand such pressure. This explains the aim of the study – to develop our own methodology for assessing the key components of Russia's economic sovereignty to identify the most vulnerable positions in the counter-sanctions confrontation based on the results of its testing. Achievement of the goal requires the following tasks: clarification of the features of the evolution of theoretical approaches for studying the Russian economic resilience, development and subsequent testing of our own methodology in the Russian economy dynamics in 2015–2022. The object of the research is the level of resilience of the Russian economy in the context of aggravating geo-economic rivalry, the subject is a set of economic relations between the state and business, formed in the process of tightening sanctions pressure in the modern world economy. The practical significance of the methodology development consists in the possibility of identifying problem areas that require prompt adjustment of the counter-sanctions strategy in the conditions of growing geopolitical and foreign economic pressure.

#### **Theoretical background of the research**

The degree of a country's resistance to external and internal threats is measured by the economic resilience level. In the context of our study, resilience is generally understood as product, resource and technological self-sufficiency of the country's economic system, which allows promptly dealing with the aggravation of internal and external threats. In our opinion, the resilience level directly depends on the achievement of country's economic sovereignty.

The key objective of the research is to identify the level of the Russian Federation's achievement of economic sovereignty in the context of its three interrelated components: industrial-technological, structural, and geo-economic. Our approach dovetails with the conceptual framework enshrined in the Strategy for Scientific and Technological Development of the Russian Federation approved in 2024 and the regulatory documents adopted in fulfillment thereof<sup>1</sup>. For instance, the Strategy defines technological sovereignty (the industrial-technological component of economic sovereignty in our work) as “the state's ability to create and apply knowledge-intensive technologies critical for ensuring independence and competitiveness, and to be able to organize on their basis the production of goods (performance of works, provision of services) in strategically important spheres of activity of society and the state”. The structural component of economic sovereignty in this formulation of the issue will be a measure of independence, which should be understood as “the achievement by the Russian Federation of independence in critical areas of life support through high performance of scientific research and development and through the practical application of the results obtained”. In our

<sup>1</sup> Details are available in: On the Strategy for Scientific and Technological Development of the Russian Federation: Presidential Decree 145, dated February 28, 2024. Collection of Legislation of the Russian Federation 10, Art. 1373, 2024; “On the National Development Goals of the Russian Federation for the period up to 2030 and in the perspective up to 2036”: Presidential Decree 309, dated May 7, 2024. Collection of Legislation of the Russian Federation 20, Art. 2584, 2024; “On Approval of the Concept of Technological Development until 2030”: Governmental Order 1315-r dated May 20, 2023. Collection of Legislation of the Russian Federation 22, Art. 3964, 2023.

concept, economic sovereignty excludes autarky, so the indicators of its geo-economic component are designed to help determine the competitiveness level of the national economy, revealing “the advantages of the Russian Federation ... in social, cultural, educational and economic areas, evident in relation to other states”<sup>2</sup>.

In principle, the evolution of the foundations of the conceptual and methodological apparatus within the framework of assessing the achievement level of the country’s economic sovereignty has passed several stages (*Tab. 2*). As our analysis has shown, the “watershed” in each specific case was the imposition of geo-economic shocks at the start of the next cycle of technological rise. In the first case, the collapse of the socialist camp and, as a consequence, the replacement of the bipolar world economic system by a unipolar one, coincided with the simultaneous start of the fifth innovation wave: the spread of the Internet, mass computerization, and the development of biotechnology (Travkina, 2022, p. 55). The second one was the Asian financial crisis of the period 1997–1998, which came at the height of the third industrial revolution: big data development, digitalization, and robotization (Rifkin, 2014). The third turning point was the Great Recession of 2008–2009, which acted as a precursor to the transition to the fourth industrial revolution: the spread of cyber-physical and adaptive production systems, green technologies and networked information systems (Schwab, 2016) and the start of the sixth innovation wave: the convergence of NBIC technologies (Travkina, 2022, p. 55).

During the first stage (1991–1996), economic independence (sovereignty) was considered as one of the three components of Russia’s economic security along with the national economic stability

and the ability to pursue self-development and progress (Abalkin, 1994). The forced focus of the state on internal problems in the conditions of transition to the market gave the first concepts some features of the policy of “anti-crisis management”. Internal shocks were considered to be the key challenges, and the task of the proposed tools was to find ways to stabilize the domestic market and social sphere.

At the second stage (1997–2008), the change in economic conditions required the updating of the “anti-crisis” approach, especially in connection with a series of world crises that severely affected the transitional economy of the Russian Federation. First of all, this was reflected in the development of a broad indicative toolkit for diagnosing economic security through the prism of economic sovereignty. It was during this period that Russian experts first proposed to consider foreign economic sovereignty as one of the most important factors concerning economic sovereignty, but it was proposed to assess it by comparing the dynamics of the RF macroeconomic indicators with the world average trends (Glaz’ev, 1997; Stepashin, 2002).

The third stage (2009 – present) with the exhaustion of the potential of the unipolar structure of the world economic system, which implied sovereignty only in the model of functioning “according to the rules of the hegemon”, aggravated the problem of acquiring real economic sovereignty. The solution of this issue is closely connected with the interception of technological and economic initiative from the leading countries of the world economy, which requires, first, a more detailed definition of possible points of growth of countries – candidates for leadership, and second, the development of working algorithms to counteract the “weaponization” (Mariotti, 2024) of trade policy of developed countries. In this regard, at this stage, attempts have been intensified to address the issues of economic sovereignty of the country in the categories of resistance, resilience and fragility of

<sup>2</sup> On the Strategy for Scientific and Technological Development of the Russian Federation: Presidential Decree 145, dated February 28, 2024. Collection of Legislation of the Russian Federation 10, Art. 1373, 2024.

Table 2. Stages of evolution of methodological approaches to diagnosing Russia's economic vulnerability

Stage	Main authors	Interpretation of economic sovereignty	Substantive content of the methodological apparatus
Economic security	L.I. Abalkin, E.M. Bukhval'd, V.K. Senchagov	"A set of conditions and factors that ensure the independence of the national economy, its stability and sustainability, its ability for constant renewal and self-improvement" (Abalkin, 1998), as well as 'guaranteed protection of national interests' (Senchagov, 1995) and "normal living conditions for population and sustainable provision of resources for the national economy development" (Bukhval'd et al., 1994)	The country's economic sovereignty is considered in fact from the angle of the level of economic security, the indicators of which are assessments of resource potential, efficiency of resource use, capital and labor, as well as quality of life, inflation rate, unemployment rate, budget deficit, embeddedness in the world economy. The classifier of threats to economic security was formed: increasing decline in production and loss of the market; destruction of scientific and technological potential and deindustrialization of the economy; food dependence; growing unemployment and weakening of labor motivation
Economic sovereignty	S.Yu. Glaz'ev, S.V. Stepashin, I.Ya. Bogdanov	"The state of the economy and productive forces of society, under which it is possible to independently ensure sustainable socio-economic development of the country" (Glaz'ev, 1997), to maintain 'the necessary level of national security of the state' (Vasil'ev et al., 1999), as well as "the proper level of competitiveness of the national economy in conditions of global competition" (Bogdanov, 2001)	The economic sovereignty is derived on the basis of a comprehensive assessment of macroeconomic indicators grouped into modules of internal and external threats, with the subsequent correlation of the results obtained with the world average threshold values. For the first time an attempt was made to consider the level of sovereignty achievement by individual spheres of economic activity to identify potential external threats with the proposal of specific ways to increase the resilience of the economic system of the Russian Federation
Economic resilience	V.V. Akberdina, N.V. Smorodinskaya, E.V. Balatsky	Economic resilience implies the achievement of maximum possible sustainability to reduce the vulnerability of a country's economy to endogenous and exogenous stresses through increasing resilience. In this formulation of the issue, resilience is understood as "the ability of the economic system of states to recover from shocks, while positively adapting and transforming the structure of the economy under long-term stresses, changes and uncertainty" (Smorodinskaya et al., 2021), sustainability – "the presence of pre-event actions aimed in advance at strengthening the economy and mitigating the consequences of anticipated challenges and shocks" (Akberdina, 2021), vulnerability (fragility) – the level of "dependence of the country's economy on changes in the world markets, as well as possible losses of the economic system under the influence of external shocks" (Balatsky, Ekimova, 2023)	The general methodological approach is the decomposition of macroeconomic indicators, their comparison with the base period or threshold values, which are determined by expert assessment. To assess the economic resilience of states, econometric models are most often used to estimate the speed of recovery of the economic system after a shock on the basis of indicators related to the dynamics of the country's GDP. To diagnose changes in the level of resilience of the country's economy, the selected indicators (being the factors of resilience) are usually compared over different periods of time (usually two or three periods are compared). From the point of view of vulnerability assessment, a selection is used (with the help of econometric and expert assessments) of industries whose weight in the country's economy is sufficient to ensure that in the event of a breakdown in international ties the economic system can maximally autonomously switch to the self-sufficiency mode in the medium term. The method of calculating integral indicators of economic sustainability in the format of arithmetic or geometric mean values of a set of indicators dominates in the considered approaches
Own compilation.			

the economic system in the context of adaptability to neutralize the vulnerabilities identified in its framework.

In recent years, as the sanctions pressure has intensified, the interest in the issues of economic sovereignty and resilience of the Russian economy has been steadily growing. The trend is confirmed by the eLibrary data for 1991–2024 (Tab. 3). Moreover, special attention is beginning to be paid to the issue of the foreign economic component of economic sovereignty. For instance, in 1991–1999, the Russian Science Citation Index (RSCI) database did not contain any works (scientific articles or books) with the combination “foreign economic security” in the list of key words. For the period 2001–2010, 15 such works appeared, and for 2011–2024 (as of October 1, 2024), their number was 182<sup>3</sup>.

Foreign literature traces the growing relevance of academic research devoted to the issues concerning economic sovereignty and assessment of its components in the categories of resistance, sustainability, and resilience. For example, the number of works by foreign authors on this topic published in the Scopus database increased from 0.7 thousand to 12.4 thousand in 2000–2023 (Riepponen et al., 2023, p. 329). In general, they are characterized by the interpretation of economic resilience concept similar to the approaches of Russian specialists:

“... the ability of countries to recover... positively adapting and transforming the structure of the economy under long-term stresses...”<sup>4</sup>. The main difference is the focus of Western experts on external rather than internal threats. In particular, the ways of countering global economic and financial crises (Davis, 2011; Martin, 2012), leveling the effects of deglobalization and fragmentation of the world economy (Bolt, Willem, 2023), overcoming the challenges of the “Cold War 2.0”<sup>5</sup> are considered as priorities. Therefore, from the point of view of foreign economists, the basis for increasing the resilience of economic systems is the functioning of global value chains as “remarkably resilient to shocks” structures (Antras, 2020, p. 25). In this regard, the key strategy is proposed to define “reglobalization”, the essence of which is the gradual abandonment of trade barriers by developing countries with their subsequent integration into knowledge-intensive links of global production networks (Gereffi, 2020).

Three main groups of indicators are generally used in modern science from the point of view of qualification of general economic sovereignty: composite indices, multicriteria assessment without aggregation and particular indicators. Composite indices are calculated by aggregating a large array of both objective and subjective data on selected areas.

Table 3. Number of publications (scientific articles and books) in the RSCI database by key words for 1991–2024

Key words	1991–1999	2000–2010	2011–2020	2021–2024
Economic security	25	1394	14,346	8,527
Economic sovereignty	0	15	142	170
Resilience	0	0	39	167
According to: eLibrary scientific electronic library data. Available at: <a href="https://elibrary.ru/defaultx.asp?">https://elibrary.ru/defaultx.asp?</a> (accessed: October 24, 2024).				

<sup>3</sup> Scientific electronic library eLibrary. List of publications with the keyword combination “foreign economic security”. Available at: [https://www.elibrary.ru/keyword\\_items.asp?id=5033464&show\\_option=0](https://www.elibrary.ru/keyword_items.asp?id=5033464&show_option=0) (accessed: May 8, 2024).

<sup>4</sup> OECD. *Guidelines for Resilience Systems Analysis. How to Analyse Risk and Build a Roadmap to Resilience*. Paris, 2014. P. 6.

<sup>5</sup> Gopinath G. Cold war II? Preserving economic cooperation amid geoeconomic fragmentation. *Plenary Speech 20th World Congress of the International Economic Association*, Colombia. 2023. Available at: <https://www.imf.org/en/News/Articles/2023/12/11/sp121123-cold-war-ii-preserving-economic-cooperation-amid-geoeconomic-fragmentation> (accessed: May 19, 2024).

Multi-criteria evaluation without data aggregation is to determine the optimal choice that satisfies the greatest number of criteria and possesses certain properties. Separate indicators are individual metrics calculated to assess a specific economic phenomenon. The expert community agrees that it is difficult to unambiguously distinguish true or false in all the above types of indicators, as each of them has a number of advantages and disadvantages. For example, composite indices are characterized by ambiguity of algorithms for combining different metrics, and multi-criteria approaches are often not accompanied by both a thorough interpretation of the calculation results and justification of the principles of selecting criteria, which are determined by experts. Simpler indicators, in turn, reflect only certain aspects of the issue under consideration and do not give the whole picture.

#### **Methodology for assessing the Russian economic resilience in the context of new forms of protectionism approval**

We have developed a methodology for assessing the economic resilience in the conditions of the beginning of the “global protectionist regime” based on the conceptual basis accumulated by Russian science (Biryukova, 2024, p. 152). Its main task is to identify the economic resilience level in three interrelated areas: industrial-technological, structural, and geo-economic. The following circumstances predetermined the focus of attention on the three components of the country's economic sovereignty. First, the destruction of the country's industrial base, undermining the institutional foundations of the economy and creating a situation of artificial autarky are the main objectives of the sanctions pressure. Second, the acquisition of systemic resilience in the three identified areas of economic activity should ensure sufficient sustainability of the economic system as a key condition for stable progressive development. Third, the economic sovereignty components that we have identified are interrelated, for example,

industrial-technological (which is understood as “the presence under national control of its own lines of development and conditions for manufacturing high-tech products<sup>6</sup>) by itself is unattainable without accelerating structural modernization and gaining a foothold in foreign markets, which determine the enterprise's competitiveness level, especially in conditions of increasing “use of extraterritorial protectionism” (Milovidov, Asker-Zadeh, 2020, p. 43). The methodology was conceptually based on the following reference points.

The first is verifiability of the obtained data, which implies abandoning the widely used method of expert rating of the results obtained by the selected indicators in favor of determining the vector of their change and its correlation with the global trend. If we go “from the enterprises”, it will be practically impossible to bring to a common denominator the economic interests of large, medium and small enterprises, especially if we try to “weigh” them by industry. To circumvent these barriers, we propose to rely on easily verifiable transparent materials of Rosstat and international databases of the World Bank, WTO and OECD on the selected indicators.

The second is concentration on three reference points for the formation of the basis of stable innovation-driven economic growth, which can be defined as industrial-technological, structural, and geo-economic components of the country's economic sovereignty. When assessing the resilience achievement level for each component of Russia's economic sovereignty, we propose to use a group of 10 indicators calculated on the basis of official Russian and international statistics for 2016–2022. The methodology assumes the “breakdown” of the period under consideration into three three-year cycles (2016–2018, 2019–2021, 2020–2022), where

<sup>6</sup> “On Approval of the Concept of Technological Development until 2030”: Governmental Order 1315-r dated May 20, 2023. Collection of Legislation of the Russian Federation 22, Art. 3964, 2023.

2018 is the pre-pandemic year, and 2022 is the most extreme of those available in the “statistical” support at the time of preparing the work.

The third is the use of an empirical institutional approach to assess the state of the three components of Russia’s economic sovereignty based on the current situation. The calculation of chain and, in some cases, multi-criteria indices determine the change in the vector of direction of each indicator. In case of an upward trend in the segment under consideration, the indicator is assigned the value “+”, while in case of a downward trend the indicator is assigned the value “-”. The obtained values “+” and “-” for each cluster of indicators are summarized. Depending on the total amount by means of expert interpretation of the results obtained, a conclusion is made about the current stage of resistance of the country’s economy to shocks<sup>7</sup>. The final values in fact act as a trend marker, revealing the vulnerabilities of counter-sanctions protection. This is how the direction of the state economic policy is set “toward enterprises” as the main actors of the economic system<sup>8</sup>.

The fourth is dialectical interpretation of the concept of “geo-economic component of the country’s economic sovereignty”, which implies, first, the inadmissibility of even conceptual consideration of the autarkic model of economic

management of the Russian Federation. Second, the absolutization of import substitution is excluded. Third, we proceed from the fact that a country under sanctions pressure not only can, but also must protect its economy.

The fifth is practical orientation of the methodological framework used. This is predetermined by a) the “mobility” of the proposed package of indicators, which can be appropriately adjusted when new inputs appear; b) the mobility of the time scale, which can be easily extended after the accumulation of a new data set; c) functionality, which allows determining the country’s positioning on the axis of reaching a sustainable growth trajectory with the use of the working algorithm of the methodology application. On this axis, we distinguish three levels of achieving resilience: “incomplete” – “full” – “systemic”<sup>9</sup>. If there are no indicators with positive values at the end of the calculations, the economy does not meet the criteria of resilience; a set of positive indicators less than ½ of the total characterizes the level of “initial resilience”; 5–6 positive assessments correspond to the level of “incomplete resilience”, 7–8 – “full resilience”, 9–10 – “systemic resilience”.

The proposed methodology is distinguished, first, by greater attention to the consideration of external factors affecting the economic self-sufficiency of the country. In particular, most macroeconomic indicators are compared with the global dynamics or with the corresponding metrics of the countries – the world economy leaders for a more correct final assessment.

Second, we proceed from the fact that averaged global indicators or econometric/expert estimates, which in many existing methodologies are accepted

<sup>7</sup> In some cases, negative dynamics is recognized as positive, for example, when assessing indicators S3, G5, G7.

<sup>8</sup> A similar methodological technique, without resorting to econometrics of the economic situation (“there is no fixed rule about what measures contribute information to the process or how they are weighted in our decisions”), but revealing on the basis of official statistics data the direction of trends developing in the perimeter of the research object (“range of monthly measures of aggregate real economic activity published by the federal statistical agencies”), is used, for example, by the U.S. National Bureau of Economic Research (NBER, Washington) when clarifying the moments of the onset and end of recession in the world economy and the leading countries. See: NBER. Business Cycle Dating Procedure: Frequently Asked Questions. Available at: <https://www.nber.org/research/business-cycle-dating/business-cycle-dating-procedure-frequently-asked-questions> (accessed: October 24, 2024).

<sup>9</sup> Full resilience is understood as the ability of the economic system to switch to the self-sufficiency mode in the medium term for stable functioning, while systemic resilience is understood as the ability to transform as quickly as possible to restore the progressive dynamics in the conditions of imposing internal challenges and external shocks.

as threshold values, in non-standard economic conditions generated by the sanctions war against the Russian Federation, may exacerbate the problem of inconsistency between the results obtained and the real situation in the country. Instead of assessing the achievement level of threshold values for selected indicators, the indicators of the reporting period are compared with the base period.

Third, the proposed methodology uses a floating time scale of assessment (freely movable on the axis to the left or right depending on the tasks to be solved), built in reference not to specific years, but to three-year periods, where the final values at the end of each of them, calculated with the help of chain indices, are compared both with the base year taken as a unit (in some cases – with the average annual total for 5 years), and among themselves.

This makes it possible to smooth out the extremes of indicators for separate years and get a more objective view of the dynamics of a particular process.

### Research results

The testing of our proposed methodology for measuring the level of resilience of the Russian economy in terms of three components due to the known time lag with the publication of official Russian statistics was initially carried out on the basis of the final data for 2015–2021. This allowed identifying at what stage of building the economy of resistance the Russian economy was at the moment of tightening sanctions pressure and which sectors required priority attention and support in the counter-sanctions confrontation to make possible appropriate corrections *Table 4* summarizes the results.

Table 4. Matrix of summary indicators for assessing the state of the three components of Russia's economic sovereignty, 2015–2021

Indicator	2016–2018	2019–2021	2015–2021
P1. Change in the share of enterprises of professional, scientific, technical activities in the total turnover of organizations in the RF	–	+	–
P2. Change in the number of researchers in the RF	–	–	–
P3. Change in the share of R&D in federal budget expenditures and GDP of the RF	–	+	–
P4. Change in the share of funds of the business sector for R&D development in total domestic expenditures on R&D in the RF	+	–	–
P5. Changes in the dynamics of applications for patents for invention filed by Russian applicants	–	–	–
P6. Change in the share of high-tech exports in the total exports of goods of the RF	–	+	+
P7. Change in the share of high-tech imports in the total imports of goods of the RF	–	+	+
P8. Change in the share of innovative goods, works and services in the total volume of shipped goods, works and services in the RF	–	–	–
P9. Change in the dynamics of innovative goods production in the RF	+	+	+
P10. Change in specific electricity consumption for production of certain types of products in the RF*	–	–	+
Resulting indicators of the industrial-technological component of economic sovereignty for 2015–2021: 4+/6– (Outcome for 2021: Initial Resilience level)			
S1. Change in the dynamics of labor productivity in the economy of the RF	–	–	–
S2. Change in the share of manufacturing industry in the GDP of the RF	+	–	+
S3. Change in the share of the top five regions in the GRP of the Russian Federation*	–	–	–
S4. Change in the share of turnover of small and medium-sized enterprises (SMEs) in the total turnover of organizations in the RF	+	–	–
S5. Change in the RF consolidated budget expenditures on economic development in the context of changes in the weighted average tax burden	–	+	–
S6. Change in the share of gross savings in the GDP of the RF	–	–	–

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Indicator	2016–2018	2019–2021	2015–2021
S7. Change in the share of organizations' own funds in the total volume of investments in the RF*	–	–	–
S8. Change in the share of foreign direct investment in the total investment volume in the RF	–	–	–
S9. Change in the share of machinery and equipment in the total investment volume in fixed assets in the RF	+	–	+
S10. Change in the degree of depreciation of fixed assets by certain types of economic activity in the RF	–	+	–
Resulting indicators of the structural component of economic sovereignty for 2015–2021: 2+8– (Outcome for 2021: Initial Resilience level)			
G1. Change in the share of the RF in the key macroeconomic indicators of the world economy	+	–	+
G2. Change in the share of the RF in the world trade in goods and services	+	–	+
G3. Change in Russia's share in world trade in value added categories	+	–	–
G4. Change in the share of the RF in the world import of machinery and equipment	–	–	–
G5. Change in the share of top-3 commodity groups in Russian exports*	–	–	–
G6. Change in the share of non-resource non-energy exports (NRE) in the total exports of the RF	–	+	+
G7. Change in the share of top-3 partners in exports and imports of the RF*	–	–	–
G8. Change in the level of self-sufficiency of the RF in the most important raw material resources	+	–	+
G9. Change in the share of advanced production technologies acquired by Russia abroad in the total array of their use	+	–	–
G10. Changes in Russia's position in global human capital development indices	–	–	–
Resulting indicators of the geo-economic component of economic sovereignty for 2015–2021: 4+6– (Outcome for 2021: "initial resilience" level)			
<p>* Indicators, the negative dynamics of which is assessed positively.</p> <p>According to: Russian Statistical Yearbook (RSY); Regions of Russia. Stat. coll. for the corresponding years. Available at: <a href="https://rosstat.gov.ru/folder/210/document/12994">https://rosstat.gov.ru/folder/210/document/12994</a>; External sector statistics of the Bank of Russia. Available at: <a href="https://www.cbr.ru/statistics/macro_itm/svs/">https://www.cbr.ru/statistics/macro_itm/svs/</a>; World Bank data. Available at: <a href="https://data.worldbank.org/indicator/NV.IND.MANF.CD">https://data.worldbank.org/indicator/NV.IND.MANF.CD</a>; <a href="https://data.worldbank.org/indicator/NY.GNP.MKTP.CD">https://data.worldbank.org/indicator/NY.GNP.MKTP.CD</a>; <a href="https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD">https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD</a>; <a href="https://data.worldbank.org/indicator/BX.GSR.GNFS.CD">https://data.worldbank.org/indicator/BX.GSR.GNFS.CD</a>; <a href="https://data.worldbank.org/indicator/NE.IMP.GNFS.CD">https://data.worldbank.org/indicator/NE.IMP.GNFS.CD</a>; <a href="https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=RU">https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=RU</a>; BP Statistical Review of World Energy for the corresponding years. Available at: <a href="https://www.bp.com/en/global/corporate/energy-economics.html">https://www.bp.com/en/global/corporate/energy-economics.html</a>; OECD Data. TiVA 2023. Principal Indicators. Available at: <a href="https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1">https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1</a>; U.S. Geological Survey. Mineral Commodity Summaries, 2023, p. 114, 146; FAO Stat. Crops and livestock products. Available at: <a href="https://www.fao.org/faostat/en/#data/QCL">https://www.fao.org/faostat/en/#data/QCL</a> (accessed: May 27, 2024).</p>			

The final assessment of indicators of the industrial-technological component of economic sovereignty is 4 positive and 6 negative values. The indicators of change in the share of high-tech exports (imports) in the total exports (imports), dynamics of production of innovative goods and energy efficiency of production of the most important types of industrial products turned out to be “in the plus” (the result of 2021 vs 2015) (*Tab. 5*). The indicator of the average annual share of enterprises of professional, scientific and technical activities in the total turnover of organizations in the RF (due to the increase in the R&D share in the federal budget expenditures and GDP) in 2019–2021 exceeded the similar outcome of the 2016–2018 triennium. However, the average annual level of the period 2011–2015 could not be surpassed. At the same time, the issues of the continuously decreasing number of researchers (from 379.4 thousand people in 2015 to 340.1 thousand people

Table 5. Dynamics of particular indicators for assessing the state of the three components of Russia's economic sovereignty in 2015–2021, %

Indicator	2015	2016	2019	2021
P1. Share of enterprises of professional, scientific, technical activities in the total turnover of organizations in the Russian Federation	no data	3.02	2.65	3.02
P3. Share of R&D in federal budget expenditures and GDP of the RF	2.81	2.45	2.69	2.53
P4. Share of business sector funds for R&D development in total domestic expenditures on R&D in the RF	16.49	16.41	14.90	13.56
P6. Share of high-tech exports in total exports of goods of the RF	12.92	12.78	29.40	36.89
P7. Share of high-tech imports in total imports of goods of the RF	55.59	66.98	72.28	73.38
S2. Share of manufacturing industry in the GDP of the RF	12.4	11.7	13.0	12.9
S3. Share of the top five regions in the GRP of the RF	38.29	38.88	39.87	41.72
S4. Share of SME turnover in the total turnover of organizations in the Russian Federation	38.49	31.75	30.23	25.60
S5. Expenditures of the RF consolidated budget on economic development *, % of GDP**	15.99	15.01	16.27	15.72
S9. Share of machinery and equipment in the total investment volume in fixed assets in the RF	31.48	30.37	36.97	36.48
G2. Share of the RF in the world trade in goods and services	1.60	1.44	1.69	1.67
G3. Share of the RF in world trade in value added categories	1.98	1.81	2.19	1.98***
G4. Imports of machinery and equipment in the RF, billion U.S. dollars**	125.4	92.5	108.4	100.5
G5. Share of top-3 commodity groups in Russian exports	83.1	81.2	85.6	84.1
G9. Share of advanced production technologies (APT) acquired by the RF abroad in the total array of their use	29.01	29.47	29.75	31.34
<p>* The sum of expenditures carried out under the following budget lines: "National Economy", "National Defense", "Health Care", "Science" ("fundamental research", "applied scientific research in the field of general state issues").</p> <p>** The line represents annual averages for 2011–2015, 2016–2018, 2019–2021, and 2016–2021.</p> <p>*** OECD calculates and publishes data for 2020 using the Trade in Value-Added methodology with a time lag of 3 to 5 years.</p> <p>According to: Russian Statistical Yearbook (RSY); Regions of Russia. Stat. coll. for the corresponding years. Available at: <a href="https://rosstat.gov.ru/folder/210/document/12994">https://rosstat.gov.ru/folder/210/document/12994</a>; External sector statistics of the Bank of Russia. Available at: <a href="https://www.cbr.ru/statistics/macro_itm/svs/">https://www.cbr.ru/statistics/macro_itm/svs/</a>; World Bank data. Available at: <a href="https://data.worldbank.org/indicator/NV.IND.MANF.CD">https://data.worldbank.org/indicator/NV.IND.MANF.CD</a>; <a href="https://data.worldbank.org/indicator/NY.GNP.MKTP.CD">https://data.worldbank.org/indicator/NY.GNP.MKTP.CD</a>; <a href="https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD">https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD</a>; <a href="https://data.worldbank.org/indicator/BX.GSR.GNFS.CD">https://data.worldbank.org/indicator/BX.GSR.GNFS.CD</a>; <a href="https://data.worldbank.org/indicator/NE.IMP.GNFS.CD">https://data.worldbank.org/indicator/NE.IMP.GNFS.CD</a>; <a href="https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=RU">https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=RU</a>; BP Statistical Review of World Energy for the corresponding years. Available at: <a href="https://www.bp.com/en/global/corporate/energy-economics.html">https://www.bp.com/en/global/corporate/energy-economics.html</a>; OECD Data. TiVA 2023. Principal Indicators. Available at: <a href="https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1">https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1</a>; U.S. Geological Survey. Mineral Commodity Summaries, 2023. Pp. 114, 146; FAO Stat. Crops and Livestock Products. Available at: <a href="https://www.fao.org/faostat/en/#data/QCL">https://www.fao.org/faostat/en/#data/QCL</a> (accessed: May 27, 2024).</p>				

in 2021), the decrease in the number of applications for patents for inventions filed by Russian applicants (respectively, from 29.3 to 19.6 thousand), the decrease in the share of innovative goods, works and services in the total volume of shipped goods, works performed and services rendered (from 7.9 to 5.0%) required urgent government intervention to reverse the downward trend throughout the period under consideration.

The structural component indicators of the country's economic sovereignty received the largest number of negative values – 8 against 2 positive values. The most alarming was the situation with

the readiness of the economic system to accelerate modernization: in 2015–2021, both labor productivity grew slower (1.5% per year) and wages (4.6%), and the value of fixed assets (18.0% when calculated in actual prices), and the share of gross savings in Russia's GDP throughout the period under consideration exceeded the base level of 2015 (22.3%) only once – in 2021 within the statistical error (22.4%), and in 2023 remaining below the "base" (22.1%)<sup>10</sup>. The final result of investment activity is ambiguous: the share of own funds in

<sup>10</sup> Indicators. Business environment. *Monokl'*, 2024, 7. P. 78.

the total volume of investments grew consistently from 50.22% in 2015 to 55.43% in 2021 with an equally stable decrease in the share of profit in the total turnover of organizations from 31.85% to 27.37%, respectively, and the average annual volume of foreign direct investment (FDI) at the end of 2016–2021 was 61% of the 2011–2015 indicator<sup>11</sup>. At the same time, the indicators of changes in the share of manufacturing industry in GDP, SME turnover in the total turnover of organizations, the specific weight of machinery and equipment in the structure of investment in fixed assets in the Russian Federation began declining from 2019, while in 2016–2018, they were steadily growing. The prevalence of negative values of structural component indicators of the RF economic sovereignty by 2021 indirectly spoke about the possibility of the Russian economy falling into the trap of the economy of “institutional inertia”, which Russian experts define as “the continuation of ‘business as usual’ in a new, highly unstable environment, the primacy of widely understood stability over development ...” (Belousov, 2023, pp. 14–15).

The geo-economic component of economic sovereignty at the end of 2021 had 4 positive and 6 negative assessments. Positive dynamics for 2015–2021 was revealed in terms of changes in the RF share in the key macroeconomic indicators of the global economy (the RF share in global GDP for 2015–2021 increased from 1.81 to 1.88%, FDI inflow – from 0.25 to 1.84%, global exports of goods and services – from 1.84 to 1.94%), quite convincingly characterizing the futility of the Western countries’ efforts to push Russia to the

periphery of the global economy during the period under consideration. Simultaneous growth in the share of non-resource non-energy exports in the RF total exports (from 34.55% to 38.63% in 2015–2021<sup>12</sup>), but decreasing to 34.41% in 2023<sup>13</sup>) and the self-sufficiency level in the most important resources – grain (gross harvest increased from 104 to 121 million tons, record 153.8 million tons in 2022 and 142.6 million tons in 2023<sup>14</sup>), proven oil reserves (growth from 102.4 to 107, 7 billion barrels<sup>15</sup>), iron ore (remained at the level of 25 trillion tons), rare earth metals (growth from 18.0 to 19.3 million tons<sup>16</sup>) – made it possible to conclude that the RF economic system is ready to withstand the increasing sanctions pressure. The transition to the level of “incomplete resilience” was seen through deepening the diversification of export-import activities in the commodity and geographical context and finding the optimal “balance between internal and external sources of growth” (Sutyurin, Korgun, 2024, p. 81). At the same time, we suppose that achieving full resilience in the context of the geo-economic component of economic sovereignty implies the exclusion of autarky in any scenario.

The 2024 fall presents an opportunity to check the results fairness of the economic resilience assessment of the Russian economy at the end of 2022<sup>17</sup>. However, it is necessary to make a reservation. Some indicators, first of all, the

<sup>12</sup> PCE 2022, p. 584, 592; PCE 2019, p. 591, 599; PCE 2017, p. 566, 574.

<sup>13</sup> Edovina T. (2024). Secondary adaptation. *Kommersant*, March 14, 45. P. 2.

<sup>14</sup> Mertsalov A., Komarov V. (2024). The empire has frozen. *Kommersant*, May 17, 84. P. 10.

<sup>15</sup> BP Statistical Review of World Energy for the corresponding years. Available at: <https://www.bp.com/en/global/corporate/energy-economics.html> (accessed: May 29, 2024).

<sup>16</sup> U.S. Geological Survey. Mineral Commodity Summaries, 2023. P. 146.

<sup>17</sup> As of October 2024, it was impossible to test the methodology for the period 2021–2023 due to the non-printing of statistical collections “Russian Statistical Yearbook 2023”, “Regions of Russia 2023” and the absence of a number of indicators from the database of the World Bank, WTO, etc. for 2023.

<sup>11</sup> As of the end of 2021, the accumulated FDI volume in per capita terms in the Russian Federation – 3 thousand U.S. dollars - was comparable to the indicator of Albania and Kosovo, significantly inferior to the indicators, for example, Serbia – 6.8 thousand U.S. dollars, Kazakhstan – 7.1 thousand U.S. dollars, Czech Republic – 17 thousand U.S. dollars, Russia – 8.2 thousand U.S. dollars, Kazakhstan – 8.1 thousand U.S. dollars, and the Czech Republic – 8.2 thousand U.S. dollars, respectively. (Astrov, 2024, p. 9).

geo-economic component of the RF economic sovereignty had to be assessed expertly due to the lack of relevant data in the public press<sup>18</sup>. Our methodology testing for the period 2020–2022 proved the strengthening of Russia's economic sovereignty in the context of all three components. Let us highlight the main results obtained.

The resilience achievement level in the context of the industrial and technological component of the Russia's economic sovereignty at the end of 2022 showed consolidation at the stage of “incomplete resilience”: six positive values in 2020–2022 against five in 2019–2021. This result was ensured, first of all, by the R&D growth financing by the state from 2.41% of the federal budget in 2020 to 2.51% in 2022 and by the business sector – from 13.7 to 14.5% of domestic R&D expenditures, which was reflected, among other things, in the slowdown of the decline in the number of scientific organizations and researchers in the Russian Federation. To move to the stage of “full resistance”, it is necessary to reverse the situation with the decline in the share of innovative goods, works and services in the total volume of their realization and the increase in the energy intensity of production of most basic types of products considered by official statistics. Additional support is required for Russian researchers and scientists – the key actors of the new knowledge economy, whose number, although at a slower pace, continues declining. Due to the lack of official reporting for 2022, we have estimated the share of high-tech exports and imports in the country's total turnover on the basis of experts' comments<sup>19</sup>.

In the block of indicators of the structural component of the country's economic sovereignty,

<sup>18</sup> For example, due to the suspension of publication of data on statistics of foreign trade in goods and services of the RF, data for 2022 are unavailable. For more details, see: PCE 2023, p. 595.

<sup>19</sup> For more details, see: Borin A. et al. (2023). The impact of EU sanctions on Russian imports. *CERP*. May 29. <https://cepr.org/voxeu/columns/impact-eu-sanctions-russian-imports> (accessed: October 19, 2024).

the number of positive values increased from two for 2019–2021 to three for 2020–2022 against seven negative values. A positive point is also a slight decrease in the tax burden from 25.9% to 25.5% of GDP with a simultaneous outstripping increase in consolidated budget expenditures on the economy from 16.2% to 17.2%, which in the conditions of severe external pressure is, in particular, one of the main conditions for forcing structural adjustment, which allowed, for the first time in contemporary Russian practice, in 2022 reducing the depreciation degree of fixed assets simultaneously in the sector of mining, manufacturing and agriculture. However, it is the structural component of economic sovereignty that remains the most vulnerable in the conditions of sanction shocks and requires maximization of support from the state. As the results of 2022 showed, the most problematic issues here are the deceleration of labor productivity by 3.6% in 2022<sup>20</sup>, especially against the background of outstripping dynamics of labor remuneration and growth in the value of fixed assets, the shrinking share of gross savings in GDP with a certain lack of involvement of the banking system in lending to business needs and, as a consequence, the more than modest (and non-growing) contribution of small and medium-sized enterprises to overall economic growth, which remains at the level of the 1990s (21%)<sup>21</sup>. For obvious reasons, foreign direct investment in 2022 went “into the negative”, so the corresponding indicator for 2021 was considered as a final indicator<sup>22</sup>.

<sup>20</sup> Rosstat reported a 3.6% drop in labor productivity in the country in 2022. *Interfaks*, October 6, 2023. Available at: <https://www.interfax.ru/business/924578> (accessed: October 19, 2024).

<sup>21</sup> Stroiteleva M. (2024). More from less: SME contribution to the Russian economy increased to 21%. *Izvestiya*, January 17. Available at: <https://iz.ru/1635167/mariia-stroiteleva/bolshe-ot-menshikh-vklad-msp-v-ekonomiku-rossii-vyrosdo-21-924578> (accessed: October 19, 2024).

<sup>22</sup> This estimate is the authors' opinion based on the known “exodus” of Western capital from Russia in 2022–2024. For more details, see: Aminov Kh., Komarov V. (2024). Remedies for withdrawal from the Russian market. *Kommersant*, October 11, 187. P. 7.

Unfortunately, Russian and foreign statistical primary sources for the fall of 2024 allowed calculating only half of the geo-economic component indicators of the country's economic sovereignty. In the remaining cases, we used expert assessment based on open press data. Four positive values (two for the 2019–2021 period) against six negative values confirmed the unsuccessfulness of the Western coalition's efforts to isolate Russia from the global market. In this case, in our opinion, there is a direct correlation with the strengthening of the industrial and technological component of the country's economic sovereignty. For instance, the indicators of the share of domestic advanced production technologies in the total volume of their use (growth from 68.2% to 68.7% in 2020–2022, with a total increase in the use of PPT in the economy from 242 thousand to 269 thousand), non-resource non-energy exports in its total volume (growth in the net value of non-energy exports in 2020–2022 from 161.4 billion U.S. dollars to 190.4 billion U.S. dollars, and the share of total commodity exports from 48% to 80%<sup>23</sup>) and self-sufficiency in the most important resources are “in the plus”. One of the most critical issues for the geo-economic component, requiring the combined efforts of the state and business, is the low level of geographical and commodity diversification of exports, which also affects the indicator of Russia's share in trade in value added categories.

We propose a three-stage protectionist strategy to eliminate the vulnerabilities identified in the framework of approbation of our methodology and to strengthen the resilience of Russia's economy. Its essence lies in a gradual transition from the intensifying policy of “reciprocal protectionism” to “enlightened semi-isolationism” in the medium term and “systemic (reasonable) protectionism” in the long term. The most important task of the first

stage is to continue forming the basis of economic sovereignty as a set of measures to support the most vulnerable and affected industries as a result of sanctions pressure on the principles of “mirror” protection of Russian enterprises. According to the 2022 results, the key points for Russia are to accelerate a new industrial policy, including import substitution, accelerate the investment turnaround to find new sources of financing for the economy, and quickly establish new geo-economic bridgeheads to diversify the country's foreign economic activity. The second stage implies the launch of structural reorganization of the economic system with reliance on the strategy of enlightened semi-isolationism. Its essence for the Russian Federation consists in increasing the competitiveness of the economy through the maximum possible use of external factors concerning innovative growth with simultaneous protection of domestic breakthrough industries, which are the basis for accelerating economic modernization. The third stage of increasing the economic resilience level consists in the transition to the policy of system protectionism, the task of which is to ensure the integration of the national economy into the sixth innovation wave and the new Kondratiev cycle through further development of the basic foundations of the key components of economic sovereignty.

### Polemics

The results obtained by us correlate with the calculations carried out using the previously discussed methods of assessing Russia's economic resilience. For example, the approbation of the methodology proposed by V.K. Senchagov showed that economic security in the Russian economic system is not provided sufficiently (at the level of 50–60% out of 100 possible). This means “the possibility of its functioning, but the lack of development opportunities” (Krotov, Muntinyan, 2016, p. 103). The works of E.V. Balatsky prove that the Russian economy is at parity with the American

<sup>23</sup> Edovina T. (2023). Non-commodity exports fell by almost a quarter. *Kommersant*, February 15, 28. P. 2.

economy only in two of the five areas under consideration (military and territorial potential) in terms of competitiveness of global strategic advantages. Nevertheless, the possibility of reaching the level of the world economy leaders is noted, provided that “in the next 30 years it is necessary... to develop finely calibrated three strategies – demographic, economic and technological” (Balatsky, 2024, p. 55). The works of A.B. Gusev and M.A. Yurevich present a more particular case – pharmaceutical sovereignty of the Russian Federation (as a component of technological sovereignty). The authors recognize the formation of the initial foundations of pharmaceutical self-sufficiency of the country, insisting on the need to introduce “...systemic long-term measures to restore the industry up to full independence...” (Gusev, Yurevich, 2023, p. 28).

Despite some differences in the final assessment of the level of achievement of Russia's economic sovereignty, practically all experts speak about the need to further strengthen it, but differ regarding the possible options of strategies to increase the economic system resilience. Most Russian scientists define the most important goal of increasing the economic resilience as the achievement of “self-sufficiency... with its own competitive (high-tech) industrial goods” (Pak, Andronova, 2023, p. 77). To achieve this, as RAS Academician V.M. Polterovich has repeatedly emphasized, it is necessary to activate the tools for overcoming new challenges and imbalances. One of the key steps in this direction should be the formation of “value-added networks that include Russian companies as major players, which requires simultaneous technological upgrading of production processes at enterprises belonging to different industries” (Polterovich, 2023, p. 8). RAS Academician A.G. Aganbegyan calls the most important mechanism for increasing Russia's resistance to global challenges as “the transition to the forced growth of investment in fixed and human capital... which should be

used mainly for a technological breakthrough and effective restructuring of the economy” (Aganbegyan, 2023, p. 27). From the point of view of specialists of the Institute of Economics of the Ural Branch of RAS, the formation of economic resilience requires the search for a new model of industrial policy, the essence of which “consists not just in responding to global challenges, but in actualizing the search and finding new opportunities for industrial development” (Romanova et al., 2021, p. 628). Russian scientists rightly note that the process of increasing the economic resilience since the early 2020s has become “a global trend associated with the securitization of industrial strategies and the course towards technological self-sufficiency/sovereignty of developed and developing countries...” (Smorodinskaya, Katukov, 2024, p. 108).

Foreign experts, paying attention to the importance of the industrial sector development for increasing economic resilience, note the crucial role of the state industrial policy in this issue. For instance, G. Gereffi argues that to reduce the economy's vulnerability, the focus of government support should be shifted to providing Russian industry with critical resources and technologies, building chains of such goods between friendly countries (“emphasizing critical technologies and geographic shortages can help both governments... overcome supply-chain vulnerabilities” (Gereffi, 2023, p. 3). The key role in terms of achieving economic sovereignty is assigned to the development of domestic value chains (“creating domestic production capacity...”) while coordinating and expanding GVCs with friendly partner countries (“coordinating with partners and allies to ensure more resilient global supply chains”) (Reynolds, 2024, p. 5). To achieve these goals, countries need structural modernization, which provides “hypothetical economic sovereignty ... by reindustrializing industry, making it less dependent on external supplies” (Sapir, 2022, p. 7).

### Conclusion

Economic sovereignty in our interpretation is achieved by combining the mobilization of domestic resources and the synergy of their potential with the benefits of the international division of labor. The results of this will serve to increase the welfare of the population and can be further offered to third countries. We consider the achievement of economic sovereignty as a key outcome of the policy of increasing the resilience of the country's economy. At the beginning of 2022, all three components of Russia's economic sovereignty that we have identified were at the "initial resilience" level. At the end of 2022, compared to the period of 2019–2021, there was a strengthening of sovereignty in the context of all components. Let us emphasize the main thing.

The industrial and technological component of economic sovereignty was on the verge of transition to the level of "incomplete resilience" by the beginning of 2022. One of the main positive points was the readiness of the industrial sector to withstand tough sanctions pressure. This was expressed primarily in the outstripping dynamics of growth in the total production of innovative products in 2015–2021 (for example, the production of medicines and materials used for medical purposes increased 2.48 times, vehicles and equipment – 1.65 times, computers, electronic and optical products – 1.40 times) compared to the indicator for the manufacturing industry as a whole (1.27 times growth<sup>24</sup>), improved energy efficiency of production in a number of industries (specific energy consumption for the production of 1 ton of crude oil decreased from 147.2 to 140 kilowatt-hours, production of 1 ton of finished rolled products – from 137.2 to 127.0<sup>25</sup>) and increasing the share of high-tech exports/imports in the total export/import turnover of the country<sup>26</sup>. According

to the results of 2022, a new positive moment is the increase in the share of funds of the business sector for the R&D development in the total domestic expenditures on research and development in the Russian Federation, while maintaining the positive dynamics of the share of R&D in the federal budget expenditures and the growth of the total production of innovative products outpacing the manufacturing industry as a whole. At the same time, the government should prioritize the issues of reducing the number of researchers and, consequently, the number of patents for inventions filed by Russian applicants, the need to increase the share of innovative goods, works and services in their total volume and reduce the specific energy consumption for the production of certain types of basic products.

With regard to the structural component of economic sovereignty, the real risk of economic slowdown at the end of 2021 was the risk of a heavier tax burden (the weighted average tax burden, including income from foreign economic activity, increased from 18.8% of Russia's GDP on average in 2011–2015 to 21.8% in 2016–2021<sup>27</sup>) and "non-involvement" of the banking system in the saturation of the real sector with finance (the share of bank loans in fixed capital investment over the period under review ranged from a minimum of 8.1% in 2015 to a maximum of 11.2% in 2017–2018<sup>28</sup>); this slowed down to 8.7% in 2023<sup>29</sup>), which hindered the development of domestic investment activity. Nevertheless, the growing investment share in machinery and equipment, manufacturing industry in Russia's GDP and the increase in consolidated budget expenditures on economic development, which is outlined in

<sup>24</sup> PCE 2022, p. 372; PCE 2019, p. 381.

<sup>25</sup> PCE 2022, p. 381; PCE 2019, p. 390; PCE 2017, p. 340.

<sup>26</sup> PCE 2022, p. 584, 592; PCE 2019, p. 591, 599; PCE 2017, p. 566, 574.

<sup>27</sup> Data from the Federal Treasury reports on the execution of the consolidated budget for the respective years. Available at: <https://roskazna.gov.ru/ispolnenie-byudzhetrov/konsolidirovannyj-byudzhet/190/> (accessed: May 29, 2024).

<sup>28</sup> Dolzhenkov A. (2024). The Central Bank is not the problem. We need an updated economic strategy. *Monokl'*, 8. P. 40.

<sup>29</sup> Dolzhenkov A. (2024). Bancocracy. *Monokl'*, 20. P. 45.

2019–2021, indirectly confirmed the readiness of business and the state to support structural modernization. However, its full-fledged launch required intensification of state support and fine-tuning of the relevant instruments. The investment turnaround in the Russian Federation, which began in 2022, as evidenced by the growth of both consolidated budget expenditures on the economy and the private sector in the renovation of fixed assets, should become the basis for the country's structural modernization. To accelerate it, it is critical to reverse the negative trend of lagging behind the growth of labor productivity in the Russian Federation in relation to the growth of labor remuneration and the value of fixed assets, to maximize the use of the regions' opportunities for structural transformation and to increase the volume of gross savings in GDP, including through additional attraction of foreign investment from friendly countries.

The transition from initial to incomplete resilience at the level of the geo-economic component of economic sovereignty at the end of 2021 lacked a small impetus. A possible way to accelerate the process could be the lengthening of domestic value chains through the accelerated development of high-value-added industries with their further integration into the global ones and, as a result, increasing the level of Russia's participation in world trade not only in terms of "gross" but also in the categories of value added. At the same time, the main danger for geo-economic sustainability, in our opinion, was over-dependence on specific goods (the share of the top-3 commodity groups in Russia's exports increased in 2015–2021 from 83.1% to 84.1%, imports – from 78.0% to 79.9%<sup>30</sup>), foreign trade partners (the share of the three largest countries buying Russian products increased from 27.6% to 28.5% over the period under

review, supplying their products to the Russian Federation – from 36.6% to 39.8%<sup>31</sup>), federal budget revenues from foreign economic activity. In 2022, despite the sanctions pressure, the Russian economy successfully managed to grow the self-sufficiency level in the most important raw materials and increase the use of both the total number of advanced production technologies and the share of Russia ones in their structure. At the same time, the key danger to the country's geo-economic sovereignty, in our opinion, was the insufficient diversification of export-import turnover, the low share of machinery and equipment necessary to support industrial-technological transformation in Russia's commodity imports and the gradual decline in the human capital level.

The first results of 2023 emphasized the outlined consolidation of Russia's economic sovereignty at the level of "incomplete resilience" in the context of virtually each of the considered components. The strengthening of the industrial and technological framework was confirmed by the 7.5% growth of manufacturing industry, accelerated structural adjustment – 10.5% growth in investment (Astrov, 2024, p. 9), increased geo-economic stability – reduction of imports to 19% of GDP. With the strengthening of the economic system's resistance, a 3.6% growth in GDP was achieved (with 90% of the growth provided by non-resource industries<sup>32</sup>), which allowed the Russian economy to take first place in Europe in terms of purchasing power parity<sup>33</sup>.

The key factor in increasing the Russian economic resilience in modern conditions is the "forced industrial development of the country"<sup>34</sup>,

<sup>31</sup> PCE 2022, p. 587; PCE 2019, p. 594; PCE 2017, p. 567.

<sup>32</sup> Putin V. (2024). Russia: Front line of work. *Rossiiskaya gazeta*, March 1, 48. P. 3.

<sup>33</sup> Putin said that Russia's economy has become the first in Europe. RBK, January 11, 2024. Available at: <https://www.google.com/amp/s/amp.rbc.ru/rbcnews/economics/11/01/2024/659f84c89a7947f8ac8631ad> (accessed: May 29, 2024).

<sup>34</sup> Putin V. (2024). Russia: Front line of work. *Rossiiskaya gazeta*, March 1, 48. P. 3.

<sup>30</sup> PCE 2022, p. 590; PCE 2019, p. 596–597; PCE 2017, p. 569.

which implies the modernization of Russian industry to a level that ensures the concentration of the full cycle of creation from development to production of end-to-end and critical technologies within the country and the formation of a new knowledge economy. By 2024, the country has a unique set of factors favorable to the realization of an industrial breakthrough: the unsatisfied demand of the population and the economy, estimated by experts at 50 trillion rubles, a decrease in annual capital outflow, which amounted to 5–7% of GDP, combined with the potential for repatriation of capital (in the amount of about 50 billion U.S. dollars per year)<sup>35</sup> and the activation of state industrial policy, which launched “a strong growth cycle based on the accumulation of primarily industrial capital”<sup>36</sup>. From the point of view of the formation of a new knowledge economy, the achievement of the country’s economic sovereignty will predetermine the development of its main driver – human capital, the main structural factors concerning accumulation and multiplication of which are scientific activity, education and health care. In this case, we should pay attention to the deterioration in the human capital quality (the decline of Russia’s performance in the global ranking of human capital indices from 0.729 in 2018 to 0.681 in 2020 and human development from 0.845 in 2019 to 0.822 in 2021), which we attribute to the end of the first sanctions wave against Russia, which has been accelerating since 2014<sup>37</sup>. To reverse the negative trends and consolidate full resilience in all three components of Russia’s economic sovereignty, it is necessary to make a decisive transition to systemic protectionism, designed to increase the innovativeness of the Russian economy, to support the structural transformation of the industrial complex by lengthening value chains, to reduce import dependence on the entire range of high-tech goods and services, which at the beginning of the period under review (2015) amounted to 90% compared to 15% in the late Soviet period<sup>38</sup>, and to reduce the foreign economic dependence on imported goods and services.

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<sup>35</sup> Uzyakov M. (2023). The miracle of economic growth. *Ekspert*, 38. P. 18.

<sup>36</sup> Gurova T. (2024). How to wage economic warfare. *Monokl’*, 17–18. Pp. 11–17.

<sup>37</sup> Human development index. Russia. Available at: <https://hdr.undp.org/data-center/specific-country-data#/countries/RUS#> (accessed: May 29, 2024); World Bank Group, 2021. Pp. 5, 18, 40; Human capital index. World Bank data. Available at: <https://databank.worldbank.org/source/human-capital-index#> (accessed: May 29, 2024).

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## Input-Output Modeling of Economic Development in the Region



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**Abstract.** In the interests of strategic planning it is necessary to design and develop scientifically substantiated forecasting and analytical tools, including those used to carry out variant calculations of the consequences of management decisions and regional economic policy measures; this determines the relevance of our study, as well as its applied significance. The aim of the research is to model the trajectories of the region's economic development (in the case of the Vologda Region) for the medium term with the help of input-output tables. Tasks: to substantiate the choice of model tools for making forecasts, to develop an input-output model based on calculated regional input-output tables, to identify and substantiate forecast scenarios, as well as to forecast the trajectories of the region's economic development in the medium term as a demonstration of the capabilities of the model toolkit. The article presents the results of scenario forecasting in relation to the trajectories of the economy of the Vologda Region as a model region for the medium term under the influence of various structural policy instruments. We use our own recursive input-

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output model of the regional economy as a key forecasting tool, which makes up its scientific novelty. Within the framework of three forecast scenarios (inertial, adaptive and transformational), we determine the average annual rate of change in the main indicators of regional development (gross regional product, gross output, investments in fixed assets and net exports) in the medium term, as well as the industry (sectoral) parameters of the Vologda Region's economic structure as of the end of the forecast period. The results obtained in the course of the study are in line with macroeconomic forecasts for development of the national and regional economies in the short and medium term.

**Key words:** region, input-output modeling, scenario forecasting.

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### Introduction

In the current geopolitical and geo-economic conditions of economic management, the economy of Russia and its regions is increasingly in need of structural transformation. This is confirmed both by the results of surveys (Shirokova, Lukin, 2024) and by the adopted strategic documents (National Security Strategy of the Russian Federation, Economic Security Strategy of the Russian Federation for the period up to 2030, Spatial Development Strategy of the Russian Federation for the period up to 2025, as well as references to the need for structural reorganization in a number of sectoral strategies).

The need to set and achieve strategic goals of the state development, as well as the current economic environment, which has a high level of uncertainty and variability of development trajectories of the Russian economy and its subjects, creates the need to provide the strategic planning system and public administration bodies with scientifically sound methodological tools, including forecasting. The implementation of economic policy (which includes structural policy) requires forecast calculations of its effectiveness in different scenarios of events.

However, the main problem in this case becomes the harmonization of initial assumptions and

hypotheses in the presence of a significant number of forward and backward linkages both within the economy of the region and between the regions of the Russian Federation. In modern conditions, the implementation of economic policy is complicated by the presence of interdependencies between the processes and structural elements of the region as a system. In this case, the development of scenario forecasts of regional economic development trajectories on the basis of input-output modeling allows significantly increasing the validity of measures and tools of economic policy (Shirov et al., 2023).

The use of input-output model complexes makes it possible to assess the dynamics of socio-economic development of the region, including the impact on the production circuit and final utilization (Shirov, Yantovskii, 2011). Within the framework of structural analysis of the economy, it is the input-output balance that allows comprehensively considering the consequences of structural policy implementation, while having sufficient flexibility and taking into account a significant number of both intra-regional interactions and factors of external impact (Miller, Blair, 2009). The research notes that the input-output balance provides the

most accurate understanding of the interaction of economic entities, and the state gradually creates all the conditions for the maximum realization of the potential of input-output model complexes<sup>1</sup>.

In this regard, the purpose of the research is to model the trajectories of economic development of the region in the medium term using input-output tools. This is conditioned (in addition to the above) by the need for variant calculations to determine the potential trajectories of socio-economic development of the region in the interests of strategic planning, as well as to assess the effectiveness of economic policy measures. The objectives of the study are: justification of the choice of modeling tools for making forecasts, development of an input-output model based on the calculated regional input-output tables, definition and justification of forecast scenarios, as well as forecasting the trajectories of economic development of the region for the medium term. Our recursive intersectoral model of regional economy was used as a key forecasting tool, which constituted its scientific novelty.

#### Literature review

The development of regional input-output balances and model complexes based on them is a highly specialized area of research. For instance, Russian scientists have developed balances for the Republic of Bashkortostan (Nigmatullin et al., 2006), the Ivanovo Region, Moscow, the Republic of Buryatia (Dondokov et al., 2014), the Kaliningrad Region and a number of others. The specialists of the Institute of Economic Forecasting of RAS (IEF RAS) (Moscow) and the Institute of Economics and Industrial Engineering, Siberian Branch of RAS (Novosibirsk) have advanced most

deeply in this direction. Abroad, this topic is being studied more actively: regional and multiregional input-output tables and corresponding modeling tools are being developed in China (Jiang, 2011), the United States, South Korea (Flegg, Tohmo, 2019), the Netherlands and other countries.

In Russia, the problem is aggravated by the lack of the necessary array of statistical data: there is no significant array of information (up to 90%, according to the estimates of Rosstat experts) necessary for the construction of regional input-output tables (Masakova, 2019). In the conditions of incomplete statistical information, the construction of such tables is possible using various indirect methods: modeling based on available reference points, assumption of comparability of technological processes in the production of products, use of correlations and interdependencies of conjugate indicators, as well as regionalization of tables based on national tables of resources and use (Ershov, Temir-ool, 2022).

The use of input-output modeling in economic practice has a long history. The principles of input-output balances as a basis for models were developed by V.V. Leontiev in the first half of the 20th century. However, the models themselves began to be created and applied later, which is associated with a significant amount of input data and the need for many calculations, as well as the need to use sufficiently complete and high-quality statistical data.

Soviet science has made a notable contribution to the development of input-output modeling. In the second half of the 20th century, the USSR actively developed both individual models and entire national economic model complexes. It is worth noting the works published during this period (Kossov, 1964; Shatilov, 1974; Urinson, 1975; Yaremenko et al., 1975; Granberg, 1985; Baranov, 1989, etc.). A number of scientific teams and research institutes have been engaged in the issues of input-output modeling, and many of them continue research in this direction (*Tab. 1*).

<sup>1</sup> Delyagin M. Ensuring efficiency and competitiveness of the economy. *Zavtra*, August, 23, 2024. Available at: [https://zavtra.ru/blogs/obespechivaya\\_effektivnost\\_i\\_konkurentnost\\_ekonomiki\\_pravitel\\_stvo\\_mishustina\\_sozdaet\\_predposilki\\_dlya\\_planirovaniya\\_i\\_upravleniya\\_na\\_osnove\\_mezhotraslevogo\\_balansa](https://zavtra.ru/blogs/obespechivaya_effektivnost_i_konkurentnost_ekonomiki_pravitel_stvo_mishustina_sozdaet_predposilki_dlya_planirovaniya_i_upravleniya_na_osnove_mezhotraslevogo_balansa). (accessed: September 30, 2024).

Table 1. Examples of input-output models of the Russian economy

Authors	Model name	Content
Center for Macroeconomic Analysis and Short-Term Forecasting (CMASF)	Balance sheet-econometric model of forecasting of Russian economy	The model is a system of blocks that utilizes both basic economic balances and econometric interactions. The use of the model allows making forecasts for different timeframes taking into account technological changes.
E.B. Ershov and Yu.V. Yaremenko	Model of input-output interactions	The model is both a means of analyzing the economic structure and a tool for its forecasting, and the methodological basis is the assumption of qualitative heterogeneity of resources used in the economy. The central link and principal feature of the model is the modeling of the distribution flows of industries' products, which include supplies for intermediate consumption and flows forming functional elements of the final product.
Institute of World Economy and Informatisation (IWEI)	MOB modeling tools	In general, the model toolkit has many overlaps with the previous ones, the main difference being the presence of a monetary and financial block.
Institute of Economic Forecasting of RAS (IEF RAS)	Intersectoral model of the Russian economy RIM	The model complex consisting of three large blocks: the balance of production and distribution of products, the matrix of prices and incomes of economic agents, as well as the block of calculated indicators. The nomenclature of the model is represented by 25 types of economic activities, of which 15 are industries. The elements of final use are consumption of households, government and non-profit organizations, gross accumulation, including fixed capital, changes in inventories, as well as exports. Imports of products and services are also included in the composition of the economy's resources.
	Interregional forecasting and analytical model NORM	The NORM model describes economic dynamics in the medium and long term for all constituent entities of the Russian Federation, taking into account interregional and intersectoral links.
	Conto cross-industry model	The functional purpose of this model in the system of forecast-analytical calculations is to harmonize macroeconomic and sectoral indicators over the entire forecast period. It is based on the step-by-step calculation of key tables of inter-industry balance (MOB) in constant and current prices. The most important exogenous variables of the Conto model are economic policy parameters and characteristics of the world economy development.
Institute of Economics and Industrial Engineering, Siberian Branch of RAS	Optimization interregional interindustry models	A number of models have been developed: static and dynamic regional model, static interregional model, optimization regional and interregional models.
According to: (Suslov, Suspitsyn, 2005; Suspitsyn, 2009; Kuranov et al., 2021; et al.).		

Table 2. Examples of variant calculations of economic development using input-output models

Author	Direction of variant calculations
A.A. Shirov et al.	Study of economic effects for Russia, Belarus, Kazakhstan and Ukraine in the creation of the Common Economic Space
A. Baranov et al.	Assessment of the consequences of the Bank of Russia's inflation targeting policy
Yu.Yu. Ponomarev, D.Yu. Evdokimov	Analysis of the spread of COVID-19 pandemic effects by industry sector
IEF RAS, Center for Tax Policy	Analysis of the key and most effective areas of low-carbon transformation of Moscow economy
E.E. Cox, L. Carrera, O. Jonkeren, J.S. Aerts, T.G. Khusbi, M. Tissen, G. Standardi, Ya. Misiak	Analysis of the economic impacts of two flood scenarios in the Po River basin in Italy using three regional catastrophe impact models: two hybrid MOBs and a Computable General Equilibrium (CGE) model
Tadayuki Hara, Hidekazu Iwamoto	Applying MROs to assess the economic impact of tourism
R. Bardazzi	Assessment of labor productivity at the industry level using methods based on inter-industry analysis
According to: (Shirov et al., 2015; Ponomarev, Evdokimov, 2020; Shirov et al., 2023; Bardazzi, 2011; Baranov et al., 2013; Cox et al., 2016; Hara, Iwamoto, 2022).	

One of the most frequently solved tasks with the help of inter-sectoral modeling is the option calculations from the implementation of certain management decisions. Scientific research in this direction considers various scenarios – from the study of the effects from the implementation of individual investment projects to the consequences of the formation of the Common Economic Space (*Tab. 2*).

The analysis has demonstrated the relevance and significance of the experience in the development and application of input-output modeling tools in the development of scenario forecasts of the trajectory of socio-economic development of the regional economy and justification of economic policy measures on their basis.

In most cases, in the reviewed studies, the change in final demand is used as an input variable, which allows calculating the change in outputs and input-output multiplier effects (direct, indirect, and induced). When calculating the effects of economic policy measures (changes in the parameters of final consumption, investment or foreign trade), it is necessary to consider the impact of these parameters separately, which requires the development of an additional block of the model that allows obtaining the aggregate change in final utilization due to changes in its components. When this block is implemented, it can be argued that the study will make it possible to supplement the existing scientific knowledge in terms of the development of tools for regional input-output modeling and is of practical importance to justify the management decisions taken.

### **Materials and methods**

Within the framework of the study, we have developed a recursive intersectoral model based on our own regional input-output tables to identify potential trajectories of the regional economy development and model the process of its structural reorganization. In addition to variant forecasts of the consequences of the implementation of

economic policy measures, the proposed toolkit allows building scenario meso-economic forecasts.

The information base of the model is our input-output balances of production and distribution of products of the region for 2011–2020, regionalized from the national tables of resources and use<sup>2</sup>. As indirect information for forecasting purposes, we used country and regional statistical information on production, income of economic agents, investment and fixed assets, foreign trade<sup>3</sup>, interregional import-export<sup>4</sup>, etc. The model presents the regional economy in the context of 32 aggregated types of economic activities, which are described on the basis of official data of Rosstat in terms of SNA (system of national accounts), production and costs.

The first stage of modeling is the formation of the matrix of input-output balance. For this purpose, we used both direct data of the national accounting system, provided by the regional statistical office, and indirect data, providing information of production and technological character and allowing filling in the missing statistical indicators. Initially, the matrix of technological coefficients is formed on the basis of data from country input-output tables. At the same time, the model has a possibility of exogenous setting of sectoral cost coefficients, which allows estimating changes in material and energy intensity of production in different scenarios. Regionalized technological coefficients are used for the input-output distribution of fringing totals, taking into account the specifics of the regional economy. Aggregation or disaggregation to the required industry nomenclature is performed using structural proportions of the volume of goods shipped or the average number of employees in the industries of

<sup>2</sup> Tables of resources and utilization of the Russian Federation for 2011-2020 (Rosstat data). Available at: <https://rosstat.gov.ru/statistics/accounts> (accessed: September 2, 2024)

<sup>3</sup> Data from statistical yearbooks of the Vologda Region for 2011–2020.

<sup>4</sup> Data of statistical bulletins on import-export of goods and products by organizations in the Vologda Region for 2011–2020.

the region. The structure of gross accumulation is distributed according to the type structure of fixed assets in the regional economy, which allows taking into account the peculiarities of the regional investment process. The structure of exports and imports is calculated by recalculating the data of the Federal Customs Service using the average annual dollar exchange rates provided by the Bank of Russia. The balancing item in the calculated input-output balance is the balance of interregional trade (Formula 1).

$$\begin{aligned} & \text{Inventories at the beginning of the year} + \\ & \text{Production} + \text{Import} + \text{Interregional imports} \\ & = \text{Intermediate use} + \text{Final consumption} + \\ & \text{Gross accumulation} + \text{Export} + \text{Interregional} \\ & \text{export} + \text{Inventories at the end of the year} \end{aligned} \quad (1)$$

The problem of calculating the counter flows of interregional trade arises. In official statistical sources the data on it are incomplete and have significant distortions, which forces to use calculation methods to determine the volume and direction of commodity flows between regions.

To solve this problem, we used the mathematical approach of T. Kronenberg (Kronenberg, 2009), which consists in calculating the heterogeneity of commodity flows ( $h$ ) according to the data of national input-output tables using Formula 2.

$$h = \frac{q_{in}}{x_{in} + z_{in} + d_{in}}, \quad (2)$$

where  $h$  – heterogeneity factor,

$q_{in}$  – volumes of counter flows of foreign trade in the  $i$ -th type of activity in the national economy,

$x_{in}$  – output of  $i$ -th type of activity within the country,

$z_{in}$  – intermediate consumption by  $i$ -type of activity within the country,

$d_{in}$  – final utilization by  $i$ -th type of activity within the country.

Based on Formula 2,

$$q_{ir} = h (x_{ir} + z_{ir} + d_{ir}), \quad (3)$$

where  $q_{ir}$  – volumes of counter flows of foreign trade in the region,

$x_{ir}$  – gross output of the region by  $i$ -type of activity,

$z_{ir}$  – intermediate consumption of the region for the  $i$ -th type of activity,

$d_{ir}$  – final utilization of the region by the  $i$ -th type of activity.

Further, we determine the interregional trade turnover of the region by  $i$ -th type of activity (Formula 4):

$$v_{ir} = |b_{ir}| + q_{ir}, \quad (4)$$

where  $v_{ir}$  – interregional trade turnover by  $i$ -type of activity in the region,

$b_{ir}$  – trade balance (net exports) for  $i$ -th type of activity in the region.

Further, based on the indicator of heterogeneity and balance, and volumes of the trade balance of the region, we calculated commodity flows (volumes of import and export) by  $i$ -th type of activity according to formulas 5 (export) and 6 (import).

$$e_{ir} = (v_{ir} - b_{ir})/2 \quad (5)$$

$$m_{ir} = (v_{ir} + b_{ir})/2 \quad (6)$$

The second stage of modeling the regional economy involves forecasting the dynamics and structure of end-use elements, which, according to the SNA, are the volumes of final consumption of households, government and nonprofit organizations, gross fixed capital formation calculated through investment, changes in material stocks, as well as foreign trade flows, both global and interregional.

The model relies on the basic equation of input-output balance, which in matrix form is as follows:

$$X = AX + Y, \quad (7)$$

where  $X$  – vector of total output;

$A$  – matrix of direct cost ratios;

$Y$  – end-use vector.

We used the following equation in the modeling:

$$(E - A)^{-1} * Y = X, \quad (8)$$

where  $E$  – unit matrix;  $(E - A)^{-1}$  – matrix of total cost ratios.

On the basis of the obtained matrix dependence, it is possible to calculate, what should be the volume of realization  $x$  in all branches of economy, if the change of final utilization  $y$  is planned, i.e. full costs are calculated.

We present the calculation algorithm.

1. Based on the data from the table of goods and services utilization, the direct cost matrix  $A$  is calculated. For this purpose, the share of direct costs  $F_{ij}$  in the volume of output  $X_j$  is determined:

$$a_{ij} = F_{ij} / X_j. \quad (9)$$

The element  $a_{ij}$  of matrix  $A$  shows the consumption of product  $i$  directly in the production of a unit of output of industry  $j$ .

2. Next, the full cost matrix  $B = (E - A)^{-1}$  is calculated. For this purpose, matrix  $A$  is subtracted from unit matrix  $E$ . The obtained matrix is raised to degree -1, i.e. inverse matrix  $(E - A)^{-1}$  is found. Element  $b_{ij}$  of matrix  $B$  characterizes the need for gross output of industry  $i$ , which is necessary to obtain a unit of the final product of industry  $j$  in the process of material production.

3. Full cost matrix  $B$  multiplied by the vector of planned end uses  $Y$  equals the gross output of all industries  $X$ :

$$x_i = f(y_1, y_2, y_3 \dots, y_n) = \sum_{j=1}^n b_{ij} y_j. \quad (10)$$

Execution of this algorithm allows obtaining vector  $X$  (gross output) for each industry. However, to forecast the dynamics of end-use elements, it will be necessary to calculate the values of vector  $Y$ , which includes such components as household consumption, investment, exports, etc.

The formula is used to calculate the rate of change of individual elements  $y_j$  of end-use vector  $Y$ :

$$y_j = fc_j * w_j^{fc} + ga_j * w_j^{ga} + ge_j * w_j^{ge}, \quad (11)$$

where  $fc_j$  – dynamics of final consumption;  
 $ga_j$  – dynamics of gross savings;  
 $ge_j$  – dynamics of net exports;  
 $w_j^{fc}, w_j^{ga}, w_j^{ge}$  – shares of respective elements in the end-use structure.

This decomposition is used because some elements of final use can be predicted more accurately using indirect statistics: for example, changes in population and income for final use, dynamics of investment in fixed capital for gross capital formation, demand for key commodities and price changes for net exports.

Within the framework of the current study, the shares in the structure of final use were averaged on the basis of retrospective dynamics (forecasting of structural proportions is considered as the development of the model complex and the direction of the study as a whole), while the dynamics of indicators by industry is an exogenous variable of the model and is calculated taking into account hindsight and expert estimates.

The result of modeling is the final estimates of gross output, gross regional product in constant prices, investment in fixed capital, calculated through gross fixed capital formation and net exports, taking into account interregional imports and exports. In the model, they are represented by the estimated quadrants of input-output balances over the entire forecasting horizon.

#### Characterization of the model region

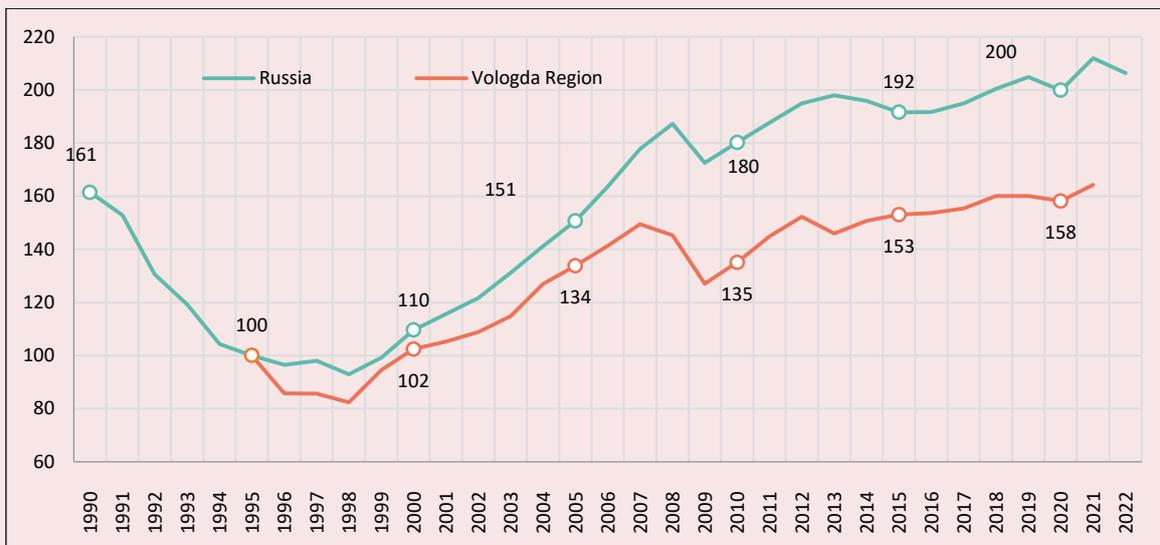
The study uses the Vologda Region as a model region. Due to the accumulated limitations of structural development at all stages of the reproduction process, the need to transform its economy has been repeatedly justified in earlier studies (see, for example, Rummyantsev, Leonidova, 2020).

The key problems constraining regional development and causing low rates of economic growth (Fig. 1) are the simplification of the economic structure and deterioration of its ability to generate added value.

In the post-Soviet period, the region occupied a narrow market specialization in the international

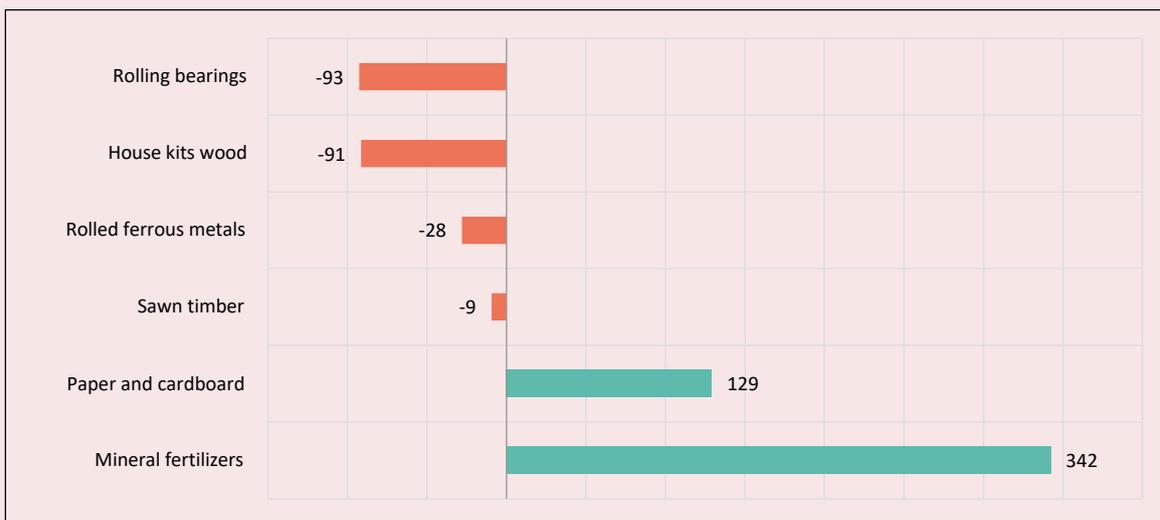
and national division of labor in the production of primary products (rolled metal products, mineral fertilizers, timber), while at the same time inter-sectoral ties weakened to a large extent, positions in machine building (including machine tools), light industry, woodworking were lost (Fig. 2).

Figure 1. Growth rates of average per capita GDP of Russia and GRP of the Vologda Region in 1990–2022, to the level of 1995



Source: calculated on the basis of Rosstat data using GRP physical volume indices.

Figure 2. Increase (decrease) in the physical volume of production of certain types of products in the Vologda Region in 1985–2022, % to 1985

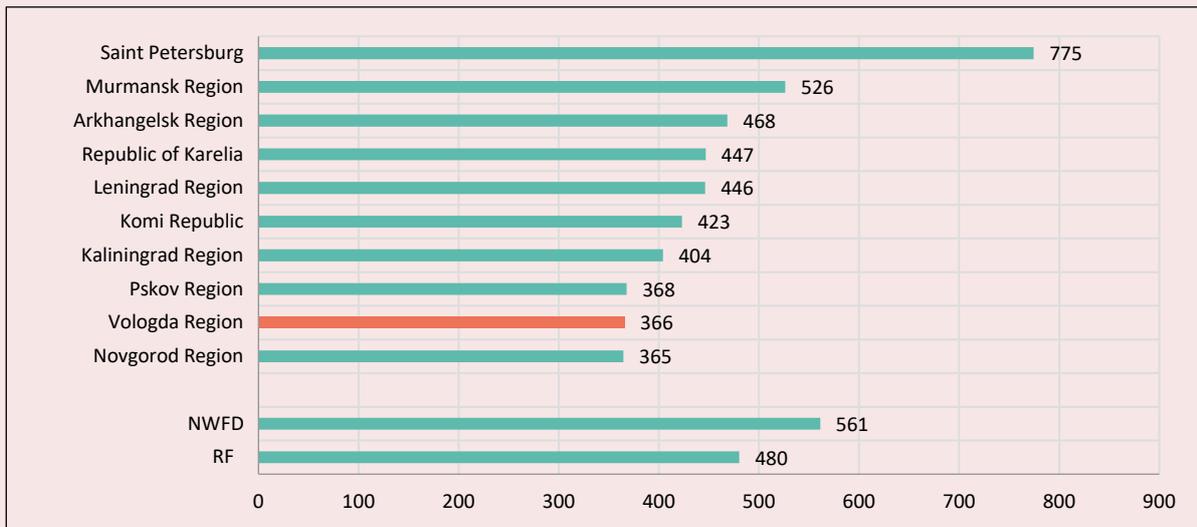


Source: calculated on the basis of Rosstat.

As a consequence of this situation, problems in the reproduction circuit of the economy have been growing: disproportions at the stage of production (reduction of the role of material production, knowledge-intensive sector of the economy, deterioration of the geographical, sectoral and professional structure of employment),

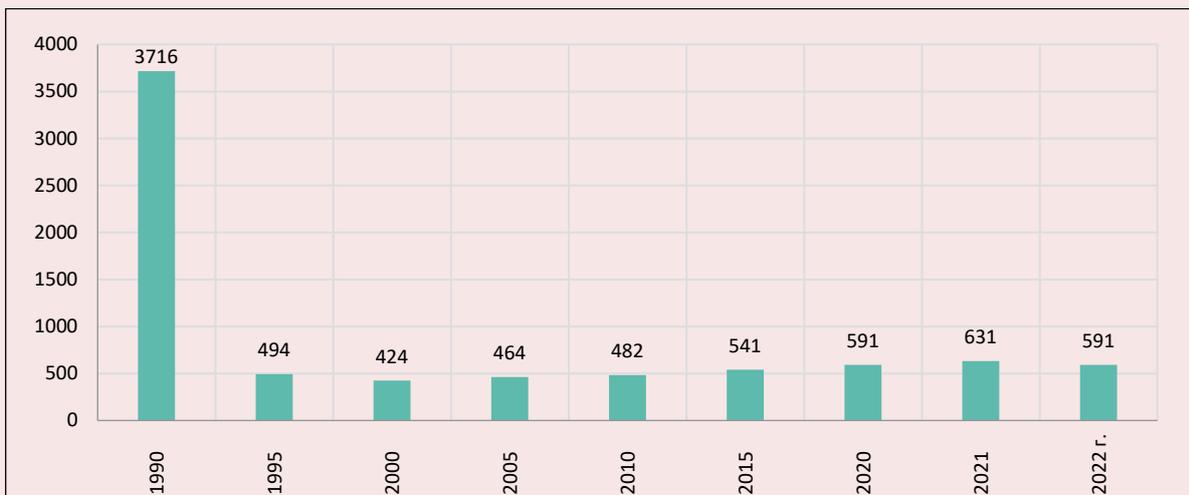
formation and distribution of added value (concentration of the economy’s income in a limited number of industries, stagnation of employees’ remuneration level of), use of income (lagging behind the savings rate, slowing dynamics and low volume of intra-regional consumer demand (Fig. 3), etc.).

Figure 3. Actual final consumption of households per capita in NWFD regions in 2021, thousand rubles



Source: based on Rosstat data.

Figure 4. Number of personnel engaged in research and development in the Vologda Region in 1990–2022, persons



Source: based on Rosstat data.

The region's specialization in export-oriented production of primary products has led to gradual deindustrialization, "washing out" of the economic structure of machine-building and industry producing final consumption products, compression of domestic demand for research and development: in 1990–2022 the number of personnel engaged in R&D decreased by more than 6 times (*Fig. 4*). The consequences of this were the growth of technological import dependence, increasing economic inequality and the compression of the populated area of the region with the concentration of population in the largest agglomerations (Vologda and Cherepovets).

It seems that in such conditions the structural policy of the Vologda Region should be aimed at multidimensional complication of the regional economy, its repositioning in interregional value-added chains, echeloned development of promising market niches on the basis of reasonable variant calculations of possible development trajectories and attraction of federal funding for these purposes.

The implementation of such a policy within the framework of the strategy of socio-economic development of the Vologda Region will contribute to the stimulation of manufacturing of products for investment purposes and final consumption, will create demand for R&D and import-substituting technologies. As the effects of its implementation, it is also predicted to increase the income of enterprises included in the value-added chain and, as a consequence, of other economic agents, to accelerate the dynamics of the region's development, to create new jobs and to reduce the differentiation between municipalities.

Based on the analysis of structural imbalances in the Vologda Region, as well as studies of available statistical information, we came to the conclusion that the Vologda Region can become a "testing ground" for approbation of our model toolkit and demonstration of its capabilities.

### Scenario assumptions

We carried out three scenarios – inertial, adaptation and transformation – when carrying out variant forecasting of regional economic development on the basis of our input-output model. As mentioned earlier, the scenarios set the dynamics of end-use indicators in the sectoral context, taking into account the retrospective dynamics, which were then adjusted taking into account the scenario assumptions, macroeconomic forecasts of analytical centers (the Ministry of Economic Development of the Russian Federation, the Bank of Russia, the Institute of Economic Forecasting of RAS, the Center for Macrostructural Analysis and Short-Term Forecasting, etc.), expert assessments and relevant sectoral studies.

#### 1. Inertial scenario.

The inertial scenario was used as a baseline scenario (as a control scenario). Its main premise was the retrospective dynamics of the region's economy, which is not affected by geopolitical and geo-economic instability. The scenario assumes the preservation of the previous development rates, but in fact it can no longer be realized.

The inertial scenario envisages the following structural changes:

- increase in the share of construction in the industry structure due to the active growth of preferential mortgage lending;
- slowdown in the growth rates of metallurgical production due to saturation of export markets and weak focus on domestic demand;
- fluctuations in the shares within manufacturing industries associated with the inertial development trajectory and the transition of a number of investment projects to the operational stage (food industry, sawing and planning of wood, production of rolled products and other industries of primary resource processing).

#### 2. Adaptation scenario.

The second scenario assesses the impact of foreign trade restrictions and restrained economic

policy to stimulate domestic demand and support import substitution.

The main assumptions of this scenario are:

- export-oriented sectors of the Vologda Region economy (timber industry, ferrous metallurgy; production and supply of fertilizers were not affected by the sanctions) significantly reduced production volumes due to bans from key consumers
- EU countries (in the first years after the shock up to 30%, later the dynamics becomes more positive – from 5–10% decrease to 3–4% increase per year depending on the sector);
- reduction in imports of investment goods and, as a consequence, slowdown in investment activity (-10–15% from 2022, including due to the termination of access to foreign capital markets);
- decrease in physical volumes of imports of end-use goods with simultaneous increase in their price due to the complexity of supplies (up to 20% of the 2022 volumes);
- fragmented growth of industries producing import-substituting products (machine building, final consumption goods, high-tech intermediate consumption products), change in the direction of logistics flows and their volumes;
- slowdown in the investment activity of enterprises against the background of tight monetary policy of the Central Bank of the Russian Federation, deterioration of financial results, increase in the general level of uncertainty in the economy and restricted access to imports of means of production.

The most active direction of economic policy implementation in unstable macroeconomic conditions was to maintain the level of domestic demand. The main measures to support consumption were:

- tourist cashback (tourism is the most multiplicative end-use industry);
- stimulation of preferential mortgages (one of the most important drivers for construction), support for which has been reduced, and there is currently a slowdown in housing commissioning;

- social transfers in cash and in kind and a number of others.

A significant contribution to the increase in final consumption was also made by payments to participants in the special military operation, whose incomes are much higher than the level of average annual wages.

These support measures had a temporary effect on stimulating final demand – at the beginning of the forecast period the growth rates of the stimulated industries ranged from 3 to 12%, later they stagnated to zero growth rates.

The adaptation scenario assumes a shift in structural proportions toward domestic demand: an increase in the share of market services, in particular wholesale and retail trade, a decrease in the influence of export-oriented sectors of the economy on its dynamics (with the exception of fertilizer production due to the growing food crisis in the world), as well as an increase in the share of construction.

### 3. The “active transformation” scenario.

The main prerequisite for the third scenario is the state’s active structural policy, which should ensure the rates of economic growth necessary to address key socio-economic tasks in the new economic environment. Such tasks include improving the quality of economic growth and the quality of life, increasing the complexity of the economy and expanded reproduction of capital, as well as observing the interests of national security.

Under this scenario, it is assumed that the process of structural adjustment of the economy will be based on joint actions of the state, business and population, with the role of the state at the first stage should be strengthened (in terms of investment incentives), which in the future should be balanced by the growth of business activity and consumer demand. An important aspect is technological development; in the absence of an inflow of technologies, their borrowing and reverse engineering are required, as well as the activation of

technological import substitution. In the future, this strategy can be transformed into an expansive one due to the realization of competitive advantages.

The main direction of structural policy under this scenario will be the development of promising economic specializations of the territory in the interests of lengthening value chains and increasing the complexity of the economic structure. A necessary condition dictated by both the current geopolitical situation and the logic of business processes is the reorientation of foreign trade activities to domestic markets and partners from friendly countries.

In addition, an active structural policy includes tools to stimulate consumer demand and investment support for industries with promising specialization of the region's economy. The role of the state is to create conditions for their development by both direct methods (state participation in investment projects, infrastructure investments, budget loans and subsidies) and non-economic methods (various benefits, preferential tax regimes, etc.).

We believe that the consequences of the structural policy implementation in the region will be the following trends of the Vologda Region economy development:

– slowdown in the growth rates of export-oriented industries due to the transition to the domestic market under foreign trade restrictions (up to 1.5% per year);

– acceleration of investment activity in industries with promising specialization (deep wood processing, machine building, high value-added chemistry) up to two or threefold growth depending on the volume of state support and increase in their investment attractiveness;

– support for end-use industries will allow accelerating their growth rates to 3–4% annually.

The list of assumptions for forecasting in this scenario is not final, there are some hidden consequences of structural policy. The transformation scenario assumes an increase in the share of machine building, timber industry in terms of deepening wood processing, and a reduction in the share of metallurgy with simultaneous reorientation of its commodity flows from external to domestic markets.

#### Calculation results

*Table 3* presents the results of forecast calculations within the proposed scenarios. It is worth noting that in the inertial scenario the growth of investment activity remains due to the high results

Table 3. Average annual growth rates of key economic indicators of the Vologda Region in 2023–2031, % to the previous year

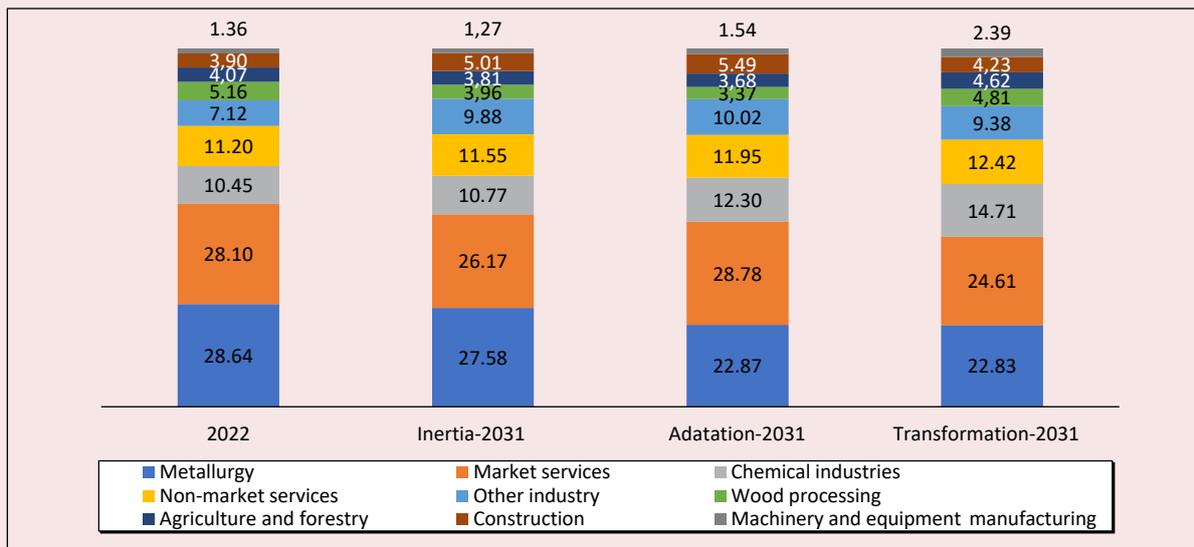
Indicator	Scenario	2023–2025	2026–2028	2029–2031
Release	Inertia	101.8	102.2	102.4
	Adaptation	102.3	102.8	103.1
	Transformation	103.1	104.2	104.6
GRP	Inertia	99.6	101.0	102.1
	Adaptation	98.0	102.2	102.2
	Transformation	100.3	103.5	103.6
Investments in fixed assets	Inertia	103.0	103.1	104.0
	Adaptation	103.8	105.2	105.4
	Transformation	105.0	108.0	107.4
Exports	Inertia	99.0	104.5	109.2
	Adaptation	93.0	107.7	112.3
	Transformation	97.6	99.7	102.6
Import	Inertia	119.9	110.3	106.5
	Adaptation	97.7	102.9	103.7
	Transformation	100.0	99.1	96.3

Source: own compilation.

of the previous years, however, such growth rates of production and capital investment are characteristic of the traditional industries of the Vologda Region (ferrous metallurgy, fertilizer production, timber industry complex). The key structural problem is the degradation of machine-building industries, which leads to increased import dependence in terms of means of production, which in the long term will slow down investment activity, reduce the profitability of production and, consequently, its competitiveness. Export growth rates will accelerate over time, but the creation of trade balance imbalances is inevitable.

The main trend in the adaptation scenario is the sanctions pressure: foreign trade restrictions will significantly slow down the dynamics of export-oriented industries of the region and its economy as a whole. Countermeasures in this case will be the activation of domestic demand for both intermediate and final products, reorientation of exports to friendly markets, as well as the development of interregional markets. This will accelerate economic growth and increase investment activity, but in the long run, which is not covered by this study, we assume that the dynamics will slow down again, up to negative values.

Figure 5. Forecast variants of the Vologda Region economic structure in 2031, % of the total



Note: The sectors presented in the figure include the following types of economic activities:

1. Metallurgy – metallurgical production and production of finished metal products;
2. Market Services – wholesale and retail trade, hotels and restaurants, transportation and communications, finance and insurance activities, real estate operations, rentals and services;
3. Chemical industries – chemical production, production of rubber and plastic products;
4. Non-market services – public administration, education, health and social services, provision of other services;
5. Other industry – mining, food production (including beverage production), textile and clothing production, leather, leather goods and footwear production; production of other non-metallic mineral products; other production; production, transmission and distribution of electricity, gas, steam and hot water; water collection, treatment and distribution;
6. Timber manufacturing – wood processing and manufacture of wood products, pulp and paper production, publishing and printing activities;
7. Agriculture and Forestry – agriculture, forestry, hunting, fishing and fish farming;
8. Building;
9. Mechanical engineering: manufacture of machinery and equipment, manufacture of electrical, electronic and optical equipment, manufacture of vehicles and equipment.

Source: own compilation on the basis of GVA calculations using modeling tools.

Under the transformation scenario, it is expected that the economic growth driver will be high-tech sectors of the economy (machine building, medium- and low-tonnage chemistry, production using additive technologies, industries of human capital formation), which will contribute to the acceleration of growth rates and recovery from the crisis in the medium term and, in our opinion, the most important thing – the “complication” of the economic structure. At the same time, traditional sectors of the economy will not lose their importance, but will become reference points – basic sectors – for the development of promising economic activities. This will result in a reorientation from export activities to domestic markets and deeper processing of products produced in the region, as well as strengthening technological sovereignty and increasing the level of economic security of both the region and the country as a whole.

*Figure 5* shows the forecasted structure of the Vologda Region economy according to the calculations. We should say that the structural changes are rather slow and we should not expect a radical change in the structure in the forecast period. The main changes in the inertial scenario are the growth of the share of construction stimulated by preferential mortgages and local production of construction materials, the reduction of the share of metallurgy due to the saturation of export markets and insignificant changes in the structure of manufacturing industries that do not lead to the complexity of the economy and deepening of product processing.

The adaptation scenario assumes a shift in structural proportions toward domestic demand: an increase in the share of market services, in particular wholesale and retail trade, a decrease in the influence of export-oriented sectors of the economy on its dynamics (with the exception of fertilizer production due to the growing food crisis

in the world), as well as an increase in the share of construction. The transformation scenario assumes an increase in the share of machine-building, timber industry in terms of deepening wood processing, and a reduction in the share of metallurgy with simultaneous reorientation of its commodity flows from external to domestic markets.

The structural policy inherent in the transformation scenario will make it possible to overcome the existing limitations of the region’s economic development and create prerequisites for sustainable growth in the long term. In general, to realize the transformation scenario as a target scenario, it is necessary to conduct active structural policy in at least three key areas: stimulation of domestic demand, strengthening of structural investment policy, repositioning of the region in existing and prospective value chains.

### **Conclusion**

The research has developed and tested the model toolkit based on our regionalized input-output balances on the materials of the Vologda Region. The use of the proposed model complex allows carrying out variant calculations of the trajectories of economic development of regions depending on the implemented measures of economic policy, stimulation of various types of economic activity, and is also a flexible basis for the construction of additional blocks of the model that allow to estimate budgetary effects, the need for labor resources and a number of other economic parameters.

As a result of approbation on the materials of the Vologda Region, we determined that the improvement of the quality of the economy with its stable growth is possible during the implementation of structural policy aimed at maintaining domestic final demand, increasing investment activity and development of industries of promising economic specialization within the existing value added chains. The results obtained in the course of the

study are consistent with macroeconomic forecasts of national and regional economic development in the short and medium term.

Further research will be carried out in such directions as expansion of the model's industry nomenclature, formation of additional blocks to increase the number of estimated effects, development of tools for endogenous calculation of end-use industry components for more automated

and objective forecasting, as well as expansion of the list of regions through regionalization of input-output tables.

The research results can be used by public authorities in the development of strategic planning documents, by a wide range of researchers in the field of regional and sectoral economics, as well as by teachers and students in the framework of training in economic specialties.

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## Financial Results of the Implementation of Preferential Regimes in Municipalities of the Russian Far East



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**Abstract.** The aim of the work is comparative analysis of the problems and methodological approaches to assessing financial effectiveness of measures implemented in the Far East in the context of regional preferential policy in outstripping development territories (ODTs) and in the Free Port of Vladivostok (FPV). We analyze the experience of organizing preferential regimes in ODTs and FPV, substantiate the reasons for difficulties in assessing the implementation of financial measures of preferential regimes related to the political specifics of the implementation of the latter; difficulties in clustering the objects of analysis due to a considerable differentiation of Far Eastern municipalities; difficulties related to the assessment horizon; as well as current problems concerning the substantiation of indicators to comprehensively assess the results of stimulating municipal development. We show how local budgets are affected financially by the extension of local preferential regimes to the entire territory of the Far East and the prerequisites for the emergence of a “tax trap” as a result. Using the example of the Khabarovsk Territory, we assess shortfall in local budget revenues caused by a significant increase in tax benefits. We reveal the consequences of a situation when the volume of tax benefits provided is not limited by the volume of investments in projects. We consider measures to dampen the consequences of the “tax trap” for regional budgets in the case of expanding the zone of local preferential regimes to the entire Far East. We propose to allocate tax benefits to a resident in the form of a money grant, provided that the resident fulfills its obligations to increase employment and develop the real sector of the region’s economy, and the total amount of benefits is limited by the amount of investments made by the resident.

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**Key words:** municipal development, state regulation, financial regulation measures, outstripping development territories, Free Port of Vladivostok, implementation of preferential regimes, Russian Far East.

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### Introduction

In the modern conditions it is important to understand how financial preferences introduced by the government and aimed at promoting entrepreneurial activity affect socio-economic development of specific municipalities. Russian regional policy uses almost all financial tools known in world practice to stimulate spatial development. But the Far Eastern outstripping development territories (ODTs) and the Free Port of Vladivostok (FPV) regime have recently become the most famous and widely used. To manage their functioning, JSC “Far East and Arctic Development Corporation” (FEADC)<sup>1</sup> was established, the sole shareholder of which, on behalf of the Russian Federation, is the RF Ministry for the Development of the Russian Far East and Arctic (Minvostokrazvitiya).

A significant body of publications is devoted to assessing the results of financial policy aimed at promoting regional development, demonstrating a wide range of opinions, from completely positive (Hirofumi, 2019; Sida, Kan, 2021; Chichkanov, Belyaevskaya-Plotnik, 2022) to severely critical (Gulidov, 2021; Leonov, 2020; Minakir, 2022; Savchenko, 2022). Such discrepancies in estimates

indicate a lack of generally accepted theory and methodological unity among researchers. The issue of assessing the financial impact of preferential treatment on municipal development is becoming more acute in connection with existing proposals put forward by scientists (Minakir, 2017; Minakir, 2022) to extend preferential treatment to the entire territory of the Russian Far East. Recently, this idea has become the focus of attention of the Russian Government<sup>2</sup>.

The aim of the work is comparative analysis of the problems and methodological approaches to assessing the effectiveness of financial measures implemented by the preferential regional policy of ODTs and the FPV in the Russian Far East (FE).

### Research materials and methods

The theoretical basis of the research is the concept of propulsive industries and growth poles of F. Perroux (Perroux, 2007). The methodological basis of the work includes systems and comparative analyses, and various methods of data visualization. The information base consists of analytical documents and official financial statements of federal, regional and local authorities.

<sup>1</sup> FEADC JSC is the management company of the outstripping socio-economic development territories, the Free Port of Vladivostok and the Arctic Zone of the Russian Federation in the Far Eastern and Arctic constituent entities of the Russian Federation.

<sup>2</sup> The entire Russian Far East can become a single territory of outstripping development. Available at: <https://www.vedomosti.ru/economics/articles/2022/11/17/950880-ves-dalnii-vostok>

### Specifics of the emergence and functioning of preferential regimes

The first type of financial support for regional development in Russia was federal target programs<sup>3</sup> that homogeneously covered the entire territory of the federal district. We should recognize that these programs, as noted in the literature, did not give a great impetus to the development of the Russian Far East “due to three reasons: vagueness of the target program objectives (“achieving economic growth”); continuous underfunding of program activities; lack of a management system for their implementation and real redistribution of financial flows” (Leonov, Barabash, 2020).

Subsequently, the federal center began to shift the focus in the development of the region toward the formation of effective economic institutions and an environment favorable for the functioning of investors, complementing region-wide projects with the simultaneous implementation of local or point projects within the framework of the concept of “growth poles” (Perroux, 2007).

The RF Government has chosen to use special legal regimes for conducting business within the borders of individual territorial entities at different levels, when accelerated economic growth in selected locations should be achieved by providing a particularly beneficial, localized economic environment for doing business. Attempts were made to introduce the ideas of special economic zones and then exclusive economic zones in the Far East. The results of the implementation of these ideas at the regional level turned out to be controversial<sup>4</sup>.

Creating territories with an outstripping socio-economic development regime launched in 2014 in accordance with the federal law<sup>5</sup> has become an instrument of polarizing policy in relation to the modern Far East. The ideology of ODTs<sup>6</sup> in Russia was first applied in the Far Eastern regions. Currently there are 17 ODTs in the Far East (their number has recently decreased due to the consolidation of some of them within RF constituent entities in order to optimize management<sup>7</sup>).

<sup>3</sup> To overcome the crisis in the Far East, it was necessary to take special measures of state support in terms of concentrating state budget funds on the main target areas. The main instrument of state regulation of regional development in relation to the Far East was the federal target program “Development of the Far East and Transbaikalia”, which has about a dozen different variants since the mid-1980s (Minakir, 2022).

<sup>4</sup> Attempts to create special economic zones and exclusive economic zones in the Far East were unsuccessful due to a number of reasons: the scale of the zones was obviously unrealistic, and they required huge investments for infrastructure development, which the Russian Government was unable to provide. The weak regulatory and legislative framework did not provide really favorable economic (tax, customs and currency) conditions for the creation and operation of zones in comparison with the conditions offered in neighboring countries.; when creating the zones, the Russian Government has absolutized a fiscal approach aimed at generating as much budget revenue as possible and as soon as possible, rather than balancing the interests of the state and investors (Kuznetsova, 2016; Leonov, Barabash, 2020, pp. 22–24).

<sup>5</sup> On outstripping socio-economic development territories in the Russian Federation: Federal Law 473-FZ. Available at: [https://www.consultant.ru/document/cons\\_doc\\_LAW\\_172962/](https://www.consultant.ru/document/cons_doc_LAW_172962/)

<sup>6</sup> We should note that the difference between the concepts of ODTs (outstripping development territories) and OSEDTs (outstripping socio-economic development territories) is quite conditional. Initially, OSEDTs were created to suit the export specialization of the region, but due to the 2014 sanctions the specialization of the Far Eastern territorial formations was clarified in practice under the idea of import substitution. The abbreviation ODTs (outstripping development territories) began to be used more often. Currently, ODTs and OSEDTs are often considered synonymous, unless otherwise agreed in advance. Nevertheless, it can be considered with a certain degree of conditionality that the abbreviation OSEDT in modern conditions is more associated with the concept of single-industry towns as territories of outstripping socio-economic development created on the territories of single-industry municipalities of the Russian Federation (single-industry towns) (see RF Government Resolution 1240, dated September 23, 2019).

<sup>7</sup> For example, in 2023, in the Khabarovsk Territory, the outstripping development territories of Khabarovsk, Komsomolsk and Nikolaevsk were merged into a single Khabarovskaya ODT (RF Government Resolution 1045 “On the unification of outstripping development territories created in the Khabarovsk Territory and the invalidation of certain acts and certain provisions of certain acts of the Government of the Russian Federation”, dated June 28, 2023 ([government.ru/docs/all/148423](http://government.ru/docs/all/148423))); in the Amur Region, the Belogorsk, Priamurskaya and Svobodny outstripping development territories were merged into a single Amurskaya ODT (RF Government Resolution 3 “On the unification of outstripping development territories created in the Amur Region and the invalidation of certain acts and certain provisions of certain acts of the Government of the Russian Federation”, dated January 10, 2023 (<http://static.government.ru/media/files/dMzEtTgVDkP17Lmpalvg9AgagglnaSC.pdf>)).

Figure 1. Main preferential regimes of the Russian Far East



Source: compiled by V.D. Khizhnyak based on the Annual Report on the Activities of the Far East and Arctic Development Corporation for 2023.

In 2015 the preferential regime “Free Port of Vladivostok”<sup>8</sup> was launched, the experience of which was later extended to 22 municipalities in five regions of the Far Eastern Federal District (FEFD).

In fact, the peak of creation of preferential regimes in Far Eastern regions (Fig. 1) occurred in 2015–2021, when crisis phenomena were occasionally observed in the country’s economy, and the selective policy of this time was focused on stimulating potential “growth points” in the interests of both the relevant territories and the country as a whole.

As we can see, in some cases there is a territorial intersection of various preferential regimes, but it is stipulated by law that the preferences of each regime cannot be superimposed (summed up) and act simultaneously<sup>9</sup>.

Interest in the financial performance of local preferential regimes in the Far East, which are conceptually close to “growth poles” and are forming around “anchor” projects that serve as “propulsive industries” in the terminology of F. Perroux (Perroux, 2007), is mentioned in a significant number of works. Initially, it was assumed these regimes would provide “incentives for transformational economic development” (Fortescue, 2022).

The existing positive assessments of the functioning of preferential regimes focus on the

<sup>8</sup> About the Free Port of Vladivostok: Federal Law 212-FZ, dated July 13, 2015. Available at: [https://www.consultant.ru/document/cons\\_doc\\_LAW\\_182596/](https://www.consultant.ru/document/cons_doc_LAW_182596/)

<sup>9</sup> For example, according to Federal Law 473-FZ “On outstripping socio-economic development territories in the Russian Federation”, the municipality on whose territory an outstripping development territory was created belongs to the Arctic Zone of the Russian Federation in accordance with Federal Law 193-FZ, dated July 13, 2020 “On state support for entrepreneurial activity in the Arctic Zone of the Russian Federation”. At the same time, residents of the specified outstripping development territory retain the resident status obtained in accordance with this Federal Law and carry out their activities in accordance with concluded agreements on the implementation of activities until the expiration of their validity period”. ([https://www.consultant.ru/document/cons\\_doc\\_LAW\\_172962/](https://www.consultant.ru/document/cons_doc_LAW_172962/)).

results of potential economic activities of their residents, which in the medium term will be able to create an effect measured by tens of thousands of jobs (Sida, Kan, 2021; Chichkanov, Belyaevskaya-Plotnik, 2022). According to some estimates, preferential regimes are designed to ensure more than two thirds of economic growth and up to a quarter of investments in the FEFD (Savchenko, 2022, p. 54).

On the other hand, it is recognized that the cost of maintaining preferential regimes reaches 70% of all budget expenditures on FEFD development (Borshchevskiy, 2024; Gulidov, 2021). Moreover, even the authors who give positive assessments note the uneven level of effectiveness and development potential of ODTs and the FPV (Sida, Kan, 2021, p. 30), when already at the first stage of formation, the FPV regime turned out to be more popular among investors due to the lack of need to purchase a land plot that was provided to the resident according to the application principle. As a result, the number of FPV residents grew twice as fast from 2016 to 2020 compared to the number of ODT residents, and competition between preferential regimes led to tougher conditions in one of them contributing to an increase in the number of residents in the other (Leonov, 2020).

#### **Complexity of financial assessment of the results of preferential regimes**

The complexity of such an assessment in relation to municipalities is partly explained by the open nature of the regional economy and its strong dependence on external impacts (Savchenko, 2022; Kuznetsova, 2016). The preferential regimes of ODTs and FPV are currently quite close both in terms of functionality and goals and objectives (*Tab. 1*).

However, there are several significant differences between these regimes.

First, it concerns the provision of infrastructure. In ODTs the infrastructure is created by the management company and residents have

Table 1. Comparison of ODTs and FPV preferential regimes

Feature	ODT (2014)	FPV (2015)
Authorized body	RF Ministry for the Development of the Russian Far East and Arctic (Minvostokrazvitiya)	
Period of operation	70 years with the possibility of extension	
Infrastructure	Provided by the management company	Connecting using own means
Provision of land plots to residents	Provided by the management company	The declarative principle until 2020 (a resident received land in a municipality without an auction), since 2020, land is provided to residents of the SPV at an auction in accordance with the Land Code of the Russian Federation.
Place of implementation	Determined by cadastral quarters for each ODT individually	Within the boundaries of municipalities
Tax benefits for residents	social contributions in the amount of 7.6% for the first 10 years	
	property tax 0% for 5 years, 0.5% for the next 5 years	
	0% land tax for the first 3–5 years (the exact term is set by the representative body of the municipality)	0% land tax (for the first 5 years)
	0% profit tax for the first 5 years, 12% for the next 5 years (2% to the federal budget and 10% to the regional budget)	0% profit tax to the federal budget and no more than 5% to the regional budget
	0% mining tax for the first 2 years, with a gradual increase in the reduction coefficient to 100% over 10 years	10 days expedited VAT refund
Necessary investments	500 thousand rubles	until 2022, 5 million rubles / starting in 2022, 500 thousand rubles for three years
Special obligations of the resident	Responsible for not using the requested infrastructure	Absent
About the Free Port of Vladivostok: Law of the Russian Federation 212-FZ, dated July 13, 2015. Available at: <a href="http://www.consultant.ru/document/cons_doc_LAW_182596/">http://www.consultant.ru/document/cons_doc_LAW_182596/</a> ; On outstripping socio-economic development territories in the Russian Federation: Law of the Russian Federation 473-FZ, dated December 29, 2014. Available at: <a href="http://www.consultant.ru/document/cons_doc_LAW_172962/">http://www.consultant.ru/document/cons_doc_LAW_172962/</a> (accessed: June 2, 2024).		

the right to request the necessary infrastructure from FEADC JSC, provided they are fully responsible for its use.

Second, the amount of minimum investment, which was significantly different at the first stages of operation of the ODTs and FPV regimes: for residents of the FPV it was 5 million rubles<sup>10</sup>, and from January 12, 2022 the volume of required investments was reduced to 500 thousand rubles over 3 years<sup>11</sup>. At the same time, for ODT residents the minimum contribution was initially 500 thousand rubles.

<sup>10</sup> On approval of the criteria for the selection of residents of the Free Port of Vladivostok: RF Government Resolution 1123, dated October 20, 2015.

<sup>11</sup> On amendments to the criteria for the selection of residents of the Free Port of Vladivostok: RF Government Resolution 2514, dated December 28, 2021.

The third difference between these regimes, which was recently eliminated, concerned the acquisition of land plots by FPV residents at cadastral value without bidding<sup>12</sup>. However, the limited number of vacant land plots and high demand for them in Vladivostok led to the fact that at the beginning of April 2020 more than 70% of residents of the FPV who applied for land plots had not received them (Leonov, 2020). To resolve this

<sup>12</sup> According to the results of a survey conducted among SPV residents in 2019, 86% of respondents stated that preference in obtaining land is of key importance for the implementation of their investment projects. If there was no such benefit, more than 40% of respondents would have refused to implement projects due to the lengthy registration of land plots, and over a third more because of the high cost of land being formed at auction (the Residents Association defended the key preference of the Free Port of Vladivostok. Available at: <https://primamedia.ru/news/927383/>).

Table 2. Comparative dynamics of the number of residents of the Far Eastern ODTs and the FPV, units

	2016	2017	2018	2019	2020	2021	2022	2023
ODTs	111	211	330	425	492	562	644	762
FPV	118	432	1057	1720	2119	2073	2130	2045
Total	229	643	1387	2145	2611	2635	2774	2807

Source: Annual report on the activities of the Far East and Arctic Development Corporation for 2016–2023. Published in accordance with Part 5 of Article 8 of Federal Law 473-FZ, dated December 29, 2014 “On outstripping development territories in the Russian Federation” (with amendments and additions) and the Order of the Minvostokrazvitiya of Russia.

issue, the State Duma of the Russian Federation adopted a federal law that deprived FPV residents of their former land preferences<sup>13</sup>. The abandonment of the declarative principle of land grant significantly affected the growth rate of the number of FPV residents (*Tab. 2*). As a result of the abandonment of the declarative principle of land plots allocation, the growth in the number of FPV residents, which overtook the growth of ODT residents by 2.1 times in 2016–2020, slowed dramatically in 2020–2023.

In fact, these data indicate the need for extremely careful intervention in the mechanism of setting up the tools of preferential influence on the activities of entrepreneurs who are residents of local preferential zones.

The fourth difference between the FPV and ODTs, which has persisted to this day since the introduction of these regimes in the economy of the Far East, is the difference in the territorial boundaries of the impact of a particular regime, which significantly affects the ability to track the financial results of the introduction of preferential treatment in the economy of a particular municipality. For the FPV the simplified administration regime is localized within the boundaries of municipalities, and the preferential

ODT regime introduces preferences only within specific cadastral sites, which, while being organizationally related to one ODT, can be geographically located in different, even non-adjacent municipalities (Leonov, 2020; Tolmachev, Leonov, 2020).

The above provisions indicate that, for example, it is much more difficult to track the financial results of the impact of the ODT regime on the socio-economic development of a municipality than the FPV regime, which covers a specific municipality as a whole. At the same time, the task becomes much more complicated if several preferential regimes operate on the territory of a municipality; in this case the financial results of the impact of preferences will be possible to capture only at the level of the consolidated budget of the RF constituent entity, which records both the total amount of tax benefits provided to residents and the total amount of incoming tax deductions.

#### **Approaches to assessing the financial impact of preferential measures**

The need to use quantitative criteria in assessing the financial effects of preferential municipal regimes is recognized by researchers<sup>14</sup> (Zaitseva, 2007; Mikheyeva, Ananyeva, 2011) and practitioners (Shirokov, Yurkova, 2020).

However, in reality, the difficulty of setting up a unified system for assessing the financial results of regional preferential policies for municipalities is due to several points.

<sup>13</sup> As of October 25, 2020, Federal Law 318-FZ, dated October 15, 2020 “On invalidation of certain provisions of legislative acts of the Russian Federation in connection with a change in the procedure for leasing land plots in state or municipal ownership to residents of the Free Port of Vladivostok” entered into force; the Law resolved the issue regarding the competition between residents of the FPV applying for the same land plot the land plot by resuming the auction procedure in accordance with the restored requirements of the Land Code of the Russian Federation.

<sup>14</sup> Bachtler J. Assessing regional policy in the European Community. Available at: [http://www.politanaliz.ru/articleprint\\_501.html](http://www.politanaliz.ru/articleprint_501.html) (accessed: May 2024).

1. **The political features** of the implementation of the Far Eastern preferential regimes within the framework of the existing vertical of power indicate that the management model developing in the region demonstrates a significant dependence on the personal activity of the head of an RF constituent entity. According to researchers, “investment projects are more successfully implemented in those Far Eastern regions that have a higher level of development and more influential governors; this confirms participation of regional elites in the formation and implementation of federal spatial development policy, but is extremely difficult to quantify” (Borshchevskiy, 2024).

2. **The difficulties of clustering the objects** due to the differences between municipalities in area, population density and level of economic activity<sup>15</sup>. As a result, it is extremely difficult to form clusters of municipalities to compare the financial results obtained in a municipality with and without territorial benefits (Leonov, 2023b).

3. **The influence of the assessment horizon should be taken into account.** Preferential regimes in the short term often lead to a loss of tax revenues by the municipal budget, when in the short term most of the region’s tax revenues are “eaten up” by tax benefits (Kuznetsova, 2016). In fact, the development of recommendations on the use of assessment results largely depends on the lag laid down in the process of evaluating the results of the impact of government measures on the development

of a municipality. Thus, in the case of ODTs, a 13-year lag was included in the methodology for assessing their effectiveness<sup>16</sup>.

In addition, of importance is long-term stability of the benefits introduced, which is the main condition for the effective functioning of preferential regimes (Tolmachev, 2021).

4. **The problem of selecting the indicators** that provide a comprehensive assessment of the results of stimulating municipal development (Kulakovskiy, 2019). The Institute for Urban Economics actively worked on this problem at the beginning of the formation of the modern system of municipal organizations (Zaitseva, 2007), but recently the possibility of using the gross municipal product as a comprehensive indicator of the development of the municipality’s economy has been actively discussed (Gafarova, 2017; Uskova, 2009). Since this indicator has certain disadvantages, it is proposed to focus on a system of territorial indices reflecting different aspects of the socio-economic development of municipalities.

The use of territorial indices is associated with the problem of selecting indicators at the stage of forming integral territorial indices, constructing the indices themselves, and interpreting the results during the analysis (Tarasova, Soldatenko, 2024). The main problems include lack of a clear interpretation of the results, poor representativeness of the information, and widespread use of expert assessments. The latter often leads to subjective

<sup>15</sup> We should point out that the spread of municipalities according to these parameters is noted not only in Russia, but also in other countries. For example, in the OECD the main analysis of spatial data is conducted in the context of NUTS 3 regions, which are closest in meaning to Russian municipalities, with a population of 150 to 800 thousand people, with an average value of 380 thousand people per region for the European Union (Report of the World Observatory on Subnational Government Finance and Investment – Key Findings (2019) / OECD/UCLG. 109 p. Available at: [https://www.sng-wofi.org/publications/2019\\_SNG-WOFI\\_REPORT\\_Key\\_Findings.pdf](https://www.sng-wofi.org/publications/2019_SNG-WOFI_REPORT_Key_Findings.pdf) (accessed: May 2024)).

<sup>16</sup> The effectiveness of an outstripping development territory should be assessed annually, starting from the 13th year following the year in which the Government of the Russian Federation decided to create the outstripping development territory. For more information, see RF Government Resolution 1240 “Methodology for evaluating the effectiveness and monitoring performance indicators of territories of outstripping socio-economic development territories, with the exception of outstripping socio-economic development territories established in the territories of single-industry municipalities of the Russian Federation (single-industry towns)”, dated September 23, 2019.

calculations, since the reliability of estimates depends on the competence of experts and their objectivity in ranking the results (Leonov, 2024).

In other words, although Russia has not set up a generally accepted universal methodology for assessing the financial results of preferential policies, we can talk about emerging approaches to such an assessment.

First, the methods of multi-criteria analysis are being improved, although this approach has flaws as well. Thus, the approved methodology for evaluating the effectiveness of ODTs<sup>17</sup> includes six groups of initial parameters: 1) volume of private investments; 2) amount of budget funds for the creation of ODT infrastructure; 3) number of jobs created; 4) amount of value added created by ODT residents (calculated by the management company); 5) amount of tax and customs benefits and payments (except insurance premiums); 6) total expenditures of the RF budget system. There is no open data for parameter groups 2, 4, and 6, which, by definition, does not allow conducting a full-fledged assessment of the effectiveness of ODTs within the framework of the proposed methodology (Tolmachev, 2021).

The state program “Socio-economic development of the Far Eastern Federal District” contains five indicators characterizing the functioning of ODTs and the FPV<sup>18</sup>, while the state

<sup>17</sup> Methodology for evaluating the effectiveness and monitoring performance indicators of territories of outstripping socio-economic development territories, with the exception of outstripping socio-economic development territories established in the territories of single-industry municipalities of the Russian Federation (single-industry towns): RF Government Resolution 1240, dated September 23, 2019.

<sup>18</sup> State program “Socio-economic development of the Far Eastern Federal District” was approved by RF Government Resolution 308, dated April 15, 2014 as amended December 10, 2021 No. 2256 and includes the following target indicators: number of ODTs created in the FEFD (cumulative total); accumulated volume of investments of ODT residents in the FEFD (cumulative total); number of jobs created in ODTs in the FEFD (cumulative total); number of jobs created in the territory of the SPV; number of investment projects of ODT and SPV residents implemented with the participation of loans issued at a preferential rate (cumulative total).

program “Socio-economic development of the Arctic Zone of the Russian Federation” takes into account only two indicators of the effectiveness of program activities: the accumulated volume of extra-budgetary investments by residents of the AZRF and ODTs in the Arctic Zone of the Russian Federation, as well as the number of jobs created on territories as a result of the implementation of the Program’s activities<sup>19</sup>.

The second area is related to a number of econometric studies that attempt to assess the results of preferential policies through a quasi-experiment, when attempts are made to compare the results of preferential treatment in the territories under consideration with the financial results of development in a pre-formed cluster of regions where preferential treatment was not applied (Kotov, 2022). This approach is limited by the complexity of forming clusters of municipalities for comparison and the complexity of interpreting the results noted above<sup>20</sup>. Therefore, we cannot but agree with the existing opinion that “despite the development of econometric methods and specialized software and model complexes, their explanations for solving problems of applied regional policy are rarely obvious” (Kotov, 2020).

In view of the above, issues related to the assessment of the financial effectiveness of the preferences operating in Far Eastern municipalities can be considered from a strategic and tactical point of view.

<sup>19</sup> State program “Socio-economic development of the Arctic Zone of the Russian Federation” was approved by RF Government Resolution 484, dated March 30, 2021.

<sup>20</sup> We should note that Russian and foreign approaches to assessing the results of regional policy, have not formed a generally accepted, satisfactory from the point of view of the expert community, universal methodology for assessing the effects of regional policy measures and choosing the most rational measures of state support for municipal development. The development of econometric research and emerging microdata sets makes it possible to analyze the impact of regional policy on enterprise performance. The effects are studied at aggregated (regional) levels. At the initial stage of the analysis, groups of similar regions (enterprises) are formed, followed by a comparison of the distribution of selected characteristics among firms in the regions that received and did not receive support (Kline, Moretti, 2014).

In the strategic (long-term) perspective, an important issue is related to the ratio of tax benefits provided to residents and the volume of investments attracted to the zones. Since the period of establishment of preferential zones takes at least 10 years on average, the period of tactical (medium-term) perspective is extremely important for state and municipal authorities, when creating conditions for the establishment of preferential zones places a serious burden on regional budgets.

In this study, when assessing the medium-term financial results of implementing measures for the region's economy, we made an attempt to take into account at the level of RF constituent entity the ratio of tax benefits provided to residents of preferential zones (interpreted as shortfall in local budget revenues) and the amount of tax payments made by residents of the zones to regional budgets. The importance of this approach can be explained, on the one hand by its visibility, on the other hand by the need to test the hypothesis of a "tax trap" when preferential regimes are implemented in the Far East.

#### **Dissemination of the ODT regime to the entire Far East and the emergence of a "tax trap"**

The fact that the Far East has preferential regimes that are essentially similar ("growth points") but differing in the details of the implementation has urged scientists to consider the need to expand preferential regimes to the entire territory of the Far East.

Back in 1990, on the eve of the collapse of the USSR, academician P.A. Minakir pointed out: "The Far East can only develop as a region open in both directions – toward the Pacific rim and toward European Russia. In a closed condition the region is doomed to rapid extinction. The competitiveness of almost all types of products for the domestic market is zero, and there is no hope for economic development by attracting capital here, creating new economic potential and increasing income. The attractiveness for foreign producers is constantly

decreasing due to the closeness of the region" (Minakir, 1990, pp. 18–19). For these reasons, P.A. Minakir believed that "in order to break the current vicious circle, conditions should be created for the free movement of capital, people and technology between the Far East and East Asia, which in turn would be an incentive to attract Russian capital to the region" (Minakir, 2017).

We should note that recently these ideas, as well as aspirations to build up territories with preferential treatment, have been voiced by representatives of the highest echelon of the Russian government. Thus, according to Yuri Trutnev, Deputy Prime Minister and Presidential Envoy to the Far Eastern Federal District, a single territory of outstripping development (ODT) can be created in the Far East<sup>21</sup>.

Experts of the Ministry for the Development of the Russian Far East believe that the creation of a single ODT with uniform tax benefits and preferences will simplify administrative procedures related to the management of the ODT and shorten the launch time of new facilities for residents. In addition, according to experts<sup>22</sup>, launching a unified management process for the zone can accelerate the attraction of direct investment, including foreign investment, promote the growth of business activity and development of small and midsize enterprises.

<sup>21</sup> "Mikhail Mishustin and I discussed further improvement of work in ODTs. We have made a proposal to create a single ODT in the Far East. So as not to adopt new regulations each time regarding the creation of separate ODTs, we proposed making the entire territory of the Far East an outstripping development territory", said Yuri Trutnev, Presidential Envoy to the Far Eastern Federal District (Romanova L. The entire Far East can become a single outstripping development territory. Available at: <https://www.vedomosti.ru/economics/articles/2022/11/17/950880-ves-dalnii-vostok>).

<sup>22</sup> How ODTs are changing the economy of the Far East: *Amurskaya pravda* has compiled a portrait of outstripping development territories. Available at: <https://ampravda.ru/2024/01/09/kak-tor-menjayut-ehkonomiku-dalnego-vostoka-apsostavila-portret-territorij-operezhayushchego-raz-vitija?ysclid=lxns506hhh250488445>

Indeed, the idea of a single preferential treatment for the entire territory of the Far East, expressed by academician P.A. Minakir, is no longer new, but it is tempting, since it can be assumed that the extension of tax benefits and support measures provided for ODTs to the entire federal district will attract significant investments to the region.

Nevertheless, it seems that the use of a single preferential treatment may lead into a trap. The ODT, like the FPV, assumes a preferential tax regime, including regional income and property taxes, which form a significant part of local budget revenues; therefore, the expansion of territories covered by preferential regimes may lead to significant shortfalls in income for the Far Eastern constituent entities of the Russian Federation.

#### **Assessing the shortfall in revenues of regional budgets when using preferential regimes. The case of the Khabarovsk Territory**

Let us take a closer look at a specific example of the problems concerning tax benefits and income shortfalls in regions whose municipalities operate under preferential ODT and FPV regimes.

The Khabarovsk Territory is a Far Eastern federal constituent entity, where the ODT regime was introduced in Russia for the first time, followed by the FPV. The existing experience of simultaneous operation of both preferential regimes allows us to assess the potential gains and losses for a particular constituent entity of the Federation (*Fig. 2*).

In the Khabarovsk Territory the FPV regime is implemented in Vaninsky and Sovetsko-Gavansky municipal districts.

Khabarovskaya ODT was formed on June 28, 2023<sup>23</sup> as a result of the merger of three ODTs:

<sup>23</sup> On the unification of outstripping development territories established in the Khabarovsk Territory and the invalidation of certain acts and individual provisions of certain acts of the Government of the Russian Federation: RF Government Resolution 1045, dated June 28, 2023. Available at: <http://government.ru/docs/all/148423/>.

Khabarovsk<sup>24</sup>, Komsomolsk<sup>25</sup> and Nikolaevsk<sup>26</sup>. The total area of the formed outstripping development territory is 623.3 thousand hectares. The localization of Khabarovsk ODT sites is not so clear. The ODT regime operates within the framework of cadastral plots in the territories of Amursky, Verkhnebureinsky, Vyazemsky, Komsomolsky, Solnechny, Khabarovsky, Nanaisky and Nikolaevsky municipal districts, Okhotsky Municipal Okrug, Lazo Municipal District, urban okrugs “Komsomolsk-on-Amur City” and “Khabarovsk City”.

Figure 2 shows the differences between the territorial structures of the ODTs and the FPV, which are explained by the very idea of forming local zones. In the case of the FPV preferential treatment is localized within specific municipalities (in the Khabarovsk Territory these are Vaninsky and Sovetsko-Gavansky districts); in the ODTs preferential treatment is provided to a specific resident in certain cadastral plots.

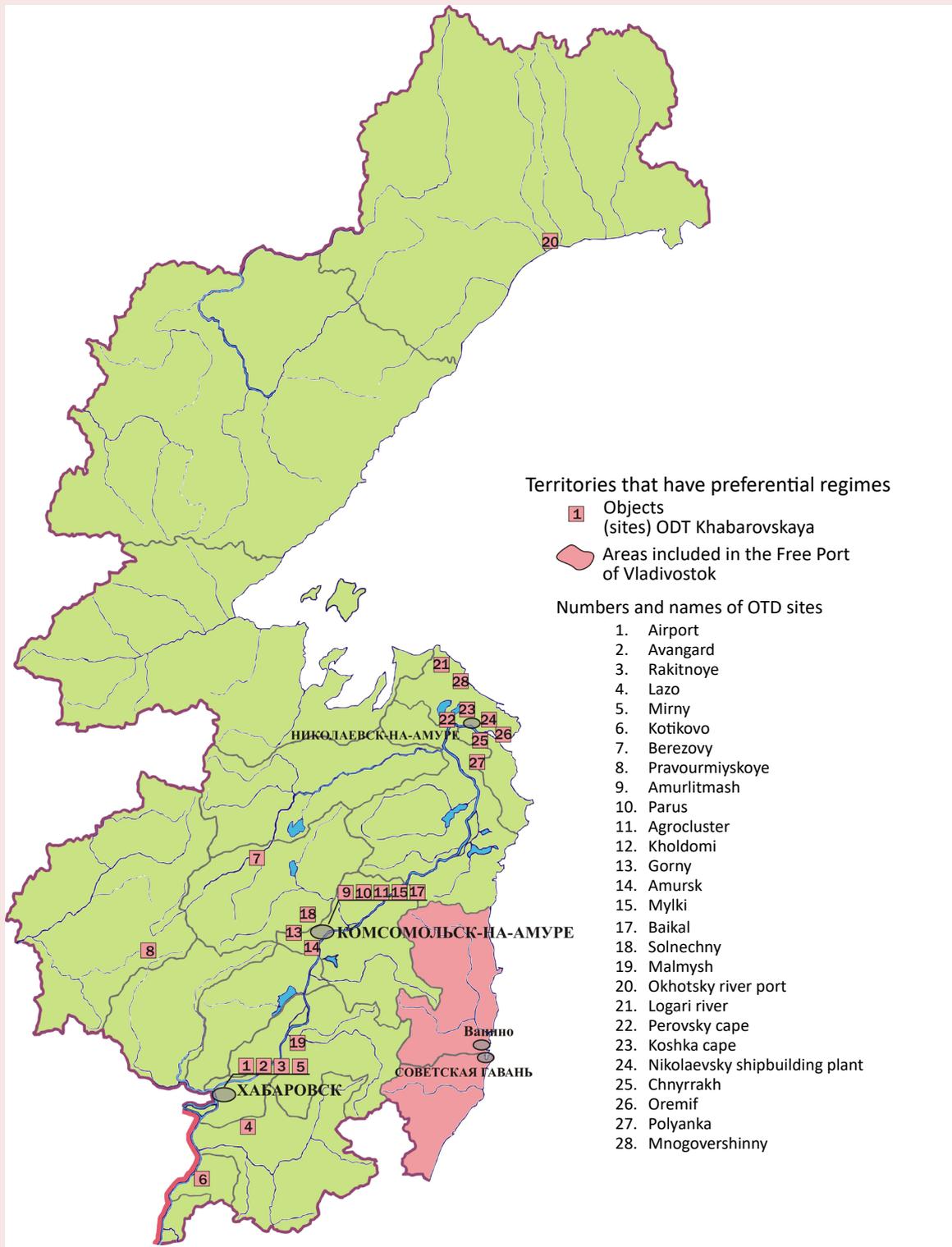
As a result, there are significant differences in the number, size and territorial “dispersion” of the location of sites in the ODTs, which makes it extremely difficult to assess the impact of the preferential treatment of the ODTs on the financial condition of a particular municipality.

<sup>24</sup> The ODT “Khabarovsk” became the first ODT in Russia. The territory was created in 2015 in accordance with RF Government Resolution 629, dated June 25, 2015. In 2018, the ODT “Khabarovsk” was expanded.

<sup>25</sup> The ODT “Komsomolsk” became one of the first ODTs in the Far East, having been established in accordance with RF Government Resolution 629, dated June 25, 2015. Subsequently, the territory was expanded three times: in 2017, in January 2018 and in April 2018.

<sup>26</sup> The ODT “Nikolaevsk” was established in accordance with RF Government Resolution 464 “On establishing the outstripping development territory “Nikolaevsk”, dated April 19, 2017. Since then, the borders of the territory have been expanded three times by RF Government resolutions: 1361, dated November 11, 2017; 90, dated February 7, 2019, and 773, dated May 28, 2020.

Figure 2. Main sites of Khabarovskaya ODT and the territories of the FPV located in the Khabarovsk Territory, as of January 1, 2024



Source: compiled by V.D. Khizhnyak according to: List of investment sites of the ODTs in Khabarovsk (<https://khv27.ru/administration/structural-units/uir/investitsii/investitsionnye-ploshchadki-munitsipalnye-chastnye-promyshlennye-parki-i-t-d/-perechen-investitsionnykh-ploshchadok/>)

Table 3. Tax payments and the amount of tax benefits provided in the preferential zones of the Khabarovsk Territory for 2016–2023, million rubles

Preferential zone	Tax payments	Tax benefits
<b>In general in the preferential zones of the Khabarovsk Territory</b>	<b>8653.4</b>	<b>10376.3</b>
Including:		
<b>Khabarovskaya ODT</b>	<b>6623.8</b>	<b>7311.8</b>
Including:		
ODT “Khabarovsk”	1559.0	1164.4
ODT “Komsomolsk”	3663.2	2921.2
ODT “Nikolaevsk”	1401.6	3226.2
<b>FPV of the Khabarovsk Territory</b>	<b>2029.6</b>	<b>3064.5</b>
Including:		
Vaninsky District	1897.5	3018.3
Sovetsko-Gavansky District	132.1	46.2

Source: own calculation using the data provided by the Ministry of Finance of the Khabarovsk Territory.

Existing assessments of the activity of ODT residents in the Khabarovsk Territory show that municipalities with a greater amount of initial resources are more able to accept the policy of state support<sup>27</sup>.

At the same time, the impact of preferential measures of the ODT regime in the region varies significantly between different sites (Leonov, 2023a). The process of merging ODTs within a single constituent entity of the Russian Federation, which began in 2023, eliminates this difference and further complicates (obscures) the very possibility of assessing the impact of preferential measures on the development of a particular municipality (Tolmachev, Leonov, 2020). Such an assessment, as noted, becomes possible only at the level of RF constituent entity, in our case at the level of the Khabarovsk Territory.

According to the Ministry of Finance of the Khabarovsk Territory, for 2016–2023, residents were granted 10.4 billion rubles in tax benefits under the

preferential zones of the Khabarovsk Territory, and 8.7 billion rubles in tax payments were received by local budgets (*Tab. 3*).

Khabarovskaya ODT, established in 2023 by combining three previously established ODTs, currently has 99 residents specializing in the production of industrial and agricultural products and the provision of logistics services; 13.3 thousand jobs have been created here and 292.9 billion rubles of investments have been disbursed. From the years 2016 to 2023 residents of the ODT paid more than 6.6 billion rubles in taxes to the consolidated regional budget, while receiving tax benefits in the amount of more than 7.3 billion rubles.

The FPV regime operating in the Khabarovsk Territory covers 24 residents, 17 residents are located in Vaninsky District and 7 in Sovgavansky District; 4,000 jobs have been created in the FPV zone, and investments of more than 180 billion rubles have been secured. The main activities of FPV resident organizations are related to the transport and logistics sector (9 residents and 42% of the investments made) and the timber industry (7 residents and 29% of the investments made). The abolition of the priority right of residents to receive land plots without an auction has led to a decrease in the growth rate of the number of FPV participants in the region since 2021. The Khabarovsk Territory Duma is currently raising the issue of the need to

<sup>27</sup> We should note that similar behavior was typical for the municipalities of the Central and Eastern European countries, which joined the EU after May 1, 2004 and received the right to financial support from the Community. Despite the fact that the selection conditions for financial support were the same, the territories at the regional level were characterized by different socio-economic conditions (they had different “territorial capital”), which strongly influenced the financial results of the municipal cohesion policy within the EU (Fratesi, Perucca, 2014).

provide land plots to residents of the FPV without bidding<sup>28</sup> and proposes to review the provisions of the hastily adopted FZ-318 on October 15, 2020 regarding the waiver of this preference for residents of the FPV<sup>29</sup>.

In total, from 2016 to 2023, residents of the Khabarovsk Territory paid 2 billion rubles of taxes to the regional budget. The largest payers are VaninoTransUgol, Daltransugol and New Forest Pro. At the same time, tax benefits to FPV residents were provided in the amount of 3.06 billion rubles, more than one and a half times the amount of taxes paid to the budget.

The main problems faced by the regional budget of the RF constituent entity that has preferential zones on its territory include the following:

- significant increase in the volume of tax benefits provided at the expense of the regional budget as part of the preferential ODT and FPV regimes in the territory of the RF constituent entity, which covers the amount of tax revenues paid by residents to the consolidated budget and exacerbates the problem of shortfall in revenues;
- lack of compensation from the federal budget for the revenues lost by the budgets of RF constituent entities as a result of the ODT and FPV regimes;
- there is no limitation on the amount of tax benefits provided by the volume of investments in projects.

According to international practice, it takes about 10–15 years on average to establish a territory with a special economic status; after that the zone begins to bring dividends to the organizers – the

<sup>28</sup> The Khabarovsk Territory Duma considered attracting investments to Vaninsky and Sovetsko-Gavansky districts. Available at: [http://debri-dv.com/article/35921/privlechenie\\_investitsiy\\_v\\_vaninskiy\\_i\\_sovetsko-gavanskiy\\_rayony\\_rassmotreli\\_v\\_kraevoy\\_dume](http://debri-dv.com/article/35921/privlechenie_investitsiy_v_vaninskiy_i_sovetsko-gavanskiy_rayony_rassmotreli_v_kraevoy_dume)

<sup>29</sup> On invalidation of certain provisions of legislative acts of the Russian Federation in connection with a change in the procedure for leasing land plots in state or municipal ownership to residents of the Free Port of Vladivostok: Federal Law 318-FZ, dated October 15, 2020.

country and the region<sup>30</sup>. In the Russian Federation, according to the legislation, the minimum amount of investment for acquiring the status of a resident of a preferential zone is 500 thousand rubles. According to the Ministry of Finance of the Khabarovsk Territory, in 85% of the projects submitted to it (51 out of 59), the payback period of the project turned out to be significantly less than the period of preferential taxation. We can assume that in the conditions of the Far East, where a significant number of enterprises in ODTs have mining specialization, their owners will be able to make up for most of the invested funds at the expense of tax benefits in 10–15 years of the enterprise's functioning, having exploited a significant part of the ore base of the deposits during this time.

An important issue related to the effective organization of preferential regimes in the Russian Far East remains the choice of beneficiary residents to distribute subsidies in order to reimburse infrastructure development costs to ODT residents.

For example, Inaglinsky Mining and Processing Complex JSC<sup>31</sup>, a resident of South Yakutia ODT, received 2.4 billion rubles for the development of railway infrastructure and the construction of access railway tracks, which is 36.3% of the total financing allocated for the development of infrastructure in the macro region (6.7 billion rubles)<sup>32</sup>. While

<sup>30</sup> Zolt M.E. (2015). Tax incentives: Protecting the tax base. In: *Paper for Workshop on Tax Incentives and Base Protection New York, 23–24 April 2015*. New York: United Nations, Department of Economics and Social Affairs. Available at: [https://www.un.org/esa/ffd/wp-content/uploads/2015/04/2015TIBP\\_PaperZolt.pdf](https://www.un.org/esa/ffd/wp-content/uploads/2015/04/2015TIBP_PaperZolt.pdf)

<sup>31</sup> Inaglinsky Mining and Processing Complex JSC is developing the reserves of the Chulmakan and Verkhne-Taluminskoye coal deposits in Yakutia. The Complex belongs to Colmar coal mining company.

<sup>32</sup> The results of the selection of projects for the allocation of subsidies in order to reimburse infrastructure development costs to ODT residents. Available at: <https://minvr.gov.ru/upload/iblock/a94/rezultaty-otbora-proektov-dlya-raspredeleniya-subsidiy-v-tselyakh-vozmeshcheniya-zatrat-na-razvitie-infrastruktury-rezidentam-tor.docx>

according to the company's accounting statements, in 2021 net profit of Inaglinsky Mining and Processing Complex JSC exceeded 11.1 billion rubles, and in 2022 and 2023 it amounted to 13.4 and 10.4 billion rubles, respectively<sup>33</sup>.

A rhetorical question arises: should the state allocate more than a third of the financial resources provided to support the construction of the railway and energy infrastructure in the entire macro region to ensure the activities of a company capable of financing these activities without government support?

The absence of restrictions on the amount of tax benefits provided by the volume of investments in projects could be perceived as reasonable if the specialization and functioning of residents of the preferential zone were long-term and aimed at the production of processed industrial products. However, in the case of mining enterprises, there is a high probability that tax benefits will compensate the investor for the capital spent, and when the field is fully developed, they will not bring the expected revenue to the regional budget.

In fact, if the proposal put forward by Yuri Trutnev, Deputy Prime Minister and Presidential Envoy to the Far Eastern Federal District, to establish a preferential zone throughout the Far East is implemented, then the identified problems of shortfalls in tax revenues, without their appropriate damping, may lead to a serious problem in replenishing regional budgets.

Among the real measures to dampen the effects of the "tax trap" on regional budgets in the event of an expansion of the zone of local preferential regimes to the size of the Far Eastern Federal District, the following should be envisaged and worked out in detail:

- a mechanism for partial compensation from the federal budget of revenues lost by the budgets of RF constituent entities due to the application of preferential regimes of ODTs and the FPV;
- the possibility for ODT and FPV residents to apply tax benefits only if they comply with the controlled indicators of the agreement on the implementation of activities as a resident of one of the preferential zones;
- limitation of the amount of tax benefits provided to residents of ODTs and the FPV in the amount of no more than the amount of actual expenditures on capital investments and/or scientific research and development within the framework of the agreement on the implementation of activities as a resident of one of the preferential zones.

We should note that it is necessary to consider the fact that each establishment or expansion of a local preferential zone in the Far East was accompanied by targeted decisions by the RF Government to support specific "anchor projects" in accordance with the current working conditions in the local zone. Since it is almost impossible to abandon the application of specific measures to support "anchor projects", then as a result, it will require setting up and adopting a special decision regarding the preservation of existing additional preferences for anchor projects of preferential zones.

### Conclusion

In summary, we note that the preferential ODT and FPV regimes in the Far East have become the most widespread and widely used in the regional policy of modern Russia.

The open nature of the regional economy, the structural and territorial features of the implementation of the ODT and FPV regimes, the difficulties of clustering municipalities due to the strong differentiation of the Far Eastern municipal entities, as well as the extreme fragility of the

<sup>33</sup> Accounting statements and financial analysis of Inaglinsky Mining and Processing Complex JSC for 2011–2023. Available at: [https://www.audit-it.ru/buh\\_otchet/7704531762\\_ao-gok-inaglinskiy](https://www.audit-it.ru/buh_otchet/7704531762_ao-gok-inaglinskiy)

mechanism for setting up instruments of preferential influence on the activities of entrepreneurs – residents of preferential zones<sup>34</sup> determine the complexity of assessing the financial results of promoting municipal development.

It is much more difficult to track the financial results of the impact of the ODT regime on the state of a municipality than those of the FPV regime, which covers a specific municipality as a whole. If several preferential regimes operate on the territory of a municipality, then with the current state of municipal statistics, the task of determining the financial results of the impact of a particular regime on the state of a particular municipality becomes practically impossible.

Assessing the financial results of the impact of preferential regimes on the region's economy is possible at the level of RF constituent entity by taking into account the tax benefits provided to residents (interpreted as shortfall in consolidated budget revenues) and the volume of investments attracted by residents of preferential zones.

The paper shows that in order to assess the financial effectiveness of preferential regimes, it is important to take into account the evaluation horizon and the duration of the evaluation time intervals. The use of the FPV or ODT regimes in the short term has shown that most of the region's tax revenues are “eaten up” by tax benefits, but in the long term, after the launch of production, this problem can be handled. An analysis of the government's idea to expand preferential treatment to the entire territory of the Far East revealed the existence of a “tax trap” when a significant increase

in tax benefits provided from the regional budget covers the amount of taxes paid by residents of preferential zones to the local budget, which creates the problem of shortfall in budget revenues of RF constituent entity.

The problem is complicated by the lack of compensation from the federal budget for a shortfall in regional budget revenues due to the application of preferential regimes, as well as the lack of restrictions on the amount of tax benefits provided by investments in projects, as a result of which, for example, in the Khabarovsk Territory over 85% of the projects reviewed by the Ministry of Finance were paid off during the preferential taxation period.

Measures are proposed to dampen the effects of the “tax trap” on regional budgets in the case of expansion of the zone of local preferential regimes to the entire Far East. The measures include a mechanism for partial compensation from the federal budget of the revenues not received by the budgets of RF constituent entities due to the application of preferential regimes; the possibility for ODT and FPV residents to apply tax benefits in the form of a monetary grant, provided they fulfill their controlled obligations under the agreement on the implementation of activities as resident of a preferential zone; limiting the amount of tax benefits provided to ODT and FPV residents to an amount not exceeding the amount of actual capital expenditures.

Scientific significance of the performed research consists in elaborating a methodology for quantifying financial results in terms of measures of state preferential support for municipal development.

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<sup>34</sup> This refers to the above-described hasty abandonment of the declarative principle of allocating land to SPV residents in 2020, which led to a dramatic slowdown in the increase in the number of SPV residents in 2020–2023 and to the fact that Khabarovsk Territory deputies raised an issue regarding the need to return this preference to the portfolio of the FPV regime in 2024.

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## Balanced Development of the Region Based on Promoting Socially Oriented Non-Profit Organizations



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**Abstract.** The effectiveness of managing the regional economic system depends on many factors, including the willingness of authorities to involve non-governmental economic actors in addressing social issues. In this aspect, the functioning of socially oriented non-profit organizations is of great importance. The aim of our study, using the tools of a systems approach, is to develop directions to improve the system for managing balanced development of the region by promoting socially oriented non-profit organizations. The work is based on the results of foreign and Russian research, and the data from the research commissioned by the Grants Fund of the Governor of the Perm Territory in 2020–2022 using qualitative sociological methods. We analyze the system for managing balanced development of the regional economic system using the example of the Perm Territory, regarding the work of socially oriented non-profit organizations. Based on the criteria related to the ability of organizations to diversify the budget and the range of tasks performed, we identify conditional types of socially oriented non-profit organizations. We determine the

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directions for optimizing the external and internal environment in order to create institutional conditions for their development on a systems and long-term basis in the region. We propose an organizational and economic mechanism for managing the region's balanced development by promoting socially oriented non-profit organizations; this mechanism is determined by the cyclical nature of stimulating SONPO development and the choice of prevailing methods of managerial influence depending on the stage of the organization's life cycle. We prove that socially oriented non-profit organizations are perceived primarily as an object of state support; this fact limits the possibilities of using their potential in the region. We conclude that it is necessary to find a new approach to these organizations so that they would be perceived as active economic entities, which requires improving the institutional conditions for the activities of socially oriented non-profit organizations and including them in the management system for balanced development of the regional economic system.

**Key words:** SONPOs, regional economic system, balanced development, non-profit sector.

### Introduction

Currently, the need to ensure balanced development of regional economic systems is in the focus of attention of the state<sup>1</sup> and the mainstream of scientific and practical research (Goncharov, 2015; Uskova, Patrakova, 2024). The effectiveness of managing the region's balanced development depends, among other things, on the authorities' readiness to involve non-state actors – organizations of the private and non-profit (third) sector – in solving problems. This is mainly due to the ability of these organizations to ensure autonomy, flexibility of activities and use human resources on a volunteer basis, which as a result increases the degree of public participation in socio-economic processes. In socially important spheres, socially oriented non-profit organizations (SONPOs) as key representatives of the non-profit sector are of particular importance. The strengthening of their role in the socio-economic development of regions is largely explained by the fact that they provide social services to the population more effectively due to a better understanding of local problems,

have the ability to provide an individual approach and less bureaucratized activities (Volkova, 2010; Roberts et al., 2021). Relying on SONPOs as alternative providers of public goods, the state seeks to create favorable institutional conditions for their functioning, provides various types of support, stimulating the development of SONPOs' expert competencies to introduce and expand the range of innovative practices. This allows for a more even distribution of available resources in terms of areas of operation of SONPOs, territory of presence, coverage of the target audience, etc., thereby ensuring greater balance in the regional economic system.

At the same time, despite the real and potential effects of SONPOs' activities, in the current Russian practice they are perceived mainly as an object of support, rather than as an active economic agent capable of influencing the regional development balance (Artamonova, Bazueva, 2022). This is largely due to a variety of barriers that prevent SONPOs from being involved in solving socio-economic problems on a systemic and long-term basis (Bazueva et al., 2023). Currently, the range of used managerial impacts does not take into account the potential of SONPOs, their ability to ensure compliance between the population's needs in socially significant benefits and the

<sup>1</sup> Strategy for Spatial Development of the Russian Federation for the period until 2025 (approved by Governmental Order 207-r, dated February 13, 2019). Available at: [https://www.economy.gov.ru/material/directions/regionalnoe\\_razvitiye/strategicheskoe\\_planirovanie\\_prostranstvennogo\\_razvitiya/strategiya\\_prostranstvennogo\\_razvitiya\\_rossiyskoy\\_federacii\\_na\\_period\\_do\\_2025\\_goda/](https://www.economy.gov.ru/material/directions/regionalnoe_razvitiye/strategicheskoe_planirovanie_prostranstvennogo_razvitiya/strategiya_prostranstvennogo_razvitiya_rossiyskoy_federacii_na_period_do_2025_goda/)

resources available in the region and the ability to create conditions for smoothing imbalances in the formation and development of human capital as the main economic growth factor (Pelinescu, 2015; Goryacheva, 2018). The above-mentioned has determined the aim of this study, which consists in the development of directions for improving the management system of balanced development of the regional economic system (RES) based on the postulates of the system approach on the activation of SONPOs.

### Theoretical foundations of the study

Regions are the structural elements of the national economic complex of the country and at the current development stage are considered as a kind of supporting structure of Russia's economic growth. In this regard, the creation of conditions for their balanced development is in the center of attention of many scientists and practitioners (Goncharov, 2015; Uskova, Kopytova, 2017). Currently, several approaches to the management of the regional economic system are used (*Tab. 1*).

At the current stage of regional economic development, one of the key trends in the scientific and practical field is the increasing attention to the advantages of applying a system approach to ensure balanced development of RES.

From the point of view of conceptual provisions, it is carried out within the framework of several approaches. For instance, the stakeholder theory takes into account a wide range of multidirectional interests of subjects of economic relations with certain spheres of influence and sources of influence, therefore, it allows describing the mechanism of inclusion of non-state participants in the process of balancing the region's development (Sirotkina, Zaitsev, 2013; Plakhin, 2019). In practice, regional stakeholders include the state, business and population, the interaction of which takes place in a certain system focused on achieving the effective functioning of the regional economy by using the resources of each of the above sectors in the process of RES management (Kurganov, Tretyakova, 2020) and achieving the balance of all

Table 1. Comparative analysis of the main approaches to RES management

Approach	Description	Limitations
Synergo-cybernetic (Nekrasov, 2003; Khoshimzoda, 2021)	It assumes autonomy and independence of RES, no influence of external environment	It is difficult to implement in practice due to lack of actual autonomy of territories
Territorial (Panasyuk, 2005; Lyapina, 2011; Tyapukhin, 2021)	It is based on the management of individual territorial entities, which allows taking into account their features	It has difficulty in achieving coherence between the spatial, temporal and goal-oriented nature of processes in territorial entities
Process (Fayol, 1949; Evdokimova, 2011; Kochetkova, 2022)	It is realized through a set of processes taking place in the region, which makes it easier to adapt to changes and ensure the achievement of planned results under conditions of resource constraints	It has the need to take into account a large number of diverse processes, low efficiency within a large system
Project (Geizer, 2008; Uskova, Kopytova, 2017; Zyablikova, 2022)	It takes into account all regional processes within a single RES development project to ensure development comprehensiveness	It has difficulty of practical implementation of the approach in the long term due to the need to ensure interconnectivity of projects
Systemic (Belov, 2011; Sidorenko, 2018; Sribny et al., 2022)	It takes into account the interconnectedness of all elements and sectors of the national economy at the federal, regional and municipal levels. It allows ensuring comprehensiveness and focusing on the long-term economic development	It has the consequences of ineffective management decisions are manifested at all levels of the RES
Source: own compilation.		

types of capital: natural, physical, financial, human, social (Tretyakova, 2014; Davankov, Yatsukova, 2015; Babkova, Pakhanov, 2018; Shen et al., 2018).

Another concept describing the interaction between non-state actors and the authorities is the New Governance Theory, which emerged in the 1970s and has been actively spread since the 1990s. According to its provisions, to improve the standard of living and quality of life, it is necessary to build an effective partnership between the authorities and non-state actors through the continuous development of network horizontal ties. The basis of interaction is the willingness and ability of all economic actors to discuss problems and find optimal management solutions with the active involvement of the public (Salamon, 2001; Keping, 2018). In this case, the areas of responsibility are distributed in the following way: the state is assigned the main role in the normative-legal regulation of processes, the contribution of the non-profit sector is expressed in a better understanding of the problems and the ability to coordinate the actions of other participants, the task of the private (commercial) sector is to provide resources and apply effective management approaches (Shannon, 2003). This division of responsibility allows ensuring the systematic management of region's balanced development.

Based on the theoretical analysis results of the SONPO's contribution to RES balanced development through their impact on the economic and social spheres of the regional economy (Artamonova, Bazueva, 2022), based on the postulates of the systemic approach to the management of this process in the framework of this study, the balance of the regional economic system should be understood as such a state in which, due to the participation of all sectors of the regional economy in the production and distribution of socially important benefits, the corresponding level of socially important benefits is ensured.

To ensure the participation of all economic agents in RES management, the state currently uses various methods. According to the form of influence, they can be conditionally arranged into two groups<sup>2</sup>: methods of direct influence (for example, the state participates in financing the infrastructure development: creation of growth centers, industrial parks, etc.) and methods of indirect influence, for example, through the financial (fiscal) system and the creation of institutional conditions that ensure the formation of a certain socio-economic "climate" in the regions to stimulate accelerated development.

At the same time, depending on the nature of the implemented measures, they can be systematized into several groups<sup>3</sup> (Battalov, 2022):

- administrative and regulatory (or organizational and administrative) methods imply direct impact on business entities by means of prohibitions, permits and coercion expressed in laws, orders, etc.;
- economic methods include the impact through the creation of favorable economic conditions for economic entities through tax, budgetary, monetary and other instruments;
- socio-psychological (or information-ideological) methods are aimed at developing and maintaining in society certain value attitudes that contribute to the implementation of management functions, ensuring their effectiveness due to the readiness of the population to perceive changes, approve them and follow them.

As practice shows, the most common RES management tools include target programs, tax and budgetary regulation, strategic planning, etc. at the present stage in Russia. In terms of the participation

<sup>2</sup> Lisyanskiy A.B. (2020). *Regional Economic Management: Study Aid*. Samara: Izdatel'stvo Samarskogo universiteta. P. 22.

<sup>3</sup> Kladova A.A., Neklyudov V.A., Ermolenko M.O. (2019). *Regional Development Management: Organizational and Financial Aspects: Study Aid*. Yaroslavl: OOO "PKF "SOYUZ-PRESS". 114 p.

of non-state economic entities in managing the balanced RES development, it is worth noting that the implementation of regulatory, financial (mainly in the form of grants) and property support measures by the state since 2010 has led to the activation of SONPOs. Researchers record the increasing importance of their inclusion in regional processes as intermediaries between citizens and the state, due to the need to receive feedback that affects the increase in the efficiency and effectiveness of decisions (Medvedeva, 2007; Koval'tsev, 2017).

At the same time, despite the wide range of legal and regulatory documents governing the functioning of the main sectors of the regional economy, SONPOs are not considered as active participants in the development of territories. Their activities are often not taken into account in the programs of strategic development of the regions and are regulated by separate acts, mainly determining the types and amounts of their state support. This allows concluding that SONPOs are not perceived as active subjects of economic activity capable of influencing the balanced development of the region.

### **Materials and methods**

The information base of the work was formed by the data of relevant foreign and Russian studies, as well as the results of surveys commissioned by the Grants Fund of the Governor of the Perm Territory in the period of 2020–2022<sup>4</sup>, the data of focus group research with the heads of SONPOs (8 people), with representatives of municipal authorities and business (5 people), three in-depth expert interviews (the guide included a block of questions concerning the concept of SONPO development as an active

subject of the regional economy)<sup>5</sup>. Qualitative content analysis of research results and interview transcripts was used as a method of data analysis, which made it possible to identify the problems of the external and internal environment that actually form and determine the conditions of effective SONPO activities, and to systematize specific areas of their optimization to improve the management system of balanced RES development.

Taking into account the above provisions concerning the approaches, methods and tools of regional management, it seems important to consider the possibilities of strengthening the activities of SONPOs as active economic entities capable of influencing the balance of RES. For this purpose, we carried out the content analysis of regulatory legal documents and functions of public authorities regulating their activities.

In the practical field, the basis for interaction between non-profit organizations and public authorities is laid down in the Constitution of the Russian Federation, federal laws, legislation of the constituent entities of the Russian Federation, and regulatory and legal acts of local self-government bodies; the specifics of NPO functioning are contained in the provisions of the Civil and Tax Codes, as well as by federal laws and legislative acts of regional and municipal levels. Regulatory and legal regulation of non-profit organizations is carried out by the Ministry of Justice of the Russian Federation. The functions of its territorial subdivisions are limited and are limited to assistance in completing regulatory documents, briefing and informing on innovations in legislation, and joint work in providing regular reporting.

<sup>4</sup> Report on the results of the sociological research "Volunteers in SONPOs of the Perm Territory". Perm, 2021 (the research was conducted using Online Test Pad questionnaires and interviews; as of December 2021, 134 questionnaires were received and 40 semi-structured interviews were conducted); Report on the results of the sociological research "Information Openness of the Perm Territory SONPOs". Perm, 2021 (the sample was 379 non-profit organizations of the Perm Territory (15% of the total number of NPOs), formed using the random selection method).

<sup>5</sup> Focus groups and expert interviews were conducted as part of the draft Concept for the Development of SONPOs in the Perm Territory commissioned by the Grants Fund of the Governor of the Perm Territory and supported by the Department of Public Projects of the Perm Territory Governor's Administration. We acted as developers of this document. The results of the above research were partially published in (Bazueva et al., 2023), therefore the factual data are not presented in this article.

Legislation provides for the support of non-profit organizations by government authorities at the federal, regional and municipal levels. Formally, each Russia's constituent entity has an executive body responsible for interaction with non-profit organizations and provision of support to SONPOs. However, these tasks are performed by different agencies in each region. Their functions include general issues related to the work of SONPOs, including monitoring their activities, keeping registers of SONPOs, collecting and summarizing their proposals and initiatives, as well as implementing support measures. The functions of building cooperation with SONPOs are only a small part of the total volume of work of public authorities. Often the issues of cooperation with SONPOs are additionally transferred to specialized departments – social policy, education or health care. On the one hand, this creates opportunities for implementing joint projects in highly specialized areas and, if successfully implemented, is the basis for long-term cooperation. On the other hand, it makes it difficult to assess the effectiveness of SONPOs in the region, as they are distributed across the areas of responsibility of different ministries and agencies. This complicates the development of cross-sector partnership and exchange of practical experience between SONPOs operating in different sectors of the regional economy.

The above-mentioned determined the provisions of our approach to the development of directions for optimizing the management system of the region's balanced development on the basis of promoting SONPO activities. Based on the available information base, it seems reasonable to focus on the analysis of the current system of RES management on the example of one region – the Perm Territory. This will ensure comprehensiveness and consistency with the results of previous works devoted to the study of barriers to the functioning of SONPOs as active participants in achieving balanced development of RES, and, consequently,

will increase the validity of the proposed directions for optimizing the institutional environment of their functioning.

### **Research results**

To begin with, SONPO development is within the mandate of the Department of Public Projects of the Perm Territory Governor's Administration. The list of main tasks includes the provision of support to SONPOs provided for by the existing regulatory and legal acts, including through the Grants Fund of the Governor of the Perm Territory, as well as the volunteerism development in the region. In addition, the territorial division of the Public Chamber of the Russian Federation and the network of resource centers of NPOs operating in the Territory are involved in supervising the issues of interaction of citizens and non-profit organizations with the regional authorities (*Tab. 2*).

The listed limitations correlate with the barriers to more effective functioning of SONPOs in the region and the use of their potential for the economy (Bazueva et al., 2023). This is manifested in the prevalence of SONPOs in the region with a limited range of realized tasks and a low level of budget diversification, which increases the risks of imbalances in RES development. Qualitative content analysis of the data constituting the information base of the study allowed conditionally identifying three types of SONPOs depending on the characteristics of their target audience, prevailing sources of funding, internal organizational structure, and the breadth of the range of tasks performed (*Tab. 3*).

The mechanism ensuring the transition of an organization from one category to another has not been formed in the Perm Territory. In SONPO management practice, organizational specifics (SONPO type, scale of activity, target audience) are also not taken into account, which reduces the effectiveness of support measures implemented by public authorities, since they, according to experts, should differ depending on the organization's

Table 2. Content of organizations' functions to support and develop SONPOs in the Perm Territory

Organization	Main functions	Limitations
Department of Public Projects	Procurement of goods, works and services by SONPOs on a contractual basis, provision of privileges for payment of taxes and fees, information and consulting, financial (including grant) support, transfer of municipal property for gratuitous use and/or provision of favorable terms of its lease, training of professional staff and volunteers, provision of benefits for legal entities – donors.	Not all forms of support are developed and used in practice; there are no mechanisms to take into account the activities of SONPOs in the strategic development programs of the region
Public Chamber	Promotion of SONPO initiatives, providing information, methodological and other support to SONPOs	The proposals are of a recommendatory nature, as the Public Chamber is not a legal entity; financial dependence on public authorities, which determines the possible impact on the validity of decisions taken
Resource Centers	Providing an information and communication platform, study and replication of successful practices of SONPOs, improving the professionalism of SONPO employees, increasing the level of public trust in SONPOs	Weak resource base of some centers, short-term nature of financing of SONPO projects, competition for resources between centers

According to: (Martynova, 2020; Kosygina, 2021); Official website of the Public Chamber of the Perm Territory. Available at: <https://opk.permkrai.ru/o-palate/obshchestvennaya-palata-permskogo-kрая->; Official website of the Volga Federal District NPO Resource Centers Network. Available at: <https://nko-pfo.ru/o-proekte>

Table 3. SONPO types

SONPO type	Funding sources	Staff	Effects
(notional) local SONPOs	Own funds	Non-permanent, volunteers	Disseminated at the local level, are of a targeted nature, contribute to the formation of an active civic position and cohesion of the population
(notional) project SONPOs	Grant funds	Precarious, employees may be engaged for project implementation	Projects are innovative in nature, offering new ways of solving acute problems or focusing on a narrow target audience; projects are difficult to sustain without external support.
(notional) large SONPOs (generally medium and large)	Diversified budget: own revenues, grants, donations, including from commercial enterprises	Permanent staff of highly skilled employees	The activities are of a long-term nature and are accompanied by noticeable social and economic effects in the territory of presence

Source: own compilation based on qualitative content analysis of the results of expert surveys in the Perm Territory.

development level. Thus, in our opinion, the directions for improving the current methods and tools for regulating the activities of SONPOs can be seen in taking into account both the specifics of SONPOs' activities at each stage of development and the functions performed by them in the regional economic system.

In view of the above, it seems that the management system of region's balanced development can be improved by increasing the efficiency of SONPOs' potential utilization. In the organizational aspect, this is reflected in the conceptual description of a set of interrelated relations between SONPOs and public authorities (*Figure*). Our model is based on the principles actualized taking into account our own approach:

- *the principle of independence* implies the maximum use of the region's internal capabilities to solve social problems;

- *the principle of partnership* means coordination of actions of public authorities and socially oriented non-profit organizations in solving the problems of the region;

- *the principle of systematicity* implies taking into account the system of factors affecting the interaction between public authorities and socially oriented non-profit organizations;

*the principle of targeting* ensures individualization of support forms to SONPOs depending on the prevailing type of organization and needs for specific types of assistance.

We assume that the proposed mechanism will eliminate a number of the most serious barriers in the interaction between SONPOs and other economic agents – to strengthen the systemic and comprehensive nature of their support, which will entail an increase in the effectiveness of their participation in socio-economic processes in the region.

The mechanism involves building direct and inverse relationships between public authorities and regional SONPOs, as well as relies on the cyclical

and step-by-step nature of regulating the activities of SONPOs to involve them in the system of management of balanced development of RES. The set of priority methods and tools is determined by the problems prevailing in the activities of SONPOs depending on the type of organization. Let us recall that we can conditionally distinguish the barriers of the external and internal environment (Bazueva et al., 2023). The first include imperfect legislative framework and administrative difficulties leading to low efficiency of the implemented support programs (especially with regard to local SONPOs); focus on financial instruments of assistance (which leads to the activation of project SONPOs); low level of intra- and inter-sector partnership and reputational capital of SONPOs. Barriers of the internal environment are mainly manifested in insufficient qualification of SONPOs' staff and low quality of management, which makes it difficult for SONPOs to build communication with other economic entities.

It is worth emphasizing that the division of SONPOs into types is rather tentative, since the features of their functioning are specific for each municipality and depend on various factors affecting the intersectoral partnership development (in addition, for example, the problem of unformed reputational capital is faced by SONPOs of any type). Nevertheless, taking into account the expert opinions of representatives of authorities, business and heads of SONPOs, it seems possible to systematize the priority areas of optimization of the institutional environment for each type of SONPOs, as well as to identify the common ones for the sector as a whole (*Tab. 4*).

The effectiveness of implementing the proposed actions in practice is determined by the cyclical nature of stimulating SONPO development and the reasonable choice of the prevailing methods of managerial influence depending on the stage of the organization's life cycle. The tools of influence primarily concern the improvement of the legal and

Organizational and economic mechanism of management of balanced development of RES on the basis of promoting SONPO activities

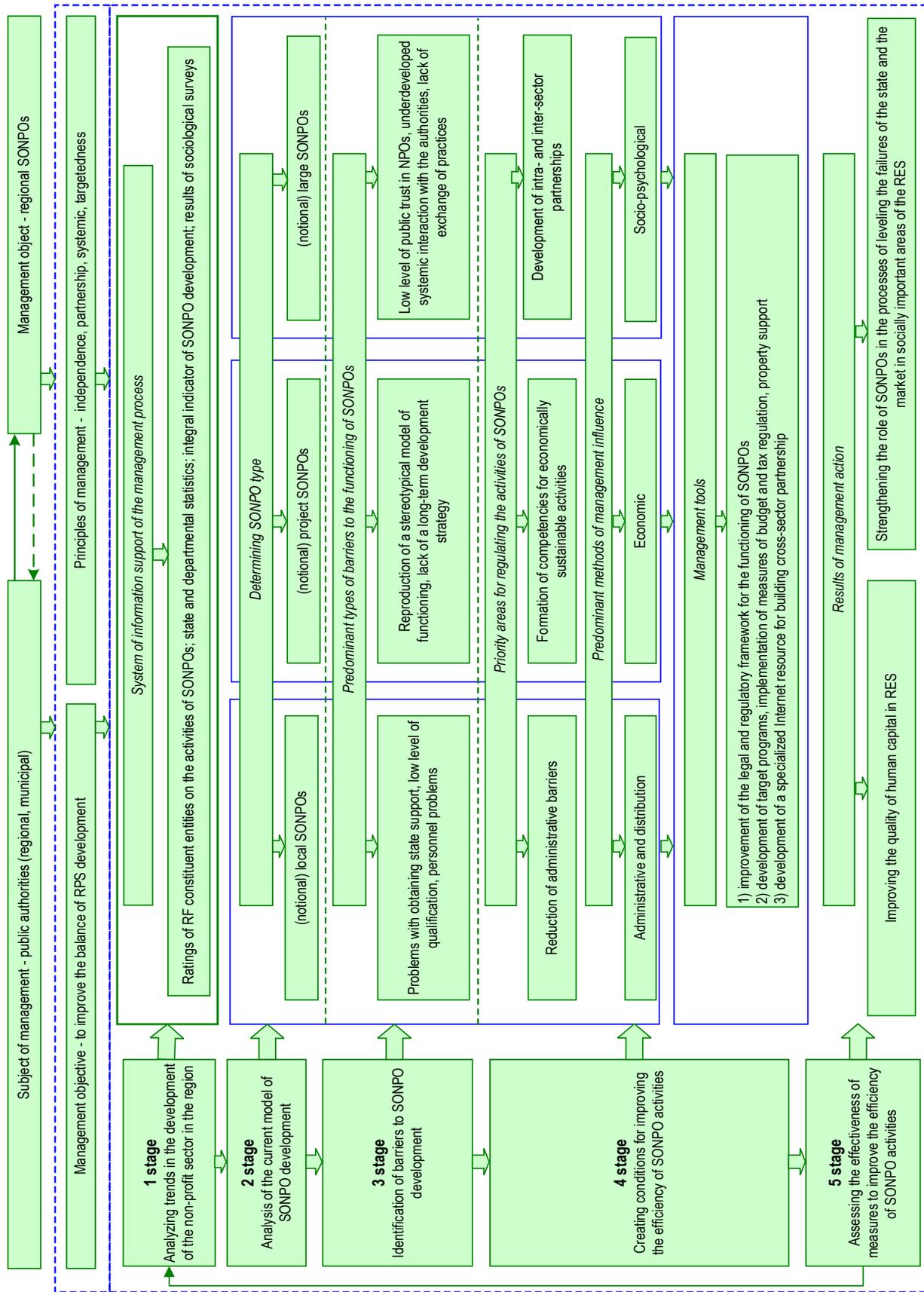


Table 4. Directions for optimizing the external and internal environment of SONPOs to create conditions for their sustainable development in the region

SONPO type	Priority directions	
	External environment	Internal environment
(notional) local SONPOs	<b>Objective - reduction of administrative barriers</b>	
	Unification of programs to support SONPOs at the regional and municipal levels; development of criteria for identifying the maturity level of SONPOs and the system of necessary forms of support depending on the stage of the organization's life cycle in order to build long-term strategies for their development; provision of state support for SONPO startups, creation of NPO-incubators	Providing systemic support to newly registered NPOs
(notional) project SONPOs	<b>Objective - development of competencies for economically sustainable activities</b>	
	Consideration of the possibility of extending support measures for small and medium-sized businesses to NPOs; development and implementation of a system of banking and tax support for SONPOs and their donors	Increasing the professionalism and efficiency of SONPOs; stimulating the process of generation and diffusion of social innovations, including to ensure budget diversification
(notional) large SONPOs	<b>Objective - development of intra- and inter-sector partnerships</b>	
	Formation of a model of cooperation between SONPOs and executive authorities at the regional and municipal levels on a systemic and long-term basis; increasing the importance of the controlling and expert function of SONPOs (public control); replication of best practices of SONPO activities	Creating conditions for forming and promoting the image of a volunteer, strengthening the importance of his/her role for the development of SONPOs and the region as a whole; creation of a system of training for representatives of executive authorities, business and mass media on interaction with NPOs in cooperation with the authorities
<b>Purpose - to create conditions for the development of SONPOs on a systematic and long-term basis</b>		
Common to all SONPO types	Monitoring of activities and forms of support for SONPOs in the region and municipalities according to a unified system of indicators; optimization of the reporting system of SONPOs; increasing the transparency of SONPO activities, including the development of public reporting and the organization of regular monitoring of the effectiveness of their activities; ensuring information openness of the implemented forms of support for SONPOs and areas of activity of resource centers; strengthening the role of resource centers in the region to develop a system of horizontal links and eliminate gaps in the process of interaction between the government, SONPOs, business and population, as well as between different SONPOs; development of a system to promote a new image of SONPOs, including through increased interaction with the media; introduction of a system of multilateral evaluation of the level of performance of implemented projects: by beneficiaries, experts, representatives of the non-profit sector, on the one hand, and self-assessment by the implementing organization, on the other hand.	Permanent monitoring of the needs of SONPOs to identify priority forms and instruments of support, including taking into account the stage of the organization's life cycle
Source: own compilation.		

regulatory framework of functioning, regulation of support measures to meet the needs of specific SONPOs. In addition, to ensure effective intra- and inter-sectoral interaction in the region, we propose to create a communication channel, access to which should be open to each SONPO type. The most acceptable format seems to be a specialized Internet resource, the structure of which reflects the powers of each participant. It seems that the creation of the resource should be carried out by the specialized department of the region together with the local public chamber, key regional operators of financial support to SONPOs and resource centers, since these participants have the maximum understanding of the situation (*Tab. 5*).

The proposed resource will ensure the creation of institutional conditions for the formation of opportunities for the development of all SONPO types: local SONPOs will have access to complete information on the activities of the third sector as a whole, as well as on the opportunities formed in

the region for its development; project SONPOs will be able to focus on the commercialization of projects and consulting support for their implementation in the long term; for medium and large SONPOs, the platform is a means to the transfer knowledge, skills and experience to novice colleagues. The resource can be easily scaled to all regions of the country, which will, on the one hand, unify the system of interaction between public authorities and SONPOs, on the other hand, create the basis for the development of intra-sectoral interregional cooperation. The conditional delimitation of the functionality of all participants of socio-economic processes in the region will not only systematize the work concerning the activities of SONPOs as economic agents contributing to the achievement of the balance of RES, but will also allow involving small SONPOs in the general system of the third sector functioning, thereby institutionalizing local civic initiatives and scaling the practices of non-associated participation.

Table 5. Key sections of the Internet resource for SONPOs

Section	Request granularity	Support format	Responsible for section
Legal support	Issues of registration, liquidation, statutory activities, tax legislation, labor relations, etc.	Methodological aids, online consultation, link to contacts of specialized specialists	Resource centers
Accounting support	Reporting issues, assistance with report preparation, etc.	Methodological aids, online consultation, link to contacts of specialists	Resource centers
Advising on participation in competitions	Information on types of competitions, assistance in preparing a grant application, etc.	Methodological aids, link to the list of tenders open for bids	Line agency, financial support operators, resource centers
Review of experience of other SONPOs	Fundraising issues, ways to attract and retain volunteers, examples of building work with business, review of practices and realized projects by areas of activity, etc.	Methodological aids, links to resources with descriptions of practices, to platforms with a volunteer base, to websites of commercial organizations implementing corporate social responsibility projects	Resource centers, public chamber
Partnership programs implemented jointly with business structures	Information on commercial organizations implementing corporate social responsibility (CSR) programs, social enterprises, recommendations on commercialization of social projects, etc.	Methodological aids, guides on developing commercial projects, links to contact details of companies implementing CSR partnership programs	Specialized agency, resource centers

Source: own compilation.

The implementation of the proposed mechanism, in our opinion, will create favorable conditions for the effective activity of SONPOs, which will lead to an increase in the human capital quality as a “second nature” factor. Research results show that the importance of SONPOs in this aspect is extremely high, as they have a targeted impact on the reproduction, development and realization of human capital by reducing inequality in the availability of socially important benefits, thus can act as a factor in smoothing the failures of the market and the state, improving the quality of life (Volkova, 2010; Goryacheva, 2018; Wan, 2013; Roberts et al., 2021). In turn, human capital allows compensating to some extent for the insufficient development of physical capital (Kapeliushnikov, 2003; Descy, Tessaring, 2004; Pelinescu, 2015) and thus act as a factor in ensuring the balance of RES development.

### Conclusion

The research has shown that, despite the gradually increasing importance of SONPOs in the regional economic system, their potential is not fully realized. Due to the unresolved nature of many

problems, SONPOs are perceived mainly as an object of state support, primarily financial. In our opinion, this position of the authorities limits the opportunities for using the resource of SONPOs in the region. It is necessary to change the approach to the activities of these organizations in terms of forming their perception as active economic entities. This requires the improvement of institutional conditions of SONPOs' activities and their inclusion in the organizational and economic mechanism for managing the balanced development of RES. For this purpose, this study identifies specific directions for optimizing the external and internal environment of SONPOs (including depending on the stage of the organization's life cycle), which can lead to the strengthening of the effects of their activities, as well as the management system of balanced development of RES on the basis of stimulating their activities. The formulated proposals are based on the conceptual analysis of theoretical approaches devoted to the involvement of non-state participants in the processes of ensuring balanced development of RES, as well as the practical experience of SONPOs functioning in the regions.

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## Informal Employment and Structural Imbalances in the Labor Market



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**Abstract.** The paper analyzes principles and mechanisms related to the development of informal employment, including at the regional level, where the accelerated growth of the informal sector is mainly caused by low living standards and lack of jobs, including in enterprises and organizations. The lack of skills, which is often a key aspect in the formation of labor shortages in regional markets, is mediated by relatively low budget expenditures on human capital. The hypothesis of the study is that structural imbalances in the demand for labor and its supply, one of the indicators of which is the extent of informal employment, determine the tension in the labor market. The aim of the work is to theoretically substantiate and empirically confirm the relationship between the extent of informal employment and the level of economic development, and to identify opportunities to reduce tension in the labor market. Statistical basis of the study includes Rosstat data; research tasks were solved using economic and mathematical analysis methods. The results obtained by analyzing statistical series confirmed the research hypothesis. In conclusion, we consider the possibility of structural and technological maneuver in economic sectors as an important factor in overcoming tension in the labor market. In particular, due to the labor-saving nature of such a maneuver, it is possible to significantly increase labor productivity by at least 15 million jobs. Construction and trade may become priority industry areas for workplace modernization in the coming years. The results of our calculations are considered as a preliminary assessment of the possibilities of labor productivity growth at the macro level, involving the development of special sectoral and regional programs to increase labor productivity, which is the practical significance of the results obtained.

**Key words:** informal employment, hidden employment, labor productivity, population incomes, labor remuneration, qualifications, regional labor markets, labor market tension, structural and technological maneuver.

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## Introduction

In the context of an increasing labor shortage and record low unemployment rates, it is extremely important to substantiate the possibilities of economic growth, as well as factors that can compensate for the tension in the Russian labor market. According to our estimates, more than half of the employed population have a high potential for productivity growth (Uzyakova, Shirov, 2024)<sup>1</sup>. At the same time, the greatest potential for labor productivity growth is concentrated in the informal (hidden) economy, where the number of employees accounts for up to 30% of the total, and labor productivity is 20–25% lower than in the corporate sector (Uzyakova, 2022). In this case, the high a priori estimate of the potential for labor productivity growth is mainly due to the low initial level of labor productivity in this area, as well as the assumption of a gradual equalization of labor productivity in various sectors of the economy.

The level and changes of informal employment depend on economic growth, the number of jobs at the corporate sector, wages at enterprises and organizations, government policies to legalize the shadow economy, etc.<sup>2</sup> (Gimpelson, Kapeliushnikov, 2014; Nekipelova, 2019; Tumunbayarova, Antsiferova, 2018; Salin, Narbut, 2017). Informal employment is not always a factor that worsens proportions in the labor market (Chen, Xu, 2017). The shadow sector is often the only way to get a job for low-skilled workers, especially in regions with low living standards (Tumunbayarova, Antsiferova, 2018; Kunitsyna, Dzhioev, 2023; Salin, Narbut, 2017). However, this adaptive function of the labor market suggests that the entire economic system is not perfectly regulated (Gërxhani, 2004): the lack of high-quality (high-performance) jobs at

the corporate sector, coupled with low economic growth rates, leads to a slowdown in income growth for the population and the state. And even introduction of a special tax regime for the self-employed, which provides for the unveiling of part of hidden employment, does not guarantee an increase in household incomes (according to our calculations, wages in the informal sector of the economy are 30% lower than in the corporate sector), although it provides some increase in government revenues.

An increase in wages in Russia is important not only for workers in the informal sector. There are industries and entire regions where wages are significantly lower than the Russian average. As a rule, the unemployment rate is high in such regions. In particular, some studies (Tumunbayarova, Antsiferova, 2018; Kunitsyna, Dzhioev, 2023; Salin, Narbut, 2017) reveal an increase in the level of informal employment with an increase in the unemployment rate. In this case, informal employment acts as a mechanism that mitigates social tension in the absence of jobs at enterprises. Consequently, with an increase in the number of jobs at the corporate sector and a decrease in unemployment, informal employment can be expected to decrease. International comparisons also demonstrate a similar trend<sup>3</sup> (Soto, 1995; Nekipelova, 2019; Hart, 1973; Voicu, 2012), though the scale of informal employment can vary significantly across countries and regions (Chen, Xu, 2017).

A significant place among the factors influencing the level and changes of informal employment is given to social, tax and other economic policies of the government, including migration policy (Kunitsyna, Dzhioev, 2023; Sim et al., 2011).

<sup>1</sup> These include, in particular, part-time employees, low-skilled workers, as well as those employed at jobs with high automation potential, and informal employment.

<sup>2</sup> International Labour Office (2002): Decent Work and the Informal Economy; Report of the Director-General; International Labour Conference, 90th Session; Report VI; International Labour Office, Geneva.

<sup>3</sup> International Labour Office (2002): Decent Work and the Informal Economy; Report of the Director-General; International Labour Conference, 90th Session; Report VI; International Labour Office, Geneva.

A number of publications<sup>4</sup> (Gimpelson, Kapeliushnikov, 2012; Nekipelova, 2019) hypothesize that the extent of informal employment is associated with a lack of high-quality jobs at the formal sector (especially at the regional level), including due to institutional obstacles to the development of small and medium business (Gërkhani, 2004). Predominance of the proportion of hired by individuals in the structure of informal employment (62% in 2023) confirms this hypothesis. The decrease in the proportion of the self-employed indicates a deterioration in the structure of the Russian labor market, since the earnings of informally employed hired people are significantly lower than those of those employed in organizations, while the earnings of the informal self-employed are higher than the corresponding indicators in the organized sphere (Gimpelson, Kapeliushnikov, 2012).

In our study, we assume that the level of informal employment, including in the regions of Russia, directly depends on the nature of economic development, which determines, on the one hand, changes of introduction of high-quality jobs (demand for labor), and, on the other hand, growth of incomes of the population and the state, creating prerequisites for improving quality of human capital (labor supply). Structural imbalances in the demand for labor and its supply, in turn, are becoming important factors determining the magnitude of tension in regional labor markets.

The aim of the work is to substantiate the relationship between the extent of informal employment as one of the indicators of the scale of structural imbalances and the level of economic development, and to formulate proposals to reduce tension in the labor market. Based on the stated aim, the tasks of the study are to assess the retrospective changes of informal employment in Russia by category; to study the relationship of informal

employment with the level of regional economic development and incomes of the population; and also to assess the possibilities of eliminating sectoral structural and technological imbalances to reduce tension in the Russian labor market.

#### **Methodological features of the formation of informal employment categories**

For the purposes of this study, we will consider employment in the informal sector as categories methodologically formulated by Rosstat<sup>5</sup>. However, to determine the total number of the informally employed, which also includes the employed in informal jobs at the formal sector, we will use a balance method to estimate the amount of hidden (informal) employment in organizations.

The description of the calculation is as follows: if from the total number of people employed in enterprises and organizations (data from labor force surveys (LFS)) we identify categories that are not included in enterprise statistics (military personnel, those on parental leave to care for a child under 1.5 years old, adjustment for part-time employment<sup>6</sup>), then, based on the overall balance using the difference, hidden employment in the corporate

<sup>5</sup> According to the Rosstat methodology (On the approval of the main methodological and organizational provisions for conducting a sample survey of the labor force: Rosstat Decree 707, dated December 29, 2023. Available at: <https://rosstat.gov.ru/storage/mediabank/pr707-29122023.pdf>) the employed in the informal sector of the economy include the employed population aged 15 years and older, taking into account their main job:

- 1) entrepreneurial activity without a legal person status,
- 2) hired by individuals, individual entrepreneurs, or employed at a farm,
- 3) in self-owned household producing agricultural, forestry, hunting and fishing products for sale or exchange.

At the same time, the employed in the formal sector include the employed in enterprises and organizations with a legal person status.

<sup>6</sup> On the approval of the main methodological and organizational provisions for conducting a sample survey of the labor force: Rosstat Decree 707, dated December 29, 2023. Available at: <https://rosstat.gov.ru/storage/mediabank/pr707-29122023.pdf>; On the approval of the Methodology for calculating the balance of labor resources and estimating labor costs: Rosstat Decree 647, dated September 29, 2017. Available at: <https://rosstat.gov.ru/storage/mediabank/pr647-17.pdf>

<sup>4</sup> Ibidem.

sector can be estimated. Considering P4 forms, as well as Rosstat statistics (LFS), the level and changes of informal employment (according to the Rosstat methodology and including hidden employment, respectively, in enterprises) are demonstrated in *Table 1* and *Figure 1*.

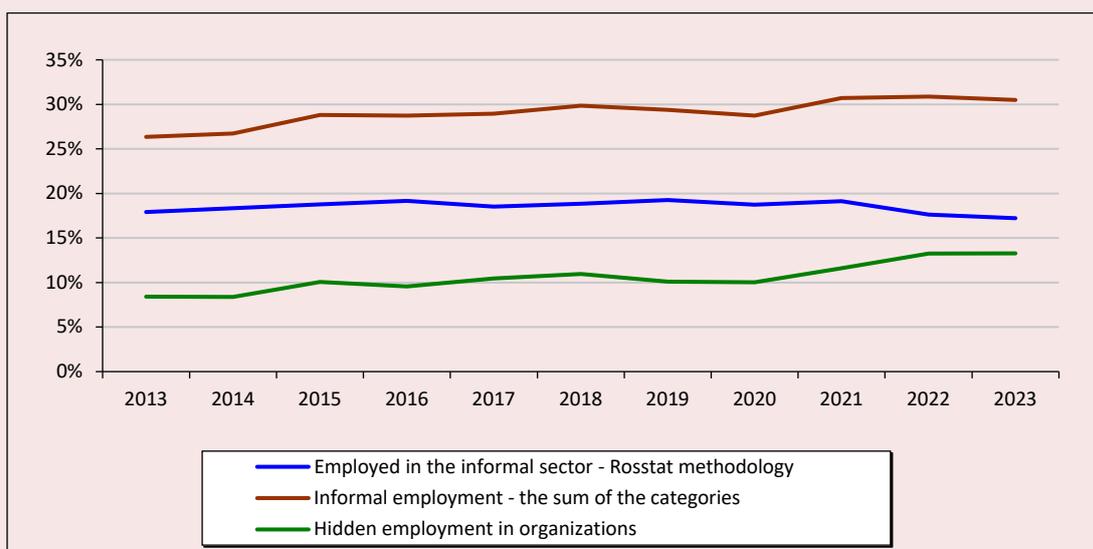
In 2023, the proportion of people employed in the informal sector (according to the Rosstat methodology) was 17.3% of the total number of people employed, but it increases to 30.6% if hidden employment in enterprises and organizations is included.

Table 1. Balance of estimates of labor force surveys (LFS) and enterprise statistics (form P4), million people

Indicator	2015	2020	2021	2022	2023
Total (LFS data)	72.3	70.6	71.7	72.0	73.5
In enterprises and organizations with a legal person status (LFS), including:	58.8	57.4	58.0	59.4	60.9
The average number of employees in a full range of organizations (enterprise statistics, form P4)	44.4	43.3	43.1	42.9	44.1
Employees in organizations included in the statistics of LFS, but not included in the average number (military personnel, those on parental leave to care for a child under 1.5 years old, part-time employment)	7.1	7.0	6.6	6.9	7.0
<b>Hidden employment in organizations (balance of estimates of LFS and enterprise statistics), calculation</b>	<b>7.3</b>	<b>7.1</b>	<b>8.3</b>	<b>9.5</b>	<b>9.8</b>
<b>People employed in the informal sector, Rosstat methodology (LFS), including:</b>	<b>13.6</b>	<b>13.2</b>	<b>13.7</b>	<b>12.7</b>	<b>12.7</b>
entrepreneurial activity without a legal person status	3.4	3.6	3.7	3.9	4.1
hired by individuals, individual entrepreneurs, or employed at a farm	8.5	8.7	9.1	7.8	7.7
in self-owned household	1.7	1.0	0.9	0.9	0.8

Sources: The results of sample surveys of the labor force over a number of years. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>; own calculation.

Figure 1. Proportion of various types of informal employment to the total value, % of the total value



Sources: The results of sample surveys of the labor force over a number of years. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>; own calculation.

According to Figure 1, employment in the informal sector in the Rosstat methodology has been decreasing in recent years, while the amount of hidden employment in enterprises and organizations, on the contrary, has been increasing. This leads to a rise in the total value of informal employment. Indeed, if we keep in mind that the labor shortage that has formed in the market is associated with a shortage of workers in enterprises and organizations (as evidenced by a significant increase in the real wages of employees of organizations – by 7.8% in 2023, as well as the fact that almost the entire increase in the total number of employees in 2023 accounted for the growth of employment in the corporate sector), the decrease in employment in the informal sector (to the greatest extent – in self-owned households, by 122 thousand people) is a transfer of employed people from the informal to the formal sector of economy under the influence of an increase in the number of jobs, in shifts or wages. However, judging by the fact that hidden employment in organizations has also increased, it can be assumed that all this transfer has remained in the shadow sector. Moreover, it is estimated that hidden employment in organizations has increased by 210 thousand people over the past year, while employment in the informal sector has decreased by only 24 thousand people.

Our calculations demonstrate that if wages of the informally employed increased to the level of employees in organizations, the wage fund would grow by 9.8 trillion rubles (before personal income tax, calculated for 2023). The main question is how and due to what structural, technological and institutional changes in the economy can a significant increase in labor productivity and wages of informal workers be achieved?

#### **Regional scale**

We propose to substantiate the relationship between the employment rate in the informal sector and the level of regional economic development based on Rosstat statistics. According to *Table 2*,

regions with lower per capita incomes and lower per capita gross regional product have a large number of informally employed people. In other words, there is an inverse relationship between indicators of informal employment and the level of economic development of the region.

A higher level of development in a region implies high economic and industrial activity (Moscow, Saint Petersburg, Nenets Autonomous Area, Murmansk Region, etc.) and, consequently, greater opportunities for creation and reproduction of an employment system and human capital of comparable quality. Under these conditions, the imbalances in the demand for labor and its supply are minimal. In regions with a low level of economic development, for example, where the per capita gross regional product does not exceed 45% of the Russian average (regions of the North Caucasus Federal District, the Republic of Tyva, the Republic of Buryatia, etc.), there are less such opportunities: absence or lack of large-scale production (corporate sector) leads to the expansion of forms of non-traditional labor relations.

Practically, a model of economic relations is being consolidated, in which low incomes of an economy become the cause and consequence of low quality (productivity) jobs.

Consequently, conditions for increasing incomes of the informally employed depend on government policies promoting capacity extension, development of the corporate sector and creation of high-paid jobs, especially in regions with low living standards, as well as measures to support socially vulnerable groups of workers and monitor compliance with labor legislation.

Regional distribution of informal employment is of particular interest, as it is a direct consequence of regional differences in the distribution of wages (incomes of the population). An analysis of the spatial distribution of incomes of the population can be useful in terms of assessing prospects for development of regional labor markets and growth

Table 2. Employed in the informal sector and the relative level of per capita monetary income and per capita gross regional product by region of the Russian Federation

Region	Employed in the informal sector, % of the total employed population, 2023	Average per capita monetary income of the population (relative to the Russian average), %, 2022	Gross regional product per capita (relative to the Russian average), %, 2022
Regions with the largest informal employment (more than 30%)			
Republic of Dagestan	44.1	74	31
Republic of Ingushetia	54.4	46	18
Kabardino-Balkarian Republic	44.5	67	28
Karachayev-Circassian Republic	43.0	50	28
Republic of North Ossetia-Alania	39.7	65	35
Chechen Republic	41.7	68	21
Stavropol Territory	34.2	61	44
Altai Territory	37.2	62	39
Republic of Tyva	32.2	51	32
Republic of Buryatia	31.2	73	42
Regions with the least informal employment (less than 10%)			
Moscow	4.9	212	233
Nenets Autonomous Area	5.4	232	1101
Murmansk Region	7.3	139	179
City of Saint Petersburg	6.2	141	211
Khanty-Mansi Autonomous Area – Yugra	9.0	141	401
Chukotka Autonomous Area	2.7	255	329
Sources: Regions of Russia. Socio-economic indicators, over a number of years. Available at: <a href="https://rosstat.gov.ru/folder/210/document/13204">https://rosstat.gov.ru/folder/210/document/13204</a> ; The results of the sample survey of the labor force, 2023. Available at: <a href="https://rosstat.gov.ru/folder/11110/document/13265">https://rosstat.gov.ru/folder/11110/document/13265</a> ; own calculation.			

opportunities of the employed at the regional level. Ranking of the country's constituent entities by the amount of informal employment demonstrates that the number of poor regions in the country (in terms of incomes of the population) is large. If poor regions include those with the average per capita income below 70% of the Russian average, and in rich regions it is above 120%, respectively, then we get the following results (*Tab. 3*).

The presented ranking of regions is rather arbitrary: such tiers were chosen in order to visually simplify the analytical table. It should be said, however, that there are a large number of regions that are quite poor in terms of income, with

borderline values near 70% of the Russian average per capita income. These regions include the Vladimir Region (72%), the Ryazan Region (74%), the Novgorod Region (75%), the Pskov Region (74%), the Republic of Dagestan (74%), the Republic of Udmurtia (71%), the Kirov Region (72%), the Chelyabinsk Region (74%), the Kemerovo Region (73%), the Republic of Buryatia (73%). Nationwide, only 19 regions have per capita incomes equal to the Russian average or higher than it, while the rest of the regions are lagging behind in development and have certain risks of realizing their social potential, among others.

As follows from Table 3, in regions with low per capita incomes, there are also low values of paid wages for employees in organizations, even after adjusting for regional price levels. Here, the informal sector (and the possibility of additional earnings) becomes an important factor promoting generation of additional income for the population.

Table 3. The relative level of the average monthly paid wage of employees in organizations in the regions of the Russian Federation, % of the Russian average level

	Average monthly paid wage of employees in organizations, 2022	Adjusted for price differences, 2022	Employed in the informal sector, % of the total, 2023	Unemployment rate, %
The poorest regions (less than 70% of the Russian average per capita income)				
Republic of Kalmykia	56	60	26.7	8.1
Republic of Crimea	64	66	28.0	5.0
Astrakhan Region	73	79	22.1	7.0
Volgograd Region	68	75	23.2	3.5
Republic of Ingushetia	50	56	54.4	28.5
Kabardino-Balkarian Republic	54	57	44.5	10.0
Karachayevo-Circassian Republic	54	59	43.0	9.8
Republic of North Ossetia-Alania	56	64	39.7	11.9
Chechen Republic	52	55	41.7	11.0
Stavropol Territory	63	65	34.2	4.3
Republic of Mari El	62	70	16.7	3.6
Republic of Mordovia	61	70	17.5	3.6
Chuvash Republic	64	72	20.1	3.2
Orenburg Region	67	77	24.0	3.5
Penza Region	63	72	27.1	3.7
Kurgan Region	64	71	21.0	6.5
Republic of Altai	67	65	37.2	9.8
Republic of Tyva	79	88	32.2	9.5
Republic of Khakassia	83	85	24.9	3.3
Altai Territory	60	62	24.0	3.7
The richest regions (more than 120% of the Russian average per capita income)				
Moscow Region	108	97	11.6	3.1
Moscow	192	136	4.9	2.2
Nenets Autonomous Area	164	134	5.4	7.4
Murmansk Region	134	114	7.3	4.8
City of Saint Petersburg	133	119	6.2	1.8
<b>Tyumen Region</b>	<b>145</b>	<b>138</b>	<b>13.0</b>	<b>2.7</b>
Khanty-Mansi Autonomous Area – Yugra	149	135	9.0	2.0
Yamal-Nenets Autonomous Area	201	169	12.2	1.7
<b>Republic of Sakha (Yakutia)</b>	<b>148</b>	<b>117</b>	<b>18.8</b>	<b>6.5</b>
<b>Kamchatka Territory</b>	<b>158</b>	<b>108</b>	<b>13.8</b>	<b>2.9</b>
<b>Magadan Region</b>	<b>186</b>	<b>134</b>	<b>16.1</b>	<b>4.1</b>
<b>Sakhalin Region</b>	<b>157</b>	<b>129</b>	<b>19.7</b>	<b>4.2</b>
Chukotka Autonomous Area	215	129	2.7	1.9
Source: Regions of Russia. Socio-economic indicators, over a number of years. Available at: <a href="https://rosstat.gov.ru/folder/210/document/13204">https://rosstat.gov.ru/folder/210/document/13204</a> ; own calculation.				

Informal employment is also high in some “rich” regions, such as the Tyumen Region, Yakutia, the Kamchatka Territory, the Magadan and Sakhalin regions. This situation may be related to the lack of jobs at existing enterprises and organizations, as well as to the structural imbalance in the demand for labor and its supply in the labor market (Korovkin et al., 2010; Korovkin et al., 2016).

In addition, in some regions with a high level of informal employment, the unemployment rate is high. Therefore, there is a greater potential for capacity extension and increasing the number of people employed due to both the contraction of the informal sector and the reduction of unemployment. There is a potential for expanding production in neighboring territories, taking into account the possible migration of the population to income-generating regions.

It is appropriate to discuss the issue of quality of the workforce in question. Perhaps the level of education and qualification of this labor force is that it cannot apply for more productive, and therefore higher-paid jobs. Indeed, as a rule, the level of education and the quality of human capital decreases along with a decrease in the income of the population, respectively, and opportunities for obtaining high-quality educational and healthcare services (Solow, 1956; Suvorov et al., 2014). It is the quality of human capital that is often the main reason why production facilities are forced to attract skilled labor from other, more remote regions.

Let us consider indicators of household and government expenditures on education and healthcare, which traditionally represent areas that form human capital (*Tab. 4*).

It is easy to notice a significant reduction in healthcare expenditure in the budget structure since 2010 in all the regions considered, though it is the greatest in regions with low living standards. In general, budget expenditures on human capital are decreasing over the period 2010–2022. And this is

a significant problem of modern Russian society: the state does not demonstrate proper interest in the development of high-quality human capital (Mikheeva, 2021), and even more so in maintaining its efficiency (in all regions, the proportion of expenditure on healthcare is significantly lower than on education). If we turn, for example, to statistics on developed countries, we will see that healthcare expenditure is significantly higher than spending on education (total expenditure: capital and total current, from all sources): in the United States – by 10.3 p.p. of GDP, in Germany – by 6.9 p.p., in Japan – by 6.6 p.p., in Canada – by 5.2 p.p.<sup>7</sup>

Population expenditure on healthcare has decreased slightly over the period 2010–2022. It should be noted that population expenditures on education and healthcare in the expenditure pattern do not have significant differences depending on the living standard of the population. The population of poorer regions spends even slightly more on education in the expenditure pattern than the population in regions with a high living standard.

Government expenditure not only builds the image of the region, the image of its future development, it should create a favorable economic and social environment in which an attractive investment image of the region, confidence of the native population in the future, stable work and wages will be developed. This requires support not only for social programs, but also for programs to attract investment, develop transport and construction infrastructure. On the one hand, in regions with low wages, it is

<sup>7</sup> OECD data. Available at: [https://data-explorer.oecd.org/vis?df\[ds\]=dsDisseminateFinalDMZ&df\[id\]=DSD\\_EAG\\_UOE\\_FIN%40DF\\_UOE\\_INDIC\\_FIN\\_GDP&df\[ag\]=OECD.EDU.IMEP&df\[vs\]=1.0&dq=..ISCED11\\_1T8.\\_T%2BS13%2BS1D\\_NON\\_EDU%2BS2.INST\\_EDU...&pd=2015%2C2020&to\[TIME\\_PERIOD\]=true&vw=tb,https://data-explorer.oecd.org/vis?lc=en&fs\[0\]=Topic%2C1%7CHealth%23HEA%23%7CHealth%20expenditure%20and%20financing%23HEA\\_EX P%23&pg=0&fc=Topic&bp=true&snb=4&vw=tb&df\[ds\]=dsDisseminateFinalDMZ&df\[id\]=DSD\\_SHA%40DF\\_SHA&df\[ag\]=OECD.ELS.HD&df\[vs\]=1.0](https://data-explorer.oecd.org/vis?df[ds]=dsDisseminateFinalDMZ&df[id]=DSD_EAG_UOE_FIN%40DF_UOE_INDIC_FIN_GDP&df[ag]=OECD.EDU.IMEP&df[vs]=1.0&dq=..ISCED11_1T8._T%2BS13%2BS1D_NON_EDU%2BS2.INST_EDU...&pd=2015%2C2020&to[TIME_PERIOD]=true&vw=tb,https://data-explorer.oecd.org/vis?lc=en&fs[0]=Topic%2C1%7CHealth%23HEA%23%7CHealth%20expenditure%20and%20financing%23HEA_EX P%23&pg=0&fc=Topic&bp=true&snb=4&vw=tb&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD_SHA%40DF_SHA&df[ag]=OECD.ELS.HD&df[vs]=1.0)

Table 4. Expenditures on education and healthcare in the structure of consumer and consolidated budgets of the constituent entities of the Russian Federation, 2022

Region	Household expenditure on education		Household expenditure on healthcare		Expenditure of the constituent entity's consolidated budget on education		Expenditure of the constituent entity's consolidated budget on healthcare	
	% of total	p.p. 2010–2022	% of total	p.p. 2010–2022	% of total	p.p. 2010–2022	% of total	p.p. 2010–2022
The poorest regions (less than 70% of the Russian average per capita income)								
Republic of Kalmykia	3.5	1.0	1.9	0.7	32.5	7.9	6.8	-6.0
Republic of Crimea	4.7	4.7	1.7	1.7	16.7	-8.6*	7.8	-9.6*
Astrakhan Region	3.5	0.7	1.4	0.0	22.8	0.8	9.1	-7.2
Volgograd Region	4.7	0.8	1.3	-0.2	22.1	-2.1	10.5	-2.4
Republic of Ingushetia	1.5	1.0	0.0	-2.1	42.4	23.6	4.5	-4.6
Kabardino-Balkarian Republic	2.5	-0.3	0.4	-1.0	26.5	2.2	9.2	-1.4
Karachayevo-Circassian Republic	5.6	2.7	1.3	-0.1	23.9	3.7	4.8	-3.8
Republic of North Ossetia-Alania	3.9	0.0	1.8	1.0	26.1	2.6	6.9	-3.4
Chechen Republic	3.0	2.2	1.0	1.0	33.1	15.2	3.9	-8.8
Stavropol Territory	4.6	0.3	1.6	0.2	27.9	2.6	8.4	-1.6
Republic of Mari El	4.7	2.2	1.3	0.0	24.0	0.6	6.7	-4.6
Republic of Mordovia	5.3	2.4	1.1	-0.4	21.6	8.1	7.2	-7.9
Chuvash Republic	3.5	-0.2	1.5	-1.1	28.4	5.4	7.2	-3.7
Orenburg Region	4.1	1.3	0.9	0.0	27.0	3.4	8.5	-5.7
Penza Region	5.0	0.9	1.3	0.4	27.4	5.6	10.0	-0.7
Kurgan Region	4.1	1.3	1.1	-0.3	33.0	7.5	6.9	-4.6
Republic of Altai	4.1	1.2	1.7	0.3	30.7	6.5	5.0	-4.8
Republic of Tyva	2.2	0.3	1.8	-1.2	37.1	10.0	5.4	-6.5
Republic of Khakassia	4.5	1.0	1.1	0.0	30.8	-1.9	8.9	-1.3
Altai Territory	5.3	2.2	1.0	-0.5	28.8	1.0	8.3	-3.9
The richest regions (more than 120% of the Russian average per capita income)								
Moscow Region	3.9	1.1	2.2	0.9	25.2	3.1	12.4	-1.7
Moscow	2.7	0.3	1.7	0.6	12.7	-5.4	11.9	1.6
Nenets Autonomous Area	2.2	-0.9	1.6	0.1	19.6	-9.6	7.4	-0.7
Murmansk Region	4.8	1.9	1.1	-0.1	26.3	-1.8	9.2	-1.2
City of Saint Petersburg	3.5	0.6	0.8	-0.1	21.9	3.9	12.7	-4.6
Tyumen Region	3.3	1.2	1.8	0.6	18.7	6.3	13.9	3.5
Khanty-Mansi Autonomous Area – Yugra	3.0	1.0	2.5	1.8	28.4	2.5	15.7	-4.2
Yamal-Nenets Autonomous Area	4.5	2.9	1.7	0.5	22.5	-0.3	12.3	1.0
Republic of Sakha (Yakutia)	4.9	2.7	1.2	-1.4	27.7	-0.2	5.6	-4.3
Kamchatka Territory	2.4	-0.3	1.2	0.5	20.9	-1.3	8.1	-1.5
Magadan Region	2.9	0.5	1.7	1.0	24.9	4.9	12.0	-5.7
Sakhalin Region	4.1	1.0	1.9	1.0	17.7	-1.1	11.1	-3.9
Chukotka Autonomous Area	2.6	1.8	0.6	0.4	15.8	-3.7	6.6	2.8
*2015–2022 Source: Regions of Russia. Socio-economic indicators, over a number of years. Available at: <a href="https://rosstat.gov.ru/folder/210/document/13204">https://rosstat.gov.ru/folder/210/document/13204</a> ; own calculation.								

advantageous to create new capacities and build production facilities – labor costs will be relatively low. On the other hand, in such regions there may not be the main factors contributing to industrial development, namely transport and logistics infrastructure, construction industries, and the properly skilled labor force.

The scale of misalignment between labor supply and demand for it in regional markets can be estimated using the tension coefficient<sup>8</sup>, which is calculated as the ratio of the average annual number of unemployed to the average annual number of vacancies reported by employers to employment services<sup>9</sup> (*Tab. 5*).

Table 5. Tension coefficients in regional labor markets, 2022

Region	Number of unemployed, thousand people	Demand for employees, reported by employers to employment services, thousand people	Tension coefficient, value	Place in the RF
Regions with the highest tension coefficient				
Nenets Autonomous Area	1.8	0.5	3.36	76
Republic of Kalmykia	10.9	1.6	6.84	78
Astrakhan Region	35.7	10.0	3.57	75
City of Sevastopol	10.3	2.9	3.59	72
Republic of Dagestan	173.5	1.4	120.40	84
Republic of Ingushetia	79.3	0.3	250.16	85
Kabardino-Balkarian Republic	44.7	3.2	14.13	80
Karachayevo-Circassian Republic	21.4	2.6	8.28	79
Republic of North Ossetia-Alania	38.0	1.1	35.41	82
Chechen Republic	72.0	1.9	37.04	83
Republic of Altai	9.3	0.6	15.55	77
Republic of Tyva	12.3	1.4	8.89	81
Tomsk Region	27.6	9.0	3.08	70
Republic of Sakha (Yakutia)	32.5	10.6	3.06	71
Trans-Baikal Territory	44.5	10.9	4.09	74
Regions with the lowest tension coefficient				
Tula Region	28.2	29.1	0.97	13
Leningrad Region	34.9	43.6	0.80	8
Murmansk Region	18.8	23.1	0.82	7
Tyumen Region	52.4	53.9	0.97	17
Khanty-Mansi Autonomous Area – Yugra	18.5	19.8	0.93	10
Yamal-Nenets Autonomous Area	5.3	13.0	0.41	1
Krasnoyarsk Territory	38.3	52.7	0.73	5
Primorye Territory	33.5	46.9	0.71	6
Khabarovsk Territory	18.4	22.6	0.81	9
Amur Region	16.8	36.6	0.46	2
Jewish Autonomous Region	4.0	8.0	0.50	3
Chukotka Autonomous Area	0.6	1.0	0.59	4
Source: Regions of Russia. Socio-economic indicators, over a number of years. Available at: <a href="https://rosstat.gov.ru/folder/210/document/13204">https://rosstat.gov.ru/folder/210/document/13204</a> ; own calculation.				

<sup>8</sup> Not to be confused with “tension in the labor market”, a concept that we consider as a tense market situation associated with an increase in labor shortages. Both terms relate to tension in the labor market (misalignment between the demand for labor and its supply), despite the fact that conceptually they are opposite (one characterizes an excess of labor, the other – a deficit).

<sup>9</sup> Own calculation based on Rosstat data: Regions of Russia. Socio-economic indicators, over a number of years. Available at: <https://rosstat.gov.ru/folder/210/document/13204>

The high value of the tension coefficient indicates a significant excess of the number of the unemployed over the number of reported vacancies, which demonstrates the absence of production facilities in the region that absorb labor, as well as a shortage of workers with necessary qualifications. As a rule, a high coefficient value is observed in regions with a low living standard and a significant amount of informal employment.

A low coefficient value, on the contrary, indicates a shortage of labor. In this case the number of vacancies is much higher than the number of the unemployed. There are simply not enough workers in such regions, and the scale of misalignment between labor supply and demand for it indicates a lack of the properly skilled labor force. As a rule, these are remote regions with an unfavorable climate. Despite the fact that they are among the “richest”, with high per capita incomes of the population, in some of them (Yamal-Nenets Autonomous Area, Chukotka Autonomous Area, Murmansk Region), the larger half of the employed population are semi-skilled workers.

The potential for reducing informal employment and tension in many regional labor markets, therefore, primarily depends on policies to create new production facilities and jobs in these territories. In addition, investment in human capital, retraining or refresher training of the existing labor force are an important factor promoting the growth and expansion of economic activity. The opportunity to use the territories’ own labor potential can become an important competitive advantage of regional production facilities and a factor in the growth of social stability in cities and municipalities.

### **Structural and technological maneuver and balance in the labor market**

The shortage of labor resources remains the most significant factor constraining development of the Russian economy in medium and long terms. At the same time, it is impossible to solve this issue by simply increasing the number of employees due to demographic, socio-economic and cultural

limitations. In general, the solution to the problem is associated with an increase in labor productivity (Klepach, 2021; Roncolato, Kucera, 2014). However, the practical task is to determine the number of jobs and their quality, industries where they should be created, and technologies that should ensure conditions to achieve the desired productivity growth. An exhaustive analysis in all these aspects is hardly possible. Nevertheless, given the possibilities of Russian employment statistics, in particular their complementarity to some extent, preliminary results regarding rational directions for optimizing the use of labor resources can be obtained. The first thing that makes sense to try and do is to assess in which sectors and on what scale the reserves of labor productivity growth and labor force release are concentrated in the Russian economy. In this regard, it is appropriate to primarily provide a methodological comment on gathering statistics on the employed population and those categories of the employed, changes of which we will further analyze.

According to the Rosstat methodology, the employed include those aged 15 and over who, during the week under review, performed any activity (at least one hour per week) related to the production of goods or the provision of services for payment or profit. People who have been *temporarily* absent from the workplace for a short period of time are also included in the number of employees<sup>10</sup>.

There are methodological differences in the collection of data on the number of employed people presented in the labor force surveys (LFS)<sup>11</sup>

<sup>10</sup> On the approval of the main methodological and organizational provisions for conducting a sample survey of the labor force: Rosstat Decree 707, dated December 29, 2023. Available at: <https://rosstat.gov.ru/storage/mediabank/pr707-29122023.pdf>; Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023.

<sup>11</sup> On the approval of the main methodological and organizational provisions for conducting a sample survey of the labor force: Rosstat Decree 707, dated December 29, 2023. Available at: <https://rosstat.gov.ru/storage/mediabank/pr707-29122023.pdf>; Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023.

and in the balance of labor resources (BLR)<sup>12</sup>. “In particular, the average annual<sup>13</sup> number of the employed (BLR) **does not include** those who were absent from work due to maternity and parental leave until their child reached the age of 1.5 years, and military personnel, but **includes** those who were on long unpaid leave at the initiative of the employer, and migrant workers”<sup>14</sup>. The BLR data on the constituent entities of the RF are collected at the place of work, not at the place of residence like the LFS data.

To sum up, the data on the average annual number of employed people (BLR) exceeds the LFS data by the number of *migrant workers and those who are on long unpaid leave at the initiative of the employer* (one of the types of underemployment or hidden unemployment). Analyzing the difference between sectoral values of the number of the employed, collected according to different methodologies, it is possible to realize how large this excess is (Fig. 2) and how, theoretically, this resource can be used within employment policy, bearing in mind different quality levels of jobs at different sectors.

According to Figure 2, the majority of such workers are in trade (40% of the total) and construction (35%), and their proportion in

construction has increased by 17 p.p. since 2008. Most likely, we are talking about expanding market representation of migrant workers<sup>15</sup>. And a significant excess of the LFS data in scientific and professional activities (9% of the total) can be explained by the presence of employees who were on long unpaid leave (hidden unemployment). Their proportion has decreased by 13 p.p. since 2008.

These two very categories of employees we propose to consider first, given their significant weight in the general balance of labor resources.

1. Jobs occupied by migrant workers are usually low-skilled, which means they are low-productive, and their productivity growth depends on the level and speed of technological and structural changes. Based on the number of people employed in jobs with high automation potential, their proportion at the beginning of 2024 was 24% of the total number of the employed<sup>16</sup> (17.8 million people), 7% of them (5.22 million people) were low-skilled workers.

2. The involvement in the work process of a category of employees who have been on long unpaid leave at the initiative of the employer also depends on the level and changes of economic

<sup>12</sup> On the approval of the Methodology for calculating the balance of labor resources and estimating labor costs: Rosstat Decree 647, dated September 29, 2017. Available at: <https://rosstat.gov.ru/storage/mediabank/pr647-17.pdf>; Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023.

<sup>13</sup> The average annual number of employees of organizations is determined by summing the average number of employees for all months of the accounting year and dividing the amount received by the number of months (Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023).

“The average number of employees of organizations per month is calculated by summing the list of employees for each calendar day of the month and dividing the amount received by the number of calendar days of the month. Women who have been on maternity leave, those who have been on adoption leave since the birth of the adopted child, as well as on parental leave; employees studying in educational institutions who were on additional unpaid leave, as well as those entering educational institutions who were on unpaid leave to take entrance exams, are not included in the average number of employees. Employees who worked half-time are counted in the average number of employees in proportion to the hours worked” (Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023).

<sup>14</sup> Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023.

<sup>15</sup> According to the methodology (On the approval of the main methodological and organizational provisions for conducting a sample survey of the labor force: Rosstat Decree 707, dated December 29, 2023. Available at: <https://rosstat.gov.ru/storage/mediabank/pr707-29122023.pdf>), when calculating the BLR data, categories of people employed in the economy include the employment of foreign migrant workers: foreign citizens who have a work permit in the country, as well as foreign citizens who work without permits (EAEU countries).

<sup>16</sup> It was calculated as the sum of the categories “drivers and operators of mobile equipment”, “assemblers”, “sellers”, “unskilled workers”, the LFS methodology (On the approval of the main methodological and organizational provisions for conducting a sample survey of the labor force: Rosstat Decree 707, dated December 29, 2023. Available at: <https://rosstat.gov.ru/storage/mediabank/pr707-29122023.pdf>).

growth and the accompanying structural changes, on the opportunities to create high-performance, and therefore high-paid, jobs (it seems that in the case of scientific and administrative activities, we are talking about highly skilled labor), as well as the educational system’s capacity to provide refresher courses to such employees or retrain them.

In 2022, the total number of employees included in the BLR statistics, but not included in the LFS statistics, was just over 5 million people and increased by 400 thousand people over the past 15 years (see Appendix).

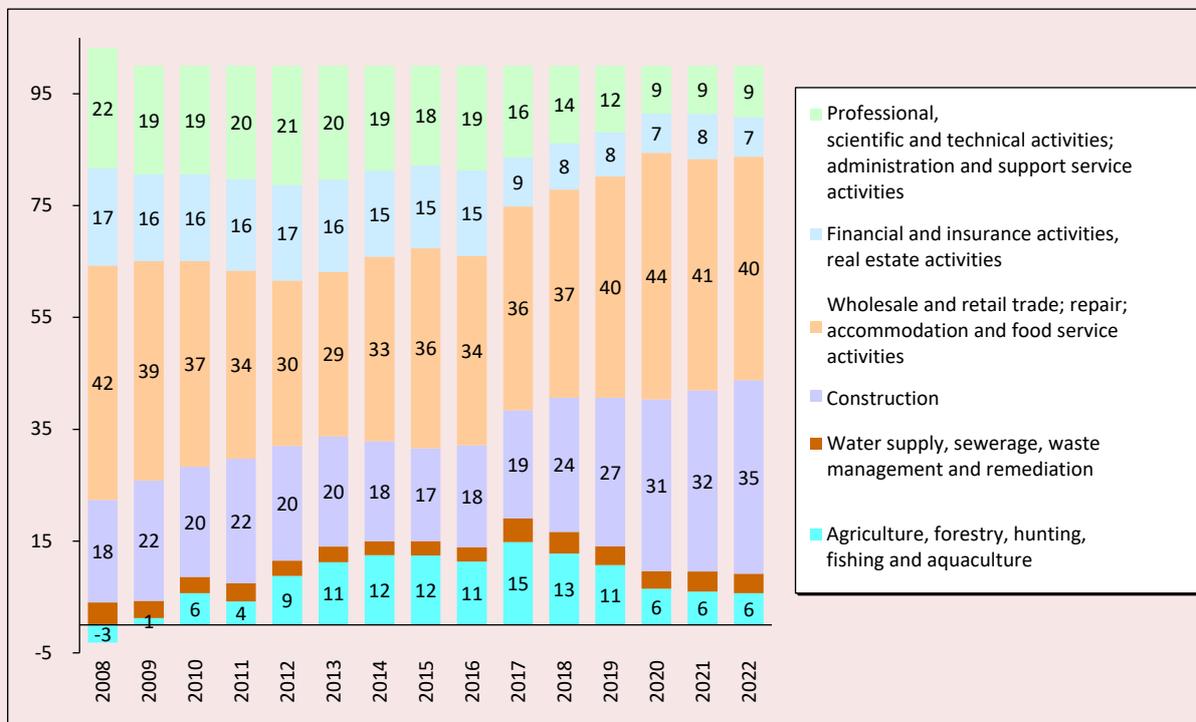
Such jobs represent a resource for the structural and technological maneuver in the economy aimed at a more balanced labor market. The content of this maneuver is to purposefully refresh capital and use other factors to increase labor productivity in sectors with relatively low job quality, release “surplus” workers and use them in other economic areas.

In turn, the excess of the LFS data over the BLR data concerns such categories of the population as military personnel and women on maternity leave to care for a child under 1.5 years old (Fig. 3). The majority of such potential workers are present in education (34% of the total), public administration (28%), healthcare (25%). Moreover, while this proportion is gradually increasing in education and healthcare, it is decreasing in public administration and military security. Even though these categories of employees could be a resource for reducing labor shortages, it seems that it would be difficult to involve them in the real production process.

**Conclusion**

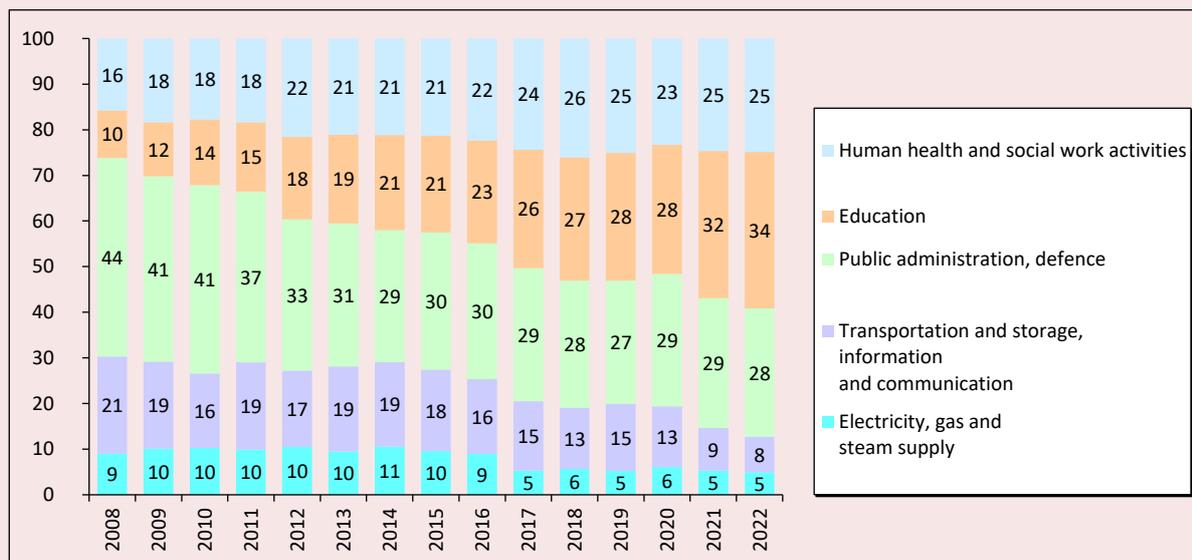
The described features of the development of regional and sectoral labor markets are, to some extent, a consequence of the established economic relations between economic agents of the Russian Federation. However, these very features should be

Figure 2. Excess of BLR data over LFS data by type of activity, % of total



Sources: Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023; The results of sample surveys of the labor force over a number of years. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>; own calculation.

Figure 3. Excess of LFS data over BLR data by type of activity, % of total



Sources: Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023; The results of sample surveys of the labor force over a number of years. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>; own calculation.

considered as the basis for generating the country's sectoral and regional development agenda, expanding opportunities and prospects for regional economic development, and improving the quality of life of the population.

Social policy of regional development is of particular importance, as it directly affects quality of human capital, income levels and living standards of the population. Tension in the labor market associated with record low unemployment rates is determined not so much by labor shortages as by imbalances in the skill structure of the demand for labor and its supply, slow structural, technological and institutional changes, and a lack of high-quality jobs in regions, especially those with low living standards, where informal employment is most likely to spread. In this regard, any concept of spatial development being elaborated should be based, among other things, on the specifics of creating regional policy in the area of income and employment.

The contribution of the conducted research to the growth of scientific knowledge is in studying the imbalances in the sectoral structure of data on the number of employed people, collected using various Rosstat methods, in order to assess the scale of the structural and technological maneuver in economic sectors affecting the efficiency of labor use (the level and changes of labor productivity).

According to the results of our calculations, based on the balance method and estimates of reserves of labor productivity growth in sectors, in order to ensure long-term economic growth, it is necessary to significantly increase labor productivity of at least 15 million workers by performing labor-saving structural and technological maneuvers. Construction and trade may become priority sectoral areas for job modernization in the coming years. Actually, we are talking about the need to develop and implement special sectoral and regional programs to increase labor productivity.

**Divergence of methodologies for calculating the number of employed people (LFS – BLR)  
by type of activity, million people**

Type of activity	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	-1.5	-2.1	-1.7	-0.9	-0.4	-0.5	-0.3	-0.1	0.3	0.5	1.0	0.9	1.1	0.9	0.8
Agriculture, forestry, hunting, fishing and aquaculture	0.1	-0.1	-0.3	-0.2	-0.5	-0.6	-0.7	-0.7	-0.6	-0.8	-0.7	-0.6	-0.3	-0.3	-0.3
Mining and quarrying	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5
Manufacturing	-0.1	-0.4	-0.2	-0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.2	0.1
Electricity, gas, steam; air-conditioning supply	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.2	0.2
Water supply, sewerage, waste management and remediation	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Construction	-0.9	-1.2	-1.1	-1.1	-1.1	-1.1	-1.0	-0.9	-1.0	-1.1	-1.3	-1.5	-1.5	-1.6	-1.8
Wholesale and retail trade; repair of motor vehicles and motorcycles, accommodation and food service activities	-2.0	-2.2	-2.1	-1.7	-1.6	-1.6	-1.8	-2.0	-1.9	-2.0	-2.0	-2.2	-2.2	-2.0	-2.0
Transportation and storage, information and communication	0.8	0.8	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.8	0.7	0.8	0.6	0.4	0.4
Financial and insurance activities, real estate activities	-0.8	-0.9	-0.9	-0.8	-0.9	-0.9	-0.9	-0.8	-0.9	-0.5	-0.4	-0.4	-0.3	-0.4	-0.4
Professional, scientific and technical activities; administration and support service activities	-1.0	-1.1	-1.1	-1.0	-1.1	-1.1	-1.1	-1.0	-1.1	-0.9	-0.7	-0.7	-0.4	-0.4	-0.5
Public administration and defence, compulsory social security	1.5	1.6	1.7	1.6	1.6	1.5	1.4	1.5	1.6	1.5	1.5	1.4	1.4	1.3	1.3
Education	0.4	0.5	0.6	0.7	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.3	1.5	1.6
Human health and social work activities	0.6	0.7	0.7	0.8	1.0	1.0	1.0	1.1	1.2	1.3	1.4	1.3	1.1	1.1	1.2
Other services	-0.5	-0.5	-0.4	-0.4	-0.4	-0.2	0.0	0.0	0.0	0.3	0.3	0.5	0.5	0.5	0.6

Sources: Labor and employment in Russia: Statistical book. Rosstat. Moscow, 2023; The results of sample surveys of the labor force over a number of years. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>; own calculation.

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## Agent-Based Modeling Methodology for the Development of Territorial Logging Systems



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**Abstract.** The paper examines methodological and practical aspects of designing agent-based models that support decision-making on the development of territorial logging systems. The aim of the study is to design an agent-based modeling methodology to create models for a territorial logging system. Scientific novelty and significance of the research consist in the creation of specialized approaches to designing logging systems models, in which we elaborate on creating a spatial network, possibilities of its integration with geoinformation systems, ensuring the possibility of adaptation to a service-based approach in the formation of elements, enabling the formation of agents' behavior in terms of using spatial elements of the model. We consider tasks related to the development of territorial logging systems in Russia, including the creation of an effective transport and logistics network. We analyze the toolkit used to solve the abovementioned tasks. Most studies have formulated the same goal – to reduce the total operating costs of harvesting wood. In this regard, agent-based modeling can claim to be a significant tool for solving this task. The main problem is lack of a methodological basis for building models; therefore, so far it is premature to talk about the possibility of creating a unified methodology, the list of tasks to be addressed is often endless. At the same time, it is possible to narrow the range of issues at hand by focusing on individual subject areas. Thus, we analyze existing approaches to the creation of agent-based systems and formulate our own approach to the creation of agent-based models of territorial logging systems. We put forward an algorithm of specific steps and stages to design and implement agent-based models. It includes creating a contextual diagram of the simulated system, a methodology to form a conceptual and functional structure of the model that is invariant to the tools of agent-based modeling. We consider constructing a spatial environment for models by integrating them with geoinformation systems. At the moment, the concept of an agent-based logging model has been created for the territory of Babushkinsky Municipal District of the Vologda Region, the main aspects of its implementation have been worked out in AnyLogic modeling environment. In order to desing a full-fledged model, there must be interest on the part of those who can provide actual data.

**Key words:** logging system, transport accessibility of forest resources, transport and logistics network, agent-based modeling methodology, service-based approach.

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### **Introduction**

The key strategic documents on the development of the Russian forestry complex envisage its transition to a sustainable development model, which ensures the satisfaction of public needs in wood raw materials and other forest resources, preservation of the ecological and socio-economic role of forests based on the use of modern scientific and technical achievements, radical renewal of all areas of activity and break-even forestry<sup>1</sup>. Intensification of the use and reproduction of forests is defined

<sup>1</sup> Strategy for the Development of the Forest Complex of the Russian Federation until 2030: Government Order 312-r, dated February 11, 2021. *SPS ConsultantPlus*.

as the most important direction of long-term state policy in the Russian Federation<sup>2</sup>.

The intensive model reflects sustainable forestry, ensuring sustainable forest management, increasing economic returns, and preserving the biological functions of forests. Its application is associated with the need to solve the problems of creating a sustainable raw material base in accessible areas for processing, to form a balanced internal and external markets of demand for forest products, to provide conditions for long-term investment in the forest fund and processing, to implement the economic model of intensive forest reproduction, to create a system of long-term planning at all levels of forestry (Rusetskaya, Sanina, 2023).

The Russian Federation is the world leader in terms of forest area, with over 20% of the planet's forests<sup>3</sup>. According to the expert assessment of Roslesinforg, the total value of all forest resources in Russia was equal to 73.3 trillion rubles at the end of 2022. The total value of timber reserves that can be used for commercial purposes (export and trade of timber and timber products, use of forests as fuel) amounted to 2.2 trillion rubles<sup>4</sup>. In 2022, the supply of raw materials increased by 1 million m<sup>3</sup>, and from 2023, the volume of forest wood resources annually put into economic turnover is planned to increase by 30 times, which will lead to an increase in the number of logging sites available for new leases<sup>5</sup>.

*However, the full-fledged, but at the same time rational development of these reserves is a significant problem. While Russia ranks first in the world in terms of forest reserves, it ranks only fifth in terms of timber harvesting. For instance, in 2020, 429.7 million m<sup>3</sup> of forest was harvested in the United States (11.0% of the global volume), 351.8 million m<sup>3</sup> (9.0%) in India, 341.7 million m<sup>3</sup> (8.7%) in China, 266.3 million m<sup>3</sup> (6.8%) in Brazil, and 217.0 (5.5%) in Russia (Rusetskaya, Sanina, 2023). Finland, neighboring Russia, with only 0.5% of the planet's forest resources, carries out 1.5% of the total volume of logging (Rusetskaya, 2022).*

In Russia as a whole, the ratio of the actual volume of timber harvested to the established permissible volume of timber removal (estimated cutting area<sup>6</sup>) in the period from 2019 to 2021 averaged 30.1%<sup>7</sup>. In some regions of the country this indicator is even lower. For example, in the Komi Republic in 2022 the estimated cutting area was utilized by 28.3%<sup>8</sup>. In the Tomsk Region this indicator was 18%<sup>9</sup> in 2020. In the Arctic zone of the Russian Federation, the estimated cutting area was utilized by 19.9%<sup>10</sup> in 2021. In the Far Eastern Federal District, the level of utilization of the estimated cutting area is only 10.7%<sup>11</sup>.

This situation is largely due to the fact that the volume of economically accessible cutting area is

<sup>2</sup> Fundamentals of the State Policy in the field of use, protection, conservation and reproduction of forests in the Russian Federation for the period up to 2030: Government Order 1724-R, dated October 26, 2013. *SPS ConsultantPlus*.; Strategy for the development of forestry complex of the Russian Federation until 2030: Government Order 312-r, dated February 11, 2021. *SPS ConsultantPlus*.

<sup>3</sup> The area of forests in Russia increased by 458.5 thousand hectares over the year. Available at: <https://roslesinforg.ru/news/all/ploshchad-lesov-v-rossii-za-god-uvlichilas-na-458-5-tys-ga/>

<sup>4</sup> Roslesinforg estimates the value of Russian forests. Available at: <https://roslesinforg.ru/news/all/v-roslesinforg-otsenili-stoimost-rossiyskikh-lesov-/>

<sup>5</sup> The available volume of timber increased by 1 million "cubes". Available at: <https://roslesinforg.ru/news/all/dostupnyy-obem-drevesiny-uvlichilsya-na-1-mln-kubov-/>

<sup>6</sup> Allowable annual volume of harvesting that does not harm the self-reproduction process of forest resources.

<sup>7</sup> On the State and Environmental Protection of the Russian Federation in 2021: State Report. Moscow: Ministry of Natural Resources of Russia; Lomonosov Moscow State University, 2022. P. 187.

<sup>8</sup> There is less deforestation in Komi. Available at: <https://www.bnkomi.ru/data/news/159906/>

<sup>9</sup> Knorr: Loggers logged 18% of the allowable forest in the region in 2020. Available at: <https://www.riatomsk.ru/article/20210204/tomsk-lesozagotovka-2020-objem/>

<sup>10</sup> On the state and protection of the environment of the Russian Federation in 2021: State report. Moscow: Ministry of Natural Resources and Environment of Russia; Lomonosov Moscow State University., 2022. P. 251.

<sup>11</sup> Trails and roads of the Far East timber industry. Available at: <https://www.eastrussia.ru/material/lesnymitropami-chem-zhivyet-lesprom-dalnego-vostoka/>

much lower compared to that defined as the estimated one (Orlov et al., 2022). According to rough estimates, the area of economically accessible forests, in which it is possible to obtain profit from forest use, does not exceed 1/5 of the country's forest area<sup>12</sup>. One of the main factors determining the economic accessibility of forest resources is transportation, which forms a significant share of costs associated with the production of forest products (Pryadilina, Petrov, 2020, p. 152).

The insufficiently high degree of transport infrastructure development and transport development of forests restrains the growth of the forest industry and reduces the level of its investment attractiveness. For example, in the Northwestern Federal District, the existing forest transportation highways account for only 29% of the required number in terms of length, and in general, the technological network of branches in terms of length is 36% of the value required for the full transport development of forests in the NWFD (Bzhelenko et al., 2021). In this regard, the development of forest transportation infrastructure, and the construction of forest roads in particular, is the most important task for the Russian timber industry complex (Bzhelenko et al., 2021).

Traditional methods of designing transportation networks are focused on the design of forest roads of the extensive model of forest management and do not pay due attention to transportation support of the intensive model tasks. According to some estimates, the total required length of public roads, forest highways, branches and whiskers per unit area under the intensive model (20.5 km / 1,000 ha) is almost twice as high as under the extensive model (11.8 km / 1,000 ha) (Larin et al., 2022).

Optimization of the transportation and logistics network is an important aspect of supply chain

planning. In the forest industry, since transportation is the major cost of raw wood supply, transportation planning should allocate the distribution in such a way as to minimize the total movement of wood. Reducing transportation costs through advanced planning and improved efficiency has motivated researchers. Much of the research has focused on developing planning methodologies and decision support systems for large and complex vehicle routing problems in timber or roundwood transportation (Audy et al., 2022).

Various methods have been used to optimize logistics in the forest industry, including decision support system (DSS) and network analysis techniques (Parsakhoo et al., 2017); ant colony optimization (ACO) algorithms (Chung, Contreras, 2011; Lin et al., 2014; Lin et al., 2016; Lin et al., 2017); artificial bee colony optimization (ABC) algorithm (Jamhuri et al., 2020; Jamhuri et al., 2021; Jamaluddin et al., 2023); algebraic modeling (Peyroy et al., 2021); column generation optimization (Palmgren et al., 2003; Palmgren et al., 2004; Rey et al., 2009; Rix et al., 2015); linear programming approach – transport simplex algorithm (Devlin, Talbot, 2014; Lotfalian et al., 2022); integer programming model combined with column generation (Bordón et al., 2021); mixed integer programming model MIP + GIS (Najafi, Richards, 2013); MILP mixed integer linear programming model (Aydinel et al., 2008; Van Dyken et al., 2010; Moad et al., 2016; Bordón, 2018; Balaman, 2018); mixed integer nonlinear programming model (Shabani, Sovlati, 2013); fuzzy  $\varepsilon$ -constraint method (Balaman et al., 2018); linear programming model (Acuna, 2017; Boukherroub et al., 2017, Flisberg et al., 2015; Frisk et al., 2010; Forsberg et al., 2005); simulated annealing algorithm (Han, Mirphy, 2012); geographic information systems (Dean, 2011; Danilović et al., 2013; Olsson et al., 2017; Đuka, et al. 2020); computer learning (Almeida et al., 2022).

<sup>12</sup> Интенсивное устойчивое лесное хозяйство: барьеры и перспективы развития: сб. статей / под общ. ред. Н. Шматкова Всемирный фонд дикой природы (WWF). М.: WWF России, 2013. С. 5.

Russian researchers also apply modeling tools in solving problems of scientific support for the logging industry development. The article (Antonova, 2011) presents a mathematical model of optimal transport development of leased forest areas taking into account the timing of adjacency and the possibility to minimize the costs of logging and construction of logging roads; its implementation by the method of dynamic programming will raise the volume of the logging stock development and increase the enterprise's profitability. Based on the system approach, mathematical and cartographic modeling, geanalysis and computational machine experiment by means of GIS, the paper (Antonova et al., 2015) developed a methodology, mathematical model, algorithm and PTOL software package based on MapInfo GIS to solve the problem of logging site location and forest transport development. The article (Goncharova, 2018) worked out a scheme of forest roads using graph theory. The research (Bzhelenko et al., 2021) carried out the calculation of the optimal parameters of the width of load-collection zones of forest roads and their required length per unit area for the conditions of the NWFD by developing an optimization model in MS Excel environment using the subsystem "Solution Search" and GIS-project of the transport infrastructure of the NWFD by methods of geanalysis. The study (Motovilov et al., 2023) proposed a mathematical model for determining the optimal location of pellet production facilities in the region and an algorithm for its implementation based on the theory of optimal decision methods.

In recent years, simulation models have been increasingly used to solve logistical problems in the forestry industry. They provide advantages for management contingency planning in non-stationary systems under uncertainty compared to mental, conceptual, physical or mathematical models. Simulation modeling techniques such as discrete event simulation (DES), agent-based simulation

(ABS), and system dynamics (SD) are common frameworks for representing a real-world system (Borshchev, 2014).

Timber supply chain encompasses a set of processes and operations for harvesting, extraction, transportation, storage, pre-treatment, utilization, and processing of timber. Timber supply chain management is concerned with the related decisions to plan, design, operate, control and monitor the flow of materials, services, finance and information within and between different actors (Kogler, Rauch, 2018). In this regard, studies based on the application of discrete event modeling methodology and tools have become quite widespread (Asikainen, 2001; Saranen, Hilmola, 2007; Puodžiunas, Field, 2008; Mobini et al, 2011; Beaudoin et al., 2013; Berg et al., 2014; Marques et al., 2014; Wolfsmayr et al., 2016; Gronalt, Rauch, 2018; She et al., 2018; Akhtari et al., 2019; Kogler, Rauch, 2019; Kons et al., 2020; Lundbäck et al., 2022, etc.).

In addition to discrete event simulation, agent-based simulation (ABS) has been used in forestry research in recent years and has been widely applied to solve various problems of modeling logistics production in geographically distributed production systems in various industries, such as electricity (Divényi, Dán, 2013), oil industry (Sinha et al., 2011), metallurgy (Azar et al., 2021), agro-industrial production (Naghavi et al., 2020), etc. Instead of defining the behavior of a global system, the ABS model defines the behavior of actors that exist together in the environment and communicate with each other and with their environment. The factors affecting each other at the aggregate level need not be known, but if the behavior of individual actors is known, then ABS can model global behavior (Borshchev, Filippov, 2004). This is the advantage of ABS over other modeling techniques such as system dynamics (SD) or DES, which have limitations in this regard. In particular, in the forestry sector

there are often different people and objects such as operators, operational managers, machines, etc. that interact with each other and the environment.

The research (Karttunen et al., 2013) performs simulation modeling of an economically efficient intermodal containerized forest chip supply chain through a combination of agent-based and discrete event simulation.

The study (Holzfeind et al., 2021) uses an agent-based approach to analyze and model a system of logging and transportation operations in the forestry sector in a mountainous environment with limited space. The set of agents placed in the spatial model environment and acting as top-level agents were rope skidders, trucks and individual sorting lines. The impact on system behavior and performance of parameters such as weather conditions, storage capacity, the number of trucks involved and the timing of their orders was evaluated. The functionality of the model was evaluated using assumed logging data based on assumptions, personal knowledge, general information and data from published literature. The model can be applied to support operational planning of rope skidder harvesting and transportation of harvested timber to industrial plants.

The paper (Helo, Rouzafzoon, 2023) carries out a simulation to minimize transportation costs when logs are collected from several regions and delivered to the nearest collection point. An agent-based model is given, comprehensively covering the key elements of the timber supply chain and representing the units as interacting autonomous agents. The modeling combines components such as geographic information system (GIS) routing, potential facility locations, log collection locations, fleet size, and distance of timber transported by trucks and trains. The simulation results are presented in the form of time series charts such as number of trucks used, facility inventory, and trip distance. In addition, various simulation scenarios

are applied to investigate potential facility locations and number of trucks, and to determine the optimal facility location and fleet size.

The results of the analysis of models, methods and algorithms for the construction of logging systems allow arguing that agent-based simulation, despite all the existing difficulties in its use, is the most promising and most adequate approach for solving the problem of reducing the total operating costs of timber harvesting. To a certain extent, evolutionary algorithms and discrete event simulation can be used to model such systems. But their possibilities are limited by the description of rather primitive behavior of the system elements, which is determined at the general model level. Territorial systems of logging production belong to the systems in which the elements have their own inherent behavior associated with the situational factors at certain points in time. And it is agent-based simulation that allows the use of various mechanisms of behavior implementation both at the level of behavior models of particular agents and at the general model level. But the key problem is the lack of a methodological basis for building agent-based models. At the same time, it is impossible to speak about the possibility of creating a single methodology at the moment, since the list of problems to be solved here is substantial and often immense. The issues of adequate representation of agent behavior, adaptation methods, and inference under uncertainty are particularly difficult. Therefore, agent-based modeling will develop together with the development of other areas of mathematics and computer science. However, there is a possibility to narrow the range of solved questions by focusing on separate subject areas. In this regard, the main objective of the presented research is the development of agent-based simulation methodology aimed at developing models of the territorial logging system. The scientific novelty and significance of the research

lies in the creation of specialized approaches to the development of models of logging systems, in which the issues of creating a spatial network, the possibility of its integration with geographic information systems, providing the possibility of adaptation to the service-oriented approach in the formation of elements, providing the possibility of forming the agents' behavior in terms of using spatial elements of the model are worked out. As a result, a consistent and complete cycle of stages is provided, starting from the analysis of the subject area and ending with the practical implementation and use of models.

### Methods

The existing methods of ABS development have been investigated in the works (Alfimtsev et al., 2013; Aksenov et al., 2016; Zubareva et al., 2016). They are described in the most detail by A.N. Shvetsov, who divided the existing methodologies into four classes: those based on object-oriented methods and technologies using appropriate extensions (Agent UML, P2P Agent Platform, ADELFE, INGENIAS, O-MASE); those using traditional knowledge engineering methods (MAS CommonKADS); based on organization-oriented representations (Gaia, PV-networks, M-architecture, SODA, ANEMONA, ASPECS, GORMAS, ROMAS); combining to varying degrees the methods of the first three classes (Tropos, PASSI, Prometheus) (Shvetsov, 2016).

Each of the methodologies outlined above offers its own set of basic elements and instructions and, in some cases, software tools for creating agent-based systems. All this diversity of approaches, in turn, leads to the need to combine and generalize design methodologies within model implementation projects. In practice, a specific implementation of a multi-agent system can be considered as a program with specific behavior and functioning in a heterogeneous environment (Nikolaychuk et al., 2019). In this regard, the general concept underlying

the formation of agent-based systems, which allows having a unified view on the formation of the role model, is of particular importance. Here, we note two approaches developed by Russian researchers: the concept of needs and capabilities networks (NCNs) and the meta-methodology of designing multi-agent intelligent systems (MAIS).

According to the concept of NC-networks, each requisition, order, and other needs and capabilities (production resources, machines, equipment, vehicles, personnel) are assigned to program agents that negotiate with other agents and schedule orders to be completed "just-in-time" or "as early as possible," thus providing support for real-time collective coordination and decision-making at various stages of planning and execution of the production plan in different departments working together on the solution to the problem. The constant search for matches between competing and cooperating agents' needs and capabilities in the virtual market of the system allows building a solution to any complex problem as a dynamic network of links, flexibly changing in real time (Skobelev, 2015).

The metamethodology of MAIS design (Shvetsov, 2016) is based on the reflection of the selected subspace of the real or virtual world in the entire possible completeness of its empirically manifested and not manifested properties. For this purpose, we used the concept of model world space (MWS) as a high-level epistemological concept covering the part of reality that is modeled by MAIS and the components of the external environment that exist in ontological unity with MAIS. The features of metamethodology are the inclusion of both real and virtual worlds, which are already informational representations of other worlds (possibly also virtual), into the field of changeable reality. Thus, a multilevel nested representation of the world in which physical and informational entities exist and operate emerges. This approach

makes it possible to consider the analysis, modeling and design of MAIS proper as a single multilevel iterative process, which allows obtaining models of MWS with different degree of reality detailing.

Regarding the issues of methodology of designing agent-based models, it is impossible to ignore the available specifications for describing this type of models. The most commonly used specifications are DREAM (descriptive agent-based modeling) and ODD (Overview, Design concepts and Details) protocol.

In accordance with the DREAM specification, the initial stage involves the creation of a complex network model that graphically depicts the main elements of the model. The complex network model can be transformed into a specification model, which contains a set of specification constructs reflecting direct unambiguous correspondence with the constructs of the agent-based model. In accordance with the specification, an agent-based model is created. Thus, the end result is a construct of consistent elements of the DREAM specification. From the complex network model, it is possible to move to the specifications, and from them to the agent-based model. The reverse transition is also possible (Niazi, 2011).

The key idea behind the development of the ODD protocol is to create a common format and standard structure by which all model elements can be documented. This ensures simplicity and completeness of model description, and increases the efficiency of model creation and perception. This simplifies the process of reproducing the model, hence the possibility to speak more consciously about its adequacy (Grimm et al., 2020).

Specifications cannot be positioned as methodologies (they are not intended to be). But they can certainly be incorporated as components of methodologies, especially in the analysis and validation phases.

## Results and discussion

We develop our own concept of creating agent-based models. Its ideological basis is the meta-methodology of MAIS construction, and the role and functional models are based on the object-oriented approach and the concept of NC-networks. In our interpretation, it is a service-oriented approach (Gulin et al., 2023). The concept defines the basic rules for creating the agent-based forest management system under development: determination of target indicators and criteria for assessing the effectiveness of the system's functioning under the conditions of the existence of mobile elements; formation of a spatial graph of the system's functioning, taking into account the existing infrastructure, capable of reflecting the mobility of the system's elements; determination of the composition and parameters of the system's objects in accordance with the service-oriented paradigm; determination of behavioral models; determination of the system's parameters in accordance with the service-oriented paradigm.

The concept is the basis for the methodology of agent-based model development, some aspects of which are presented in the article (Shvetsov, Dianov, 2019). The concept was used to create the concept of the logging model in the territory of Babushkinsky Municipal District of the Vologda Region (hereinafter referred to as the model concept).

The process of model space formation is provided by using the context diagram. The context diagram visualizes external objects and their interactions with the system. It clearly and understandably shows the necessary external interfaces with a brief explanation of what is passed in and out. In this way, we have a visual representation of the inputs and outputs of the system. In this case, for the considered type of spatially distributed systems, we proposed to identify separately two circuits of interaction between external objects and the system: the control circuit of target settings at the intrasystem level and the control circuit of the

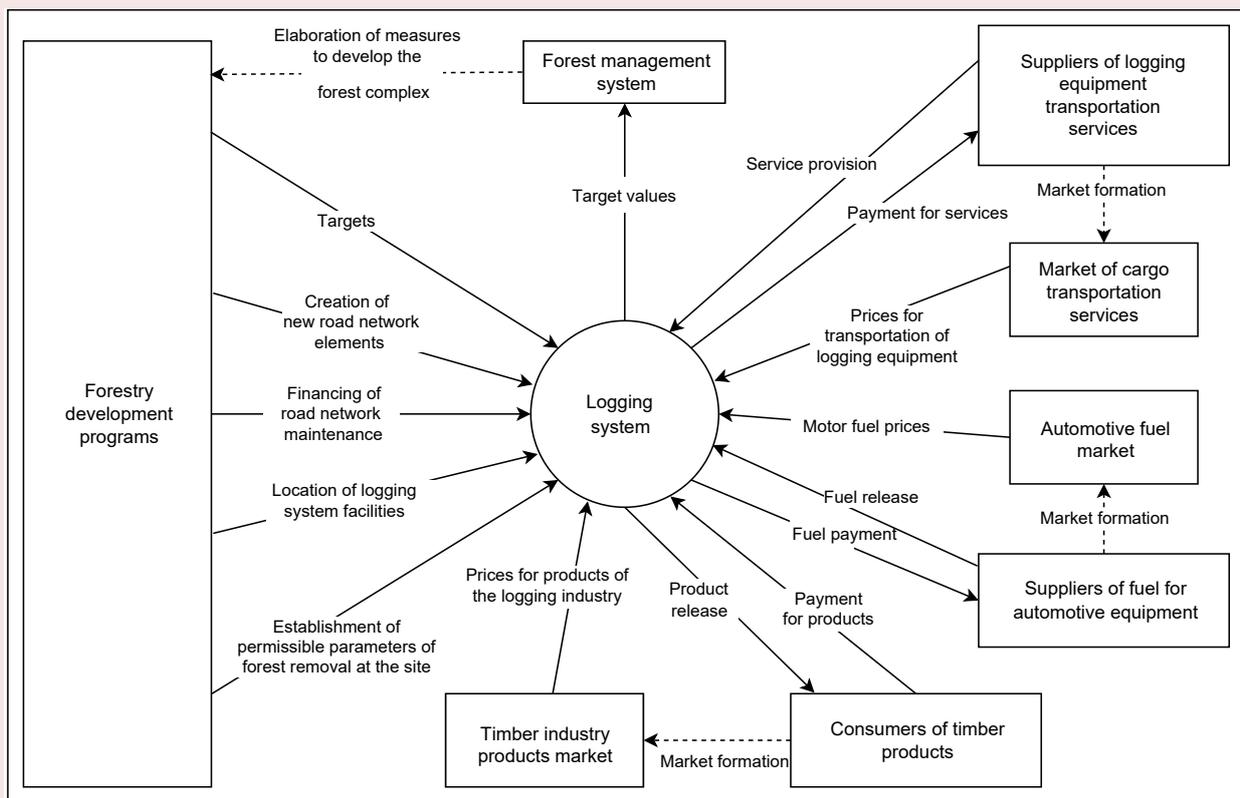
rules of organization of the system functioning. These two contours interact with the system through external objects-mediators. Influencing the system constantly, they shape its behavior. In contrast to the interactions carried out directly between external objects and the system, the types of interactions of these circuits are mediated, i.e., carried out through intermediaries. In this case, the intermediaries are external objects that have both interactions with other external objects and interactions with the system. *Figure 1* presents the context diagram of the regional logging system.

Using the context diagram and the formed conceptual space, we formed a part of the initial data set for modeling, controlled parameters of the

model and modeling indicators. For instance, based on the context diagram presented in *Figure 1*, we can identify the following parameters:

- input data for modeling: prices for transportation of logging equipment, prices for motor fuel, prices for products of the logging industry;
- managed parameters: targets, new road network elements, financing of road network maintenance, location of logging system facilities, parameters of forest removal at the site;
- modeling indicators: values of target indicators, the amount of payment for transportation of logging equipment, the amount of payment for fueling the equipment, the volume of products supplied by the logging system.

Figure 1. Context diagram of the regional logging system



Source: own compilation.

The context diagram also allows clearly defining the parameters for working with the system model, which are the starting point for the formation of its conceptual space.

At the first step of forming the conceptual structure of the model, we identify the objects containing the attributes that directly form its studied indicators. Further for all pairs “object – attribute” of each identified at the first step object, we determine the list of processes, with which the change of values of the corresponding attributes is connected. For all processes the subjects of realization are defined, which, in essence, represent the following set of identified objects of the model. At the next step, we defined three blocks of attributes for each “subject–process” bundle: goal-setting, initializing and forming. The goal-setting attributes form the motivational component of the process launch. Initializing attributes participate in the description of the situation that makes it possible to start

the process. Formative attributes determine the degree of influence of the process on the attribute to be changed. The process of identification of the components of the conceptual structure of the model is completed at the step at which no new “object-attribute” mappings appear. Then the structure of model objects is formalized. *Table 1* shows the structure of Harvester object.

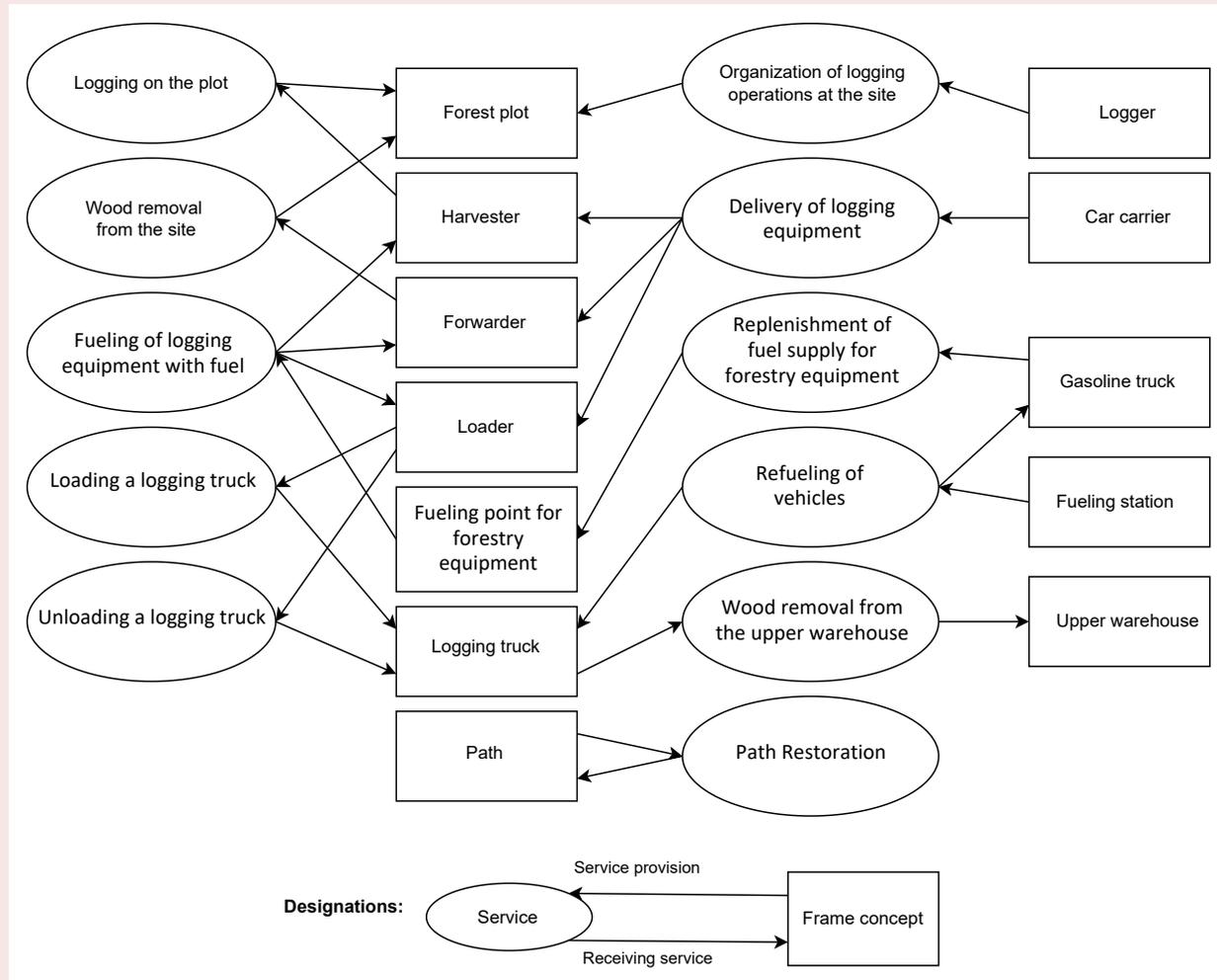
The further stage of the model formalization is connected with the formation of the structure of services in the relationship with the model objects. The processes identified in the conceptual structure of the model are positioned as services. Each service has two sides of relations with objects: providing service and consuming service. These relations are displayed using OS-projection (*Fig. 2*).

Motivation modules are associated with each “Receive service” relation. These modules have a single output parameter with the values “motivated” or “not motivated”. For example, for the relationship between the object “Harvester”

Table1. Harvester object structure

Harvester			H(N_h)
Attribute	Value range	Unit	Designation
Identifier	Alphanumeric designation		H_id
Place of permanent deployment	Item ID Node		H_loc
Current location	Item ID Node		H_cloc
Workplace	Item ID Node		H_rloc
Affiliation	Logger element identifier		H_vlad
Weight	Numerical value	kg	H_mass
Productivity	Numerical value	m <sup>3</sup> /hour	H_eff
Fuel tank capacity	Numerical value	liter	H_vbak
Current fuel level	Numerical value	liter	H_cbak
Current fuel level	Numerical value	ltr/hour	H_rt
Cost of maintenance in the operation phase	Numerical value	rub. / hour	H_stobe
Cost of maintenance in the idle phase	Numerical value	rub. / hour	H_stobp
Travel speed	Numerical value	km / hour	H_spped
Operating time	Numerical value	hour	H_te
Own compilation.			

Figure 2. OS model projection



Source: own compilation.

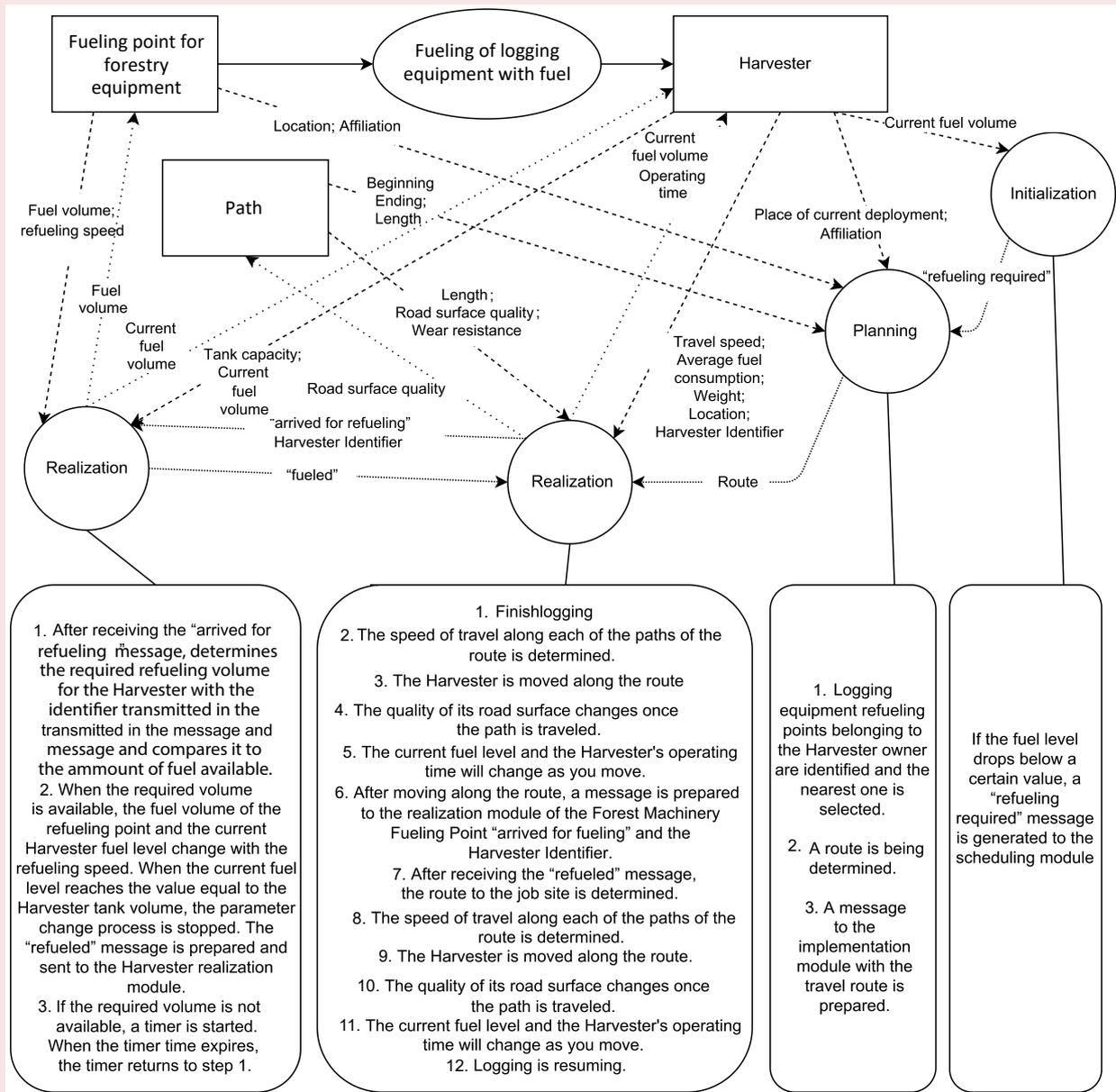
and the service “Refueling of logging equipment” the motivation module “in demand” is defined. The logic of its content is that if the object “Harvester” has an owner (the target attribute “Ownership” is filled in), then the output parameter of the motivation module has the value “motivated”.

To realize services, we form modules of service identification, planning and realization in their structure at the level of service-related objects. Between the modules, it can be established links

that ensure the transfer of parameters. At the input, they have a certain set of values of attributes of model objects. We give the description of algorithms of its realization for each module.

The identification module operates with the current values of the output parameter of the motivation module and the initiating parameter “Current fuel level” of the object “Harvester”. If the first one has the value “motivated” and the second one has the value below a certain value, the identification module is started.

Figure 3. Projection of modules of the service “Fueling of forestry equipment”



Source: own compilation.

Figure 3 presents an example of a module description.

OS projection and service module projection are further implemented in agent-based modeling environments.

The next stage forms the spatial structure of model elements. Here a set of nodes of model objects placement is defined, a coordinate system

is specified and in accordance with it the placement of nodes and interaction network between nodes is determined. Then the identified model objects are placed in the nodes.

Qualitative representation of transportation networks in the models is important. On the one hand, they should represent the existing road network, on the other hand, they should provide

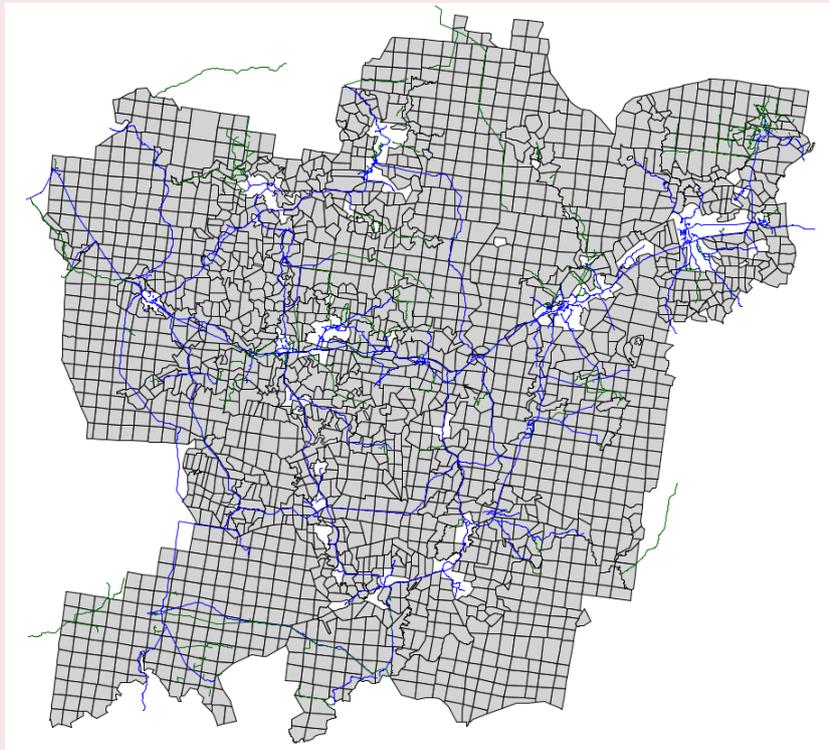
an opportunity to form a network of forest roads to be built. In addition, it is necessary to link the parameters of road network objects with the elements of agent-based models. At the same time, it is necessary to formulate and implement mechanisms for simulating the functioning of the road network used in forest management processes, based on the existing mechanisms for implementing spatial networks in agent-based modeling systems.

Many of the existing agent-based environments (e.g. AnyLogic, NetLogo, GAMA) provide the ability to generate spatial networks through integration with geographic information systems (GIS). Thus, agent-based models can utilize information about the existing road network, which is contained in geographic information systems. In doing so, the models are more realistic and visualized. Integration is provided by the services provided by modern Web-GIS. These include tile

services and shapefile provisioning services. In addition to appearance, from geographical data agents get the exact dimensions of the modeled objects, which allows to develop more adequate models. In the concept we have developed, the road network is divided into separate sections – paths. Each path is associated with a separate agent, which contains the characteristics of the path.

*Figure 4* presents the obtained road network for logging in the territory of Babushkinsky Municipal District of the Vologda Region. The OSM (OpenStreetMap) portal was used as a source of cartographic data, where individual shapefiles of highways, forest roads and forest blocks can be obtained. The maps required for the model were created using the QGIS GIS toolkit, which allows downloading, editing and viewing of geographic data. The QGIS QuickOSM plug-in was used to search and select the required data.

Figure 4. Road network for logging on the territory of Babushkinsky Municipal District of the Vologda Region



Source: own compilation.

A road network derived from a GIS can be augmented using specialized elements available in agent-based environments. These typically include elements that allow point and polygonal objects to be created and connected.

In accordance with the developed concept of creating agent-based models, we defined the management decision-making scheme. It uses the results recorded in the processes of interaction of model objects in the provision of services. The interaction is carried out in the configuration of the territorial transportation network, which determines the characteristics of interaction. In the process of rendering services, the values of a given set of parameters are formed within the framework of assessing the success of the model functioning – target indicators. The main purpose of modeling is to find the most optimal architecture of functioning of the modeled system (structure of the transport network, number, characteristics and places of permanent dislocation of objects) based on the values of target indicators with available resources (constraints). In the process of modeling various architectural compositions of the modeled system are formed. The number of possible variants is limited by the specifics of the subject area and available resource constraints. Modeling is performed for each of the variants during a certain modeling time. According to the results, the values of the model performance indicators are calculated, which are derived from the values of the parameters of the model objects fixed during modeling. The set of obtained indicators for each model is compared with the set of target indicators. According to the results, we determine the most optimal variant of the architecture of the modeled system.

### **Conclusion**

As a result of the study, we have developed an algorithm of specific steps and stages necessary for the design and implementation of agent-based models that provide decision support for the

formation of effective infrastructure for the use of forest resources. It is based on the service-oriented approach to the design of agent-based models and includes a consistent and complete cycle of stages, starting from the analysis of the subject area and ending with the practical implementation and operation of models. Its distinctive feature is the use of the developed schemes of functioning of the modeled agent-based system and its objects at the stage of conceptual design. At the first stage, the verbal model development is carried out: formal description of the modeled system, modeling objectives, targets and criteria for model evaluation are defined. At the stage of conceptual design of the objects' functioning environment, the elements of the spatial graph (nodes and paths) and their attributes are defined. This process, on the one hand, is carried out taking into account the environment of the real subject area, on the other hand, may contain elements of its expected development.

Then follows the stage of conceptual design of model objects. Based on the analysis of the verbal model, model objects are identified in accordance with the service-oriented approach. As a result, a set of objects with needs and services assigned to them, mobility parameters, attributes and structure of modules of behavioral models is obtained. At the stage of model formalization, the content of modules of object behavior models is elaborated. In the course of realization of steps of this stage the conceptual model of the environment of functioning of objects and conceptual model of objects are refined. The next stage is the formation of the agent-based model architecture. Based on the analysis of the results obtained at the conceptualization and formalization stages, the composition and structure of model agents are determined. Here the sets of controllable parameters and parameters of modeling results estimation, as well as the mechanisms of formation of parameters of modeling results estimation are determined.

Then follows the stage of model realization, which is carried out using software tools. The initial set of model elements is formed, their initial parameters and spatial placement are set. At the stage of model operation, experimental studies related to changes in the controlled parameters are carried out. For separate purposes of system modeling (if it is necessary to evaluate its various configurations), the stage of model reconfiguration can be defined. In this case, two options are possible: first, repetition of the stages of implementation (formation of a new configuration of the initial set of model elements, their initial parameters and spatial placement) and experimental studies;

second, repetition of the stage of conceptual design of the object functioning environment (reconfiguration of the agents' functioning environment) with subsequent repetition of the stages of implementation and experimental studies. The final stage is associated with the evaluation of the obtained results.

The algorithm of specific steps and stages necessary for the design and implementation of agent-based models was tested in the framework of creating the concept of an agent-based model of logging infrastructure on the territory of Babushkinsky Municipal District of the Vologda Region.

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## Hybrid Organizations in the Non-Governmental Sector of Social Services: A Sociological Analysis



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**Abstract.** Issues regarding the development of the third sector are among major ones in research on Russia's modern socio-economic system. Current trends in the transformation of the social services sector include the emergence and development of hybrid organizations whose activity combines social goals and commercial objectives. At the same time, hybrid forms in the social sphere have not been given due attention; Russian authors consider hybrid organizations mainly in relation to the development of public-private partnership in the field of economics. The aim of our research is to analyze theoretical approaches to understanding the hybrid model of organizations and consider specific examples of implementation of hybrid forms among Russian non-governmental organizations, which determines the scientific novelty of the work. Another task is to identify the most successful and innovative practices in the development of hybrid organizations representing the relationship between non-governmental and

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business structures. To solve it, we analyzed two cases: Penza and Kislovodsk, which represent a cluster of organizations providing services to children and adults with special needs. The results of the study showed that the tendency toward the development of hybrid forms for non-governmental organizations is largely related to the desire to achieve financial security. Currently, there exist other hybrid forms besides public-private partnerships and non-governmental organizations founded by large commercial organizations and affiliated with them; there emerge new institutional forms when non-governmental organizations establish commercial enterprises that, as a rule, provide additional services or replicate successful social practices on a commercial basis. Such organizations are intended to ensure financial stability of non-governmental organizations, since part of the profit goes to support the latter. This process opens up significant opportunities for the development of the non-governmental sector, but requires finding a balance between the commercial and social components of such a partnership. The hybrid format creates new prospects for the third sector, allowing for the diversification of resources through the interaction of non-governmental and commercial structures and building more effective interaction with regional authorities. Further research in this area may be related to analyzing the effectiveness of hybrid forms in comparison with traditional NGOs, as well as studying long-term consequences of hybridization for the development of the third sector.

**Key words:** hybrid organizations, third sector, financial stability of NGOs, social entrepreneurship.

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### **Introduction**

Achieving financial sustainability is one of the key priorities for many non-governmental organizations in today's environment. Irregularity in receiving private donations and corporate support, barriers to government support, and limited access to grant support force non-governmental organizations (NGOs) to look for new ways to diversify their sources of income. In this context, the development of hybrid forms of organizations combining elements of non-governmental and commercial activities seems to be one of the possible solutions to the problem. In the most general form, hybrid organizations blur the boundaries between the public, non-governmental and business sectors (Billis, 2014; McNutt, Billis, 2016). However, the implementation of the hybrid model in the social services sector involves a number

of specific challenges and barriers. The complexities of integrating non-governmental and commercial goals and objectives, ensuring transparency and accountability to stakeholders, the need to develop new managerial competencies require careful planning and adaptation of organizational processes. These processes have not yet received proper theoretical understanding. The problems of financial resources of non-governmental organizations are predominantly considered in terms of access to public funding (Grishchenko, 2014; Vasil'tsova, Nevyantseva, 2017).

The aim of the article is related to the analysis of theoretical approaches to understanding the hybrid model of organizations, as well as the consideration of specific examples of hybrid forms implementation among Russian NGOs. As an

empirical base, we present cases from Kislovodsk and Penza, which demonstrate different models of integrating commercial structures and NGOs, as well as emphasize the importance of intersectoral partnership for solving social problems.

### **Theoretical backgrounds of the research**

We analyze the concept of “hybrid organization”, the problem of financial sustainability, as well as social responsibility, which determine the development of this model of organizations in the field of social services as a theoretical framework of the study.

#### ***The concept of “hybrid organization”***

The concept of “hybrid organization” is relatively new in the social sphere, and therefore there is no unified approach to understanding this organizational form. According to E.S. Ogorodnikova’s definition, a hybrid model is “a specific type of interaction that combines producers and sources of resource coverage related to the state, corporate and public sectors of the economy, which allows maximizing the output of social services” (Ogorodnikova et al., 2023, p. 754). E.V. Popov and colleagues adhere to approximately the same position, providing a more formalized definition: “Hybrid can be defined as a long-term contractual relationship between economic entities, in which the participants of interaction combine tangible and intangible assets for joint implementation of various activities, while remaining autonomous and working on the basis of the contract concluded between them” (Popov et al., 2016, p. 5). At the same time, an approach is developing in which the hybrid model can be implemented in the activities of a single organization in the case of combining social and commercial goals; in this approach, social enterprise can be considered as a hybrid form (Doherty et al., 2014). The authors of the widely discussed work “Hybrid Organizations

and the Third Sector” believe (and prove on the empirical material) that the reforms of the social service sphere, including the introduction of the principles of managerialism, the development of the “third way” and other reforms related to the introduction of market mechanisms, essentially lead to the gradual transformation of “pure” organizational forms (state, non-governmental, commercial) into mixed ones. Moreover, these processes are observed in all aspects of the functioning of organizations: form of ownership, organizational management, management of human, economic and financial resources (Billis, 2014). In addition, the literature has developed an approach where hybrid organizations are defined as organizations that combine different activities, such as providing services and advocating for public interests or the rights of particular groups, resulting in a so-called service/advocacy organizational form. These kinds of organizations emerge when social service organizations exist in a changing socio-political context and are forced to take on additional functions (Minkoff, 2002).

#### ***NGOs sustainability problem***

The aspiration to develop hybrid forms for non-governmental organizations is largely associated with the desire to achieve a sustainable position. The overall sustainability of NPOs can be considered as an aggregate of various internal types of sustainability: financial and economic, organizational and managerial, personnel, information and technological, communication, and reputational<sup>1</sup> sustainability.

<sup>1</sup> NGO sustainability factors (research report). Centre for Studies of Civil Society and the Nonprofit Sector. Available at: [https://asi.org.ru/wp-content/uploads/2021/12/factory-ustojchivosti-nko\\_niu-vshe\\_asi.pdf?ysclid=lv0ytuyrvo284941531](https://asi.org.ru/wp-content/uploads/2021/12/factory-ustojchivosti-nko_niu-vshe_asi.pdf?ysclid=lv0ytuyrvo284941531) (accessed: May 12, 2024).

Building an effective model of long-term financial sustainability is one of the priorities not only of commercial structures, but also of many non-governmental organizations, as the fulfillment of the social mission and social tasks facing NGOs depends on it. Non-governmental organizations have to look for ways to diversify their income in conditions of financial instability.

The scientific discourse presents various theoretical models of ensuring the financial sustainability of third sector organizations. In this paper, we will outline the main theories that have influenced the hybridization of the social service sector.

The revenue portfolio theory considers non-governmental organizations as structures that have a whole “portfolio” of sources for sustainable financing of their activities (Young, 2007). According to the authors, diversification should be made taking into account possible risks and the volatility degree of different income types: donations, fees for services, grant funds (Tuckman, Chang, 1991).

One possible way to diversify sources is to partner with businesses within the concept of corporate social responsibility (CSR). Cooperation with companies implementing CSR brings a number of advantages to non-governmental organizations: stable funding, expanded network of contacts, and increased brand recognition (Austin, 2000).

The stakeholder theory, or the stakeholder concept, is one of the fundamental theories of corporate social responsibility. In contrast to the traditional model of prioritizing the interests of shareholders, the authors of this approach point to a wide range of obligations that companies have to the entire circle of stakeholders (Petrov, 2004). This circle includes those directly affected by the company’s activities: employees, local communities, and the environment. The researcher

suppose that companies should focus primarily on the interests and needs of the above groups, rather than focusing solely on maximizing profits for shareholders.

#### *Corporate social responsibility theories*

Active involvement in solving social problems is also mentioned in the theory of corporate social performance (CSP), which proposes a systematic approach that includes timely assessment, response and management of such problems (Wartick, Cochran, 1985). CSP emphasizes the importance of strategic planning and integration of social aspects into the overall business strategy of companies. This concept includes three constituent parts:

- 1) principles of social responsibility shared by the company;
- 2) processes within the company that are designed to implement these principles;
- 3) results of the company’s activities in the sphere of its relations with society or stakeholders (Wood, 1991).

The normative pressures faced by companies, especially corporations, force them to conform to societal expectations and norms, which encourages the adoption of CSR initiatives (DiMaggio, Powell, 1983). According to the institutional theory, companies seek institutional compliance to gain legitimacy and social approval (Meyer, Rowan, 1977).

According to the resource-based view, responsible practices can be a source of competitive advantage by building valuable intangible assets such as reputation, employee commitment and stakeholder trust (Barney, 1991). By implementing sustainability principles, companies stand out from competitors and can attract top talent and gain customer loyalty, thereby increasing their long-term profitability and market position.

CSR is in many ways similar to the popular trend of impact investing. The concept of this type of investing is based on the idea that financial

decisions can simultaneously pursue economic and socio-environmental goals. This model is implemented through investors providing capital to organizations that address social and/or environmental issues (Bugg-Levine, Emerson, 2011). However, any investment requires a “return”, in this case social impact, which can be difficult to measure, especially if qualitative rather than quantitative indicators are sought.

#### ***Social entrepreneurship as a hybrid form***

Implementation of commercial activities in the social entrepreneurship format (SE) is an equally popular way for NGOs to ensure their financial sustainability. The SE advantage over other forms of profit-making is its focus on solving social, environmental and/or cultural problems rather than maximizing profits (Dacin et al., 2010). In other words, NGOs implementing entrepreneurial programs are able to generate income while remaining true to their social goals and objectives. Moreover, many authors define social enterprises as hybrid enterprises precisely because their activities combine the goals of financial stability and social mission.

Social entrepreneurship allows NGOs to diversify their sources of income, reducing their dependence on donations and grants (Bagnoli, Megali, 2009). Reducing dependence on external sources of funding helps organizations to be more flexible and independent in the process of resource allocation and implementation of their mission (Weerawardena, Mort, 2006).

In addition to these financial benefits, SE can improve management skills and overall operational efficiency, as it requires NGOs staff to adopt a more entrepreneurial and results-oriented approach to their activities (Austin et al., 2006). It is also worth noting that a market-based approach to solving social and environmental problems increases the effectiveness of social impact delivered by NGOs (Boschee, 2006).

#### **Development of hybrid forms in social sphere**

##### ***Barriers to the development of hybrid models***

Interaction between government, business and NGOs has great potential for addressing global social problems, but to ensure the effectiveness of such partnerships, it is important to overcome a number of barriers – from organizational differences to difficulties in measuring the results of joint initiatives (Selsky, Parker, 2005).

Organizational differences are a key barrier, as government, business and NGO structures have different missions, values and decision-making mechanisms, making it difficult to align joint actions (Bryson et al., 2006). Different partners may have divergent or even conflicting goals, which creates tensions and hinders effective collaboration. Developing agreed indicators and methodologies to measure the effectiveness of joint initiatives is also extremely difficult, making it complicated to monitor outputs and outcomes. Building trust between organizations from different sectors is a determinant of the effectiveness of cross-sector collaboration (Vurro et al., 2010). This requires open communication and a willingness to compromise on all sides. Joint analysis of barriers and opportunities helps to develop realistic goals and optimal responsibility sharing schemes to minimize risks.

##### ***Directions for developing hybrid forms in social sphere***

The prevalence of hybrid models of organizations has increased significantly in recent years. Moreover, this statement can be attributed to both developed foreign countries and Russia.

The empirical data from a joint study conducted by Harvard Business School and Echoing Green (non-governmental organization that provides seed-funded fellowships for aspiring social entrepreneurs) shows a significant increase in the number of “hybrid” applicants for funding. According to the study, the percentage of hybrid

applicants among 3,000 applicants reached 50% between 2010 and 2011, up from 37% in 2006<sup>2</sup>. The data show a hybridization trend in the social entrepreneurship sector. An example is the experience of the American organizations Embrace and OrganJet. Embrace, established in 2008 as a non-governmental organization to provide free heating pads to low-birth-weight babies; in 2012, it created a company Embrace Innovations, a for-profit company that designs, manufactures and clinically tests the heater<sup>3</sup>. The outcome was not only stable funding for the non-governmental organization, but also expansion of activities by combining the resources of the third sector and the business sector. OrganJet also consists of two organizations linked to each other<sup>4</sup>. The commercial arm of the organization runs programs to transport patients to transplant centers on an emergency basis. The non-governmental arm, Guardian Wings, helps subsidize this travel for those who do not have the necessary funds (the cost of such transportation ranges from 8,000 U.S. dollars to 10,000 U.S. dollars per hour). The cost of such transportation is covered by private donations as well as revenue from the commercial division. The hybrid model in this case allows reaching more people in need.

Hybrid models have been actively developing over the previous decades, including in the form of public-private partnerships in Russia's social sphere (Zavyalova, Tkachenko, 2018; Barkov, Serova, 2016). In addition, the practice of commercial organizations creating their own non-governmental structures, mainly charitable foundations was quite widespread. It allowed businesses to implement corporate social responsibility programs and

philanthropic initiatives in a more systematic and structured way.

One of the pioneers in this area was the oil company Lukoil, which established the Lukoil Charity Fund in 1993 to implement social projects and programs<sup>5</sup>. Subsequently, other large mining companies, such as Nor Nickel, Rusal and others created similar structures. Currently, most of such corporations implement projects within the framework of corporate social responsibility and ESG principles, support charitable activities, investments in the regions of presence and professional development programs<sup>6</sup>. Social projects allow companies to receive tax benefits, increase brand recognition and reputation in the public's eyes.

However, the opposite trend has emerged in Russia in the previous decade, when NGOs began combining elements of non-commercial and commercial activities, for example, creating affiliated business structures and/or developing commercial lines of activity. Researchers consider this practice as a way to ensure financial sustainability of the third sector and reduce dependence on external sources of funding such as grants, subsidies and donations (Starshinova, Borodkina, 2022). According to the institutional isomorphism theory, non-governmental organizations copy the organizational practices of businesses to later open their own for-profit divisions and ensure sustainable access to funding.

<sup>2</sup> Beyond Heroic Entrepreneurs. Available at: <https://hbswk.hbs.edu/item/beyond-heroic-entrepreneurs> (accessed: October 1, 2024).

<sup>3</sup> Non-governmental organization "Embrace Global". Available at: <https://www.embraceglobal.org> (accessed: October 1, 2024).

<sup>4</sup> OrganJet Corporation. Available at: <http://www.organjet.com/home.html> (accessed: October 1, 2024).

<sup>5</sup> Non-governmental organization Lukoil Charity Foundation. Available at: [https://bflukoil.ru/who\\_we\\_are/about\\_fund/](https://bflukoil.ru/who_we_are/about_fund/) (accessed: May 12, 2024).

<sup>6</sup> NRA's annual analytical review "ESG ranking of Russian companies in the industrial sector". National Rating Agency (2024). Available at: [https://www.ra-national.ru/wp-content/uploads/2024/01/esg-rjenking-rossijskih-kompanij-promyshlennogo-sektora-22.01.2024\\_\\_\\_\\_.pdf](https://www.ra-national.ru/wp-content/uploads/2024/01/esg-rjenking-rossijskih-kompanij-promyshlennogo-sektora-22.01.2024____.pdf) (accessed: May 12, 2024).

Hybrid organization theory confirms that NGOs are now increasingly beginning to combine characteristics of both the non-governmental and for-profit sectors (Billis, 2014). However, such activities carry a risk of conflict between NGO management, its key beneficiaries, and donors.

A number of empirical studies (Battilana et al., 2015; Kwong et al., 2017) confirm the prevalence of the practice of opening business units or creating affiliated organizations in NGOs. According to the researchers, the main motivations for this are diversification of funding sources and reduction of dependence on grants/donations; use of commercial opportunities to generate additional profit; improvement of organizational efficiency through the application of business methods.

Nevertheless, these studies have identified a number of barriers and risks faced by hybrid organizations, such as the difficulties of integrating for-profit and non-profit goals and activities; challenges of transparency and accountability to stakeholders; and the need to develop management competencies different from traditional NGOs.

However, in addition to “hybrid” organizational forms integrating non-profit and commercial activities, various forms of partnership between business structures and non-governmental organizations are formed. In these cases, NGOs initiate the formation of an autonomous commercial subdivision or an independent commercial organization, with which they further interact within the framework of a cluster association. This approach allows separating commercial operations from the core non-commercial activities, providing a clearer delineation of organizational missions and goals. At the same time, interaction in the cluster format makes it possible to build effective mechanisms of cooperation and achieve synergy between partners with different organizational and legal forms.

The creation of autonomous business units affiliated with NGOs may be driven by a number of factors, such as the need for regulatory compliance, tax optimization, investment attraction or risk management. It also allows commercial operations to be concentrated in a separate entity managed by a professional team.

Such hybrid cluster models open up opportunities for the cross-funding of social programs by reallocating funds from a for-profit partner to a non-governmental organization.

Thus, contemporary Russia has the opposite trend – the creation by non-governmental organizations of commercial enterprises affiliated with them, while maintaining the model in which commercial structures develop NGOs established by them. Such organizations should ensure the financial sustainability of NGOs, as part of their profits goes to support the activities of non-governmental structures. This process opens up new opportunities for the non-governmental sector development, but requires finding a balance between the commercial and social components of such partnerships.

#### **Research methods**

As part of the research, we studied the activities of NPOs in various constituent entities of the Russian Federation (Saint Petersburg, Leningrad Region, Penza Region, Sverdlovsk Region, Stavropol Territory, etc.). The main method of data collection was an expert interview with the use of a guide, which included questions united in the following blocks: “state support”, “interagency interaction”, “social investment”, “practices of work with service recipients”, “digitalization”. Purposive sampling was used to attract informants; the selection criteria were relevant experience of working in NGOs as a specialist or head of an organization. More than 30 expert interviews were conducted with NGO

managers and staff<sup>7</sup>; as a result, we selected two cases for analysis, which clearly demonstrate the formation of a new institutional environment for the non-governmental sector associated with the development of a hybrid model. These cases relate to non-governmental organizations working with people with special needs, building quite effective interaction with commercial structures, but on different principles.

The first case is a non-governmental organization from Penza, which removed a commercial subdivision from its structure. The second case is an NGO from Kislovodsk, which created a cluster that includes both non-governmental and commercial organizations. We chose these cases due to the following factors: different models of interaction with commercial units (separation of a business unit and creation of a cluster), geographical diversity (the first case is Volga Federal District, the second case is North Caucasus Federal District), similar key group of beneficiaries (children and adults with disabilities).

The research results will be achieved through a detailed analysis of each case study. We considered the following aspects for each organization: history and motives for creating a commercial unit, organizational structure, sources of funding for non-governmental activities (including the role of income from the commercial structure), advantages and disadvantages of the applied model of interaction.

### **Research results**

#### ***History and motives for establishing the commercial division***

In Penza, the partnership between NGOs and business structures was formed in the early 2000s.

*“We have three organizations that work closely together. They are the Fund “Svyatoe Delo”, the Back Treatment Center (“Tsentr lecheniya spiny”) – a commercial OOO organization, and ANO helping people with ASD “Step by Step”. The Center was once a for-profit part of the Fund “Svyatoe Delo”. In 2005, when it was organized, it was created as a permanent source of income of some kind, which could then be used to implement social services and help the foundation. But it became unclear to people how it was possible to have such a commercial direction as part of a non-governmental foundation. So, we decided to separate everything organizationally and legally”* (Director of a charitable fund, Penza).

Many NGOs that carry out commercial activities seek to remove divisions from their membership for increasing transparency and trust in the organization. Such a decision is largely due to the fact that commercial activities may raise doubts among the public and sponsors and negatively affect the NGO’s reputation. According to the head of one of Penza limited liability company (OOO), it was this motivation that became the key reason for the decision to withdraw a commercial subdivision from the foundation.

*“Initially, the Back Treatment Center was an entrepreneurial direction of the Fund “Svyatoe Delo”, but later it was registered as a separate legal entity. Since 2021, the Center has been included in the register of social enterprises of the Penza Region as an organization that sells goods and services for vulnerable groups”* (Head of OOO, Penza).

According to the head, the medical and educational cluster chosen by us as the second case study in Kislovodsk is a unique example of interaction between socially oriented structures in Russia.

*“We created a medical and educational cluster last year. It is the first one, I don’t know of any analog in Russia, so we are going as pioneers, a cruiser like this, breaking some ice of misunderstanding”* (NGO leader, Kislovodsk).

<sup>7</sup> The interviews were conducted in 2022–2023 as part of the RSF project 19-18-00246-P “Challenges of Social State Transformation in Russia: Institutional Change, Social Investment, and Digitalization of Social Services”.

According to the head, the motivation for this was the lack of funding and the significant workload of NGOs.

*“There are not enough finances, because you can’t even imagine the amount of work that we have”* (NGO leader, Kislovodsk).

The cluster allowed for additional revenue generation and distribution of workload and customer flow among the cluster member organizations.

### **Organizational structure**

The first case represents a partnership between two charitable organizations implementing projects in the field of rehabilitation of children and adults with disabilities, as well as an OOO, whose specialists provide paid services – treatment of musculoskeletal system diseases using non-surgical methods.

*“The Back Treatment Center is a partner of the Fund “Svyatoe Delo” and “Step by Step” funds”* (Head of OOO, Penza).

The second case is a cluster established on the basis of an agreement on joint activities of socially oriented organizations and including an OOO, a charitable foundation and an association. The differentiation of responsibility areas (attraction of finances, provision of social and educational services, implementation of charitable projects) allows the three organizations within the cluster to effectively achieve their goals.

*“We have introduced three organizations into the cluster – a commercial organization OOO, we called the cluster “Ryabina”, that is, the commercial organization is OOO, the next organization is a charitable foundation, to still attract some financial offers, some financial resources, these three organizations, and our AO school No. 21 and NGO, it turns out OOO, NGO and charitable foundation”* (NGO head, Kislovodsk).

### **Sources of funding for non-governmental activities**

Working within a cluster allows redirecting one or another activity to a more appropriate organization, for example, providing paid services – to a commercial organization, and the implementation of socially important projects – to a charitable foundation.

*“Now we provide medical services to OOO Ryabina because services are paid, and non-profit organizations cannot do it too”* (NPO head, Kislovodsk).

As we have noted earlier, it was the lack of funding that was the key motivation for the creation of the cluster. Even despite receiving grants and subsidies, financial resources were insufficient to fully implement the activities of the organization.

*“Well, we obtain grants, we receive subsidies from the Ministry of Labor and Social Protection and now, when we realized that we are somewhat lacking in finances, we have moved to that thing ... colleagues are constantly surprised how it (the region – author’s note) does not support us, but in any way”* (NGO head, Kislovodsk).

In addition to business structure support, the projects of charitable organizations in the first case study actively receive support from the Presidential Grants Fund, which, according to the director of one of the organizations, was a significant help at the beginning of the foundation’s journey. Legal organizations-sponsors also provide assistance to NGOs, which also affects the financial sustainability of the organization.

*“When the foundation was organized, we started implementing this project, and we were very lucky that in the same year we won a competition in the presidential grants fund, which allowed buying the equipment needed here, immediately hire specialists and develop this area. Naturally, almost all children who are rehabilitated here receive services free of*

charge. *How does this happen? We have a program that is sponsored by concerned people, our sponsors, a certain number of children. And in cooperation with the Fund "Svyatoe Delo", a charity event is held* (Head of the charity fund, Penza).

Nevertheless, the role of partner business structure support remains the most significant among all the above-mentioned funding sources.

*"That is, we implement all projects in partnership with a commercial enterprise, which is a social enterprise, which is included in the Penza Region register of social enterprises. So, of course, we have a good base for implementing large-scale projects"* (Head of the charity fund, Penza).

#### ***Advantages and disadvantages of the applied interaction model***

In the considered cases of combining for-profit and non-governmental organizations, it is possible to identify both common characteristics and specific advantages and disadvantages of each approach.

A common advantage is the ability to ensure financial sustainability of social initiatives by diversifying income sources and raising funds from commercial activities. This reduces the dependence on grants, donations and government funding; nevertheless, organizations do not seek to abandon them and exist solely at the expense of their own funds obtained from the implementation of commercial activities.

In the first case (partnership of charity organizations and commercial structure), the key advantage is the synergetic effect of combining efforts. An integrated approach, combining non-governmental programs and commercial services, allows solving the problems of rehabilitation of children with disabilities more effectively.

*"As a matter of fact, the center (Back Treatment Center – author's note) is still the base for implementing all our projects, it's staff, premises, the opportunity to share costs, and training, because*

*training is very expensive. It costs about 100 thousand to send one specialist. If it is a serious training with practice, with exams and certification, it is about 100 thousand. When all this is divided into commerce and we make our own contribution, it makes the work easier"* (Head of the charity fund, Penza).

The opportunity to upgrade the specialists' qualification at the expense of the business structure allows improving the quality of services, but, as the head of the charity fund notes, there is a tendency of specialists' outflow, which complicates the work of the commercial structure and affects its reputation.

*"In general, the Back Treatment Center is a forge of personnel. It is impossible to count how many instructors have come from us. And for some reason there is such a tendency, probably not only with us, that a person, having worked and trained in a method, thinks, why don't I open such an office myself? And I already know several people who have been trained, worked with us, built up a client base and opened their own offices. It's frustrating because, first of all, it draws away clients, and second, it's the reputation of our center"* (Head of the charity fund, Penza).

At the same time, a significant disadvantage is the risk of conflict of interest and dilution of the NGO's mission due to commercialization of activities.

In the second case study (creation of a cluster of socially oriented organizations), the main advantage is the formation of a sustainable ecosystem through the integration of diversified actors. Combining the competencies of NGOs, associations and commercial structures allows comprehensively covering various aspects of the social tasks to be solved. Within the cluster, it is possible to flexibly redistribute financial flows to increase the sustainability of organizations. The strength of the cluster also lies in the combined enhancement of influence and recognition. However, the large number of participants can create serious diffi-

culties in coordinating and harmonizing interests. There are high risks of contradictions between commercial and non-commercial goals, as well as problems in the distribution of authority and responsibility.

The presented cases of partnership between non-governmental and business structures reveal their substantial potential for ensuring financial sustainability of social initiatives, but they have significant differences in terms of prospects and limitations. Partnership of charitable organizations and business structures is simpler in managerial terms, but in this case, there may be a risk of conflicting interests of the parties. Creation of a cluster is a more labor-intensive process, but the integration of diversified participants provides broader opportunities for implementing social programs.

### **Conclusion**

Third sector organizations, facing the problem of financial sustainability, seek and develop new institutional forms of social service provision. Possibilities of receiving state funding in the form of subsidies and grants do not fully meet the needs of the third sector; first of all, in the first case – due to low tariffs and bureaucratic barriers, and in the case of grants – due to high competition among non-governmental organizations. In this situation, the most active NGOs connect their activities with the development of hybrid forms. And it is not only a question of interaction between NPOs and existing commercial structures, which could assume the role of a kind of sponsor and/or partner. The cases discussed in this article present the practice of establishing affiliated commercial structures on the basis of NGOs, which either replicate successful social practices on a commercial basis or develop other commercial services related to the core activities of the non-profit organization, although other options of cooperation are also possible. It is

worth noting that in both cases the organizations actively cooperated with state structures and received some support, including the provision of premises.

The hybrid format opens new prospects for the third sector, which allows diversifying resources through the interaction of non-governmental and commercial structures and building a more effective interaction with regional authorities. We should say that the development of hybrid organizations corresponds to the ongoing reforms in the social sphere, aimed, on the one hand, at improving the accessibility and quality of social services, and on the other hand, at increasing the economic efficiency of this sphere.

Successful implementation of the hybrid approach not only strengthens the NGOs' financial sustainability, but also contributes to increasing social effect of their activities. Further development of the third sector is obviously largely connected with the introduction and adaptation of such practices.

The research results allow expanding our understanding of institutional transformations in the third sector and demonstrate innovative approaches to solving social problems. Despite the fact that the empirical study is limited to two cases, it, together with the data from expert interviews, reflects the trend toward the use of a hybrid format by Russian NGOs, which corresponds to global trends. The features of this process in Russia are due to the specifics of the institutional context, which implies close interaction not only with state institutions, but also with authorities, primarily regional ones. In addition, there is a need to adapt the regulatory framework for the use of hybrid forms in the social sector.

The relevance of studying the hybridization of the third sector is dictated by the ongoing processes of transformation of the service sector. Further

studies of hybrid organizations in the sphere of comparison with traditional NGOs, as well as to social services should be primarily related to the the study of long-term impact on the third sector analysis of the effectiveness of hybrid forms in development in Russia.

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## Assessing the Well-Being of Child Population in the Northwestern Federal District



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**Abstract.** One of the key challenges for modern states is change in the age structure of the population – a decline in children’s share and an increase in the elderly’s share. In Russia, associated with the declining birth rate, the number of children and their share in the population are also decreasing. This foregrounds the search for manageable factors for preservation of child population’s health and the turn to a comprehensive consideration of the environment that influences it. Children’s well-being is a complex concept reflecting a wide range of issues, ranging from children’s health to the standard of living of their families. Though this issue is of interest, there are only few works devoted to the assessment of children’s well-being in Russian regions. The aim of the study was to assess changes in the child population and characteristics of its well-being in the regions of the Northwestern Federal District. The informational background includes statistical data, results of population surveys, and data of sample observations on socio-demographic issues conducted by the Federal State Statistics Service. It is demonstrated that in spite of the small child population in the regions of the Northwestern Federal District, a steady trend of reducing infant mortality has developed. However, high incidence of disease indicates the continuing risks of loss of children’s health. Based on the analysis of statistical data, it was found that indicators of well-being of the child population in the regions of the District are differentiated. Advantage factors uniting most of the regions under consideration are high provision of children with preventive medical examinations, hot meals in schools, as well as a relatively high degree of their involvement in sports activities. The most pronounced obstacles to achieving children’s well-being in the Northwestern Federal

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District are the low level of meeting the need for families with children to improve housing conditions, insufficient number of pediatricians, and a high share of families with incomes below the poverty line in some regions.

**Key words:** quality of the child population, children's well-being, regional studies, families with children.

### Introduction

The decline in proportion of children and the simultaneous increase in proportion of the elderly cause a complex of demographic and socio-economic challenges that modern states face. As of January 1, 2024, the Russian population was 146.2 million people, among them children aged 0–15 numbered 26.8 million people (18.4%). In comparison with 2000, the total population decreased by 0.5 million people, and the number of children increased by 0.4 million people<sup>1</sup>. Due to this, proportion of children has increased slightly. However, this result is not the beginning of a positive trend, since in the near future the number of children will begin to decrease due to the lower birth rate. According to the Rosstat's medium scenario, by 2030 the number of Russian children aged 0–15 will decrease to 23.1 million people, and their proportion will decrease to 16%. And a quick change in the adverse trend is not expected. Even in the mitigated demographic scenario, Rosstat predicts the value of the total fertility rate (TFR) at the level of 1.788 only by 2045<sup>2</sup>.

In the context of a decrease in the number of children in Russia, particular attention should be paid to solving interrelated tasks: ensuring quality of life of the child population and creating conditions for achieving children's well-being. At the same time, children's well-being can be considered as a complex concept reflecting the level of well-being achieved in various spheres of children's life: ranging from physical health and

psychological well-being to financial situation, educational results, life safety and social participation.

The National Strategy for Action on Children was implemented in the Russian Federation in 2012–2017, which was widely discussed in the expert community (Kalabikhina, 2015), and since 2018, the implementation of the Decade of Childhood program has begun. Such large-scale projects confirm that well-being of children is the target of national policy, it acts as a condition for sustainable development of the territory and reproduction of its population (Rimashevskaya, 2011). At the same time, researchers note the presence of a number of methodological problems that make it difficult to systematically study children's well-being in Russia. These include, first, the lack of an unequivocal interpretation of the concept "children's well-being" (Kuznetsova, 2020), second, the disparity of methodological approaches used to assess it, and third, the incompatibility of statistical data and its incompleteness (Besschetnova, 2019).

The term "children's well-being" has come into usage in the Russian practice of socio-economic research and in the practice of public administration relatively recently. In the Soviet period, the term with the opposite connotation – children's ill-being – was more familiar and widespread. And both the attention of researchers and the interests of social sphere specialists were focused on identifying "troubled" children and families, building the most effective system of working with them aimed at overcoming specific manifestations of ill-being. This approach led to the stigmatization of certain categories of families and the children

<sup>1</sup> Population of the Russian Federation by gender and age: Statistical bulletin. Available at: <https://rosstat.gov.ru/compendium/document/13284>

<sup>2</sup> Demographic projection. Demographics. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/12781#>

who were raised in them. The situation changed when there was a transition to a new terminological system and a reinterpretation of the origin of social ill-being. It was recognized that, first, the ill-being of children and families is a consequence of the life circumstances in which they find themselves, and not their nature, and second, that the state is also responsible for creating living conditions contributing to achieving the absolute well-being of all children (Iarskaia-Smirnova et al., 2014).

In sociological sciences, the theoretical basis for considering the relationship between categories “children’s ill-being” and “children’s well-being” is the concept of social exclusion. Within its framework, the relationship of these terms is revealed through an assessment of the degree of accessibility of various social and economic benefits for children and their families, as well as through an assessment of children’s inclusion in public life and creative activities (Iarskaia-Smirnova et al., 2014).

Due to the variety of existing theoretical approaches to understanding children’s well-being, different approaches to measuring it are proposed. In foreign studies, the methodology for calculating its indicators, as a rule, includes sub-domains of children’s self-assessment of various aspects of their own lives, assessment of satisfaction with them and psychological well-being (Sollis, Edwards, 2022). Much attention in foreign studies is paid to the development of methods of mathematical processing of data that allow identifying the most important predictors of children’s well-being. For example, using the social networks analysis (SNA method), 13 causal loop diagrams (CLD), which visualized the relationship between locally significant factors promoting health and well-being of children and young people, were combined into one CLD reflecting the consolidated opinion of 13 local communities. This procedure made it possible to identify the most important predictors of well-being of children and young people. It has been established that the key determinants of

health-related well-being are social connection and support, access to services and supporting environments (O’Halloran et al., 2024). Earlier, the authors of the work (Brennan et al., 2015) came to similar conclusions. On the basis of a narrower issue – provision of school lunches – the importance of considering complex nonlinear relationships between actors in making managerial decisions was demonstrated using the CLD method (Chote et al., 2022).

The methodological principle followed by foreign researchers of children’s well-being is the mandatory inclusion of the opinions of children themselves in indicators of children’s well-being. This principle corresponds to the right of children, enshrined in the UN Convention, to express their opinions and be heard<sup>3</sup>. There is a widespread practice of expert discussion of approaches to assessing indicators of children’s well-being, including involving children themselves in counseling as a part of special methodological measures (Mason, Danby, 2011). It should be noted that the Russian expert community has not yet reached an agreement on the forms of children’s participation in making decisions that affect their interests (Abrosimova et al., 2019). Researchers note that specialists working in this area directly with children experience a lack of information and methodological support. Collectively these barriers make it difficult for children to be involved in decision-making at micro and macro levels (Kuchmaeva, 2020).

When assessing children’s well-being and searching for its key predictors, attempts are being made to use longitudinal observations. This approach has a number of advantages, since a researcher has the opportunity to monitor changes of indicators of children’s well-being and see the

<sup>3</sup> Convention on the Rights of the Child. Adopted by the UN General Assembly resolution 44/25 on November 20, 1989. Available at: [https://www.un.org/ru/documents/decl\\_conv/conventions/childcon.shtml](https://www.un.org/ru/documents/decl_conv/conventions/childcon.shtml)

transitions in children's lives (Goswami et al., 2016). This enables to assess the influence of significant factors on different components of children's well-being.

A promising method of assessing children's well-being, most adapted to Russian realities, is the index system developed by a team of representatives of Moscow State University, RANEPa, and the Timchenko Foundation, which includes statistical, subjective, and generalized indices of children's well-being. Based on the methodological recommendations proposed by the authors, it is possible to conduct a comprehensive assessment of children's well-being at the regional level (Kalabikhina et al., 2023). The results of the application of this index method to assess material well-being of children in the regions of Russia are reflected in the work (Kalabikhina et al., 2024).

Currently, we are experiencing a lack of studies that provide a comprehensive assessment of children's well-being at the regional level. Only a few works by Russian authors attempt to carry out such an assessment using methods of mathematical data processing, including factor, cluster and regression analysis (Sarycheva, Pushkareva, 2022). Nevertheless, solving the issue of ensuring children's well-being requires a comprehensive understanding of its current state at the regional level.

The aim of the study is to assess changes in the child population and characteristics of its well-being in the regions of the Northwestern Federal District (NWFD). In this regard, the following tasks are set:

1) to analyze changes in the child population in the regions of the Northwestern Federal District in the period 2000–2024;

2) to consider changes in health indicators of the child population in the regions of the Northwestern Federal District;

3) to assess the level of provision of the child population with health and educational services in the regions of the Northwestern Federal District and its interregional differentiation;

4) to characterize key indicators of the standard of living of families with children in the regions of the Northwestern Federal District (income, housing provision);

5) to compile a generalized description of the regions of the Northwestern Federal District in terms of children's well-being.

#### **Materials and methods**

The analysis of changes in the child population is included in the work due to the need to assess the development of the object of research in the period under review (2000–2024), as well as in the coming decades. The changes in the child population were considered at the level of individual regions of the Northwestern Federal District on the basis of official statistical data, the demographic projection by Rosstat and its regional office in the Vologda Region.

Children's well-being was researched in the study in the context of its specific characteristics: infant mortality rate, child population health, availability of health services for children, housing conditions and financial situation of families with children, safety of children in the family. In addition to statistics, microdata from sample surveys of Rosstat on socio-demographic problems were used to analyze certain aspects of children's well-being in the regions of the Northwestern Federal District.

The Discussion section presents a generalized assessment of children's well-being in the regions of the Northwestern Federal District based on the distribution of points of its individual parameters. The assessment was carried out in several stages. The list of indicators for a generalized assessment of children's well-being included indicators reflecting the infant mortality rate (its decrease rate), health (proportion of disabled children, proportion of children of the first health group) and lifestyle characteristics related to health (children's involvement in sports, provision of hot meals in schools), density of pediatricians, provision of additional education services, income level of

families with children, opportunities to improve their housing conditions. The list did not include indicators of safety of the family environment (cases of family violence), since there is no data on them at the level of individual regions. Next, the regions were ranked by magnitude of the values of each of the indicators. Then, based on dividing the range of observed values into three equal intervals, point scales were set for each indicator: 1 point was assigned to the range of values that corresponded to the least favorable situation, and 3 points were assigned to the most favorable situation.

The completed study has a number of methodological limitations. The presented generalized assessment makes it possible to more clearly reflect the complex of existing interregional differences in the values of indicators of children's well-being, but it is not a universal methodological tool for monitoring children's well-being.

The study focused on objectively measurable characteristics of children's well-being, whereas the analysis of subjective assessments of well-being was not among its tasks. Of course, conducting such an analysis in the future can expand and clarify the conclusions we have obtained.

The methodological limitation of the work is also the fact that it did not include the well-being of orphaned and legally free children. In our opinion, this issue deserves a separate in-depth consideration.

The information base of the study includes statistical data on the child population published by the Federal State Statistics Service, data from the All-Russian Census of Population (2020), population prospects developed and published by the UN Population Division; demographic scenarios developed by the Federal State Statistics Service; data on children's well-being published by the Federal State Statistics Service, statistical data on health of the child population, data from the Unified Interdepartmental Statistical Information

System (EMISS) on the density of pediatricians; statistics characterizing conditions in families with children, published in the topic section on the website of the Federal State Statistics Service, official statistics of the Medical Information-Analytical Center (MIAC) of the Vologda Region Health Service Department. Microdata of sample surveys of Rosstat were also used: Sample survey of incomes of the population and participation in social programs (2023), Sample survey of health status of the population (2023), Sample survey of daily time use by the population (2019).

## Results

### *Changes in the child population and scenarios of these changes*

As of the beginning of 2024, 2.5 million children aged 0 to 17 lived in the regions of the Northwestern Federal District (NWFD). The number of children in Russia and in the regions of the Northwestern Federal District decreased by 13 and 20%, respectively, from 2000 to 2024. The most pronounced losses were observed in such regions as the Komi Republic (45%), the Republic of Karelia (42%) and the Arkhangelsk Region (41%; *Tab. 1*).

The downward trend in the child population is associated, among other things, with a decrease in the population of women of childbearing age (Soboleva et al., 2023). Thus, the structural factor continues to negatively affect the birth rate, despite the state's stimulating pro-natalist measures. In general, according to expert estimates, the total fertility rate may still grow in the long term and reach 1.77 by 2050 (Kozlov, Arkhangelskiy, 2021).

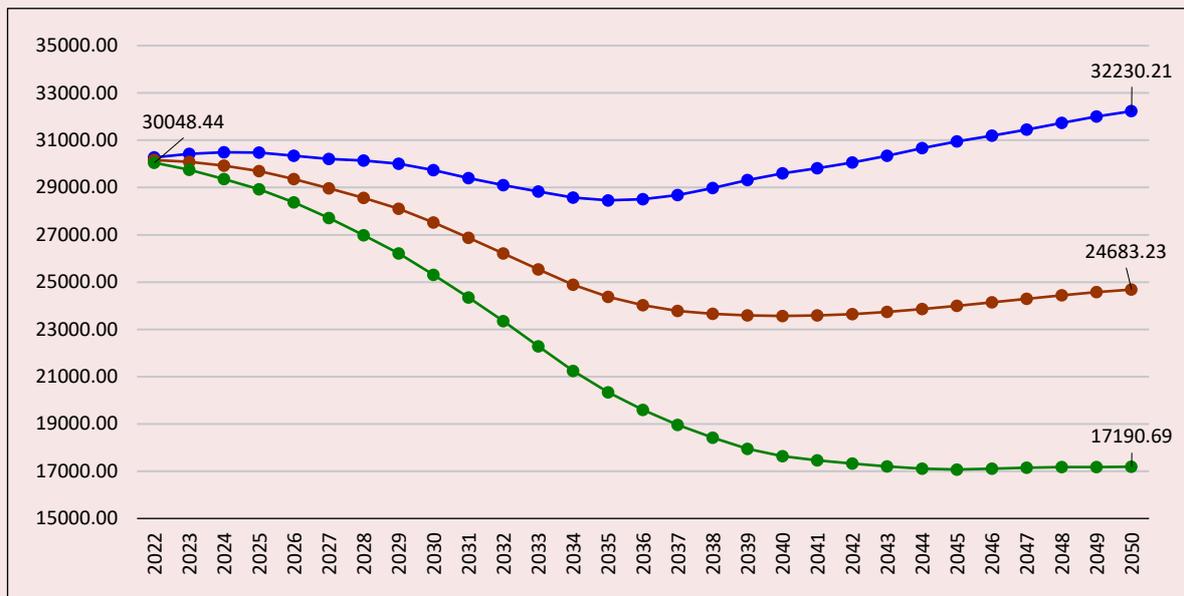
According to the most authoritative population projections prepared by the UN Department of Economic and Social Affairs, the child population in the Russian Federation for the period from 2022 to 2050 will decrease by 18.2% in the medium scenario, by 43% in the low-fertility scenario, and only in the high-fertility scenario it may increase by 6.5% (*Fig. 1*).

Table 1. Population aged 0–17 in the regions of the NWFД in 2000–2024, thousand people

Territory	2000	2005	2010	2015	2020	2021	2022	2023	2024	2024 to 2000, %
Russia	34582.6	29304.1	26336.2	28481.3	30459.3	30402.5	30319.0	30172.9	29960.3	-13.4
NWFD	3114.0	2534.7	2217.1	2390.2	2555.2	2540.6	2526.3	2517.8	2505.2	-19.6
Republic of Karelia	173.8	138.5	116.1	110.3	105.9	104.3	102.9	101.7	100.7	-42.1
Komi Republic	269.9	215.2	181.6	170.9	161.9	158.7	154.7	152.0	149.9	-44.5
Arkhangelsk Region	337.3	269.7	230.5	223.3	216.9	212.4	208.0	204.2	200.2	-40.6
Vologda Region	302.7	250.7	219.8	235.5	248.6	247.1	245.0	241.4	237.7	-21.5
Kaliningrad Region	215.5	183.5	165.6	183.7	204.3	203.6	204.8	204.1	202.3	-6.1
Leningrad Region	355.1	294.8	261.9	283.9	307.4	308.7	313.3	318.3	319.4	-10.1
Murmansk Region	215.4	172.3	144.0	144.3	146.0	143.5	141.3	139.5	138.2	-35.9
Novgorod Region	154.8	126.1	107.2	112.4	117.7	116.8	115.9	114.2	112.4	-27.4
Pskov Region	168.2	134.6	110.6	110.6	112.7	110.9	109.7	108.0	106.3	-36.8
City of Saint Petersburg	921.3	749.3	679.8	815.1	933.9	934.6	930.6	934.5	938.1	1.8

Source: own calculation on the basis of Rosstat data on the population by specific age (Population of the Russian Federation by gender and age: Statistical bulletin. Available at: <https://rosstat.gov.ru/compendium/document/13284>).

Figure 1. Scenarios of changes in the Russian population aged 0–17, according to the UN projection, 2022–2050, thousand people



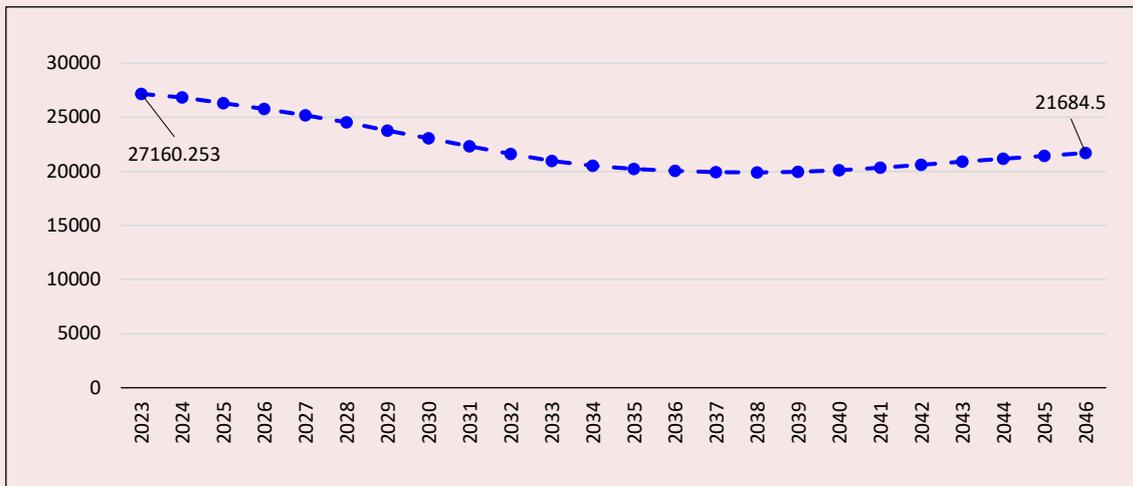
Source: World Population Prospects 2022. Department of Economic and Social Affairs, Population Division. Available at: <https://population.un.org/wpp/Download/Standard/Population/>

The Federal State Statistics Service does not provide projections of the child population aged 0–17. The projective number of children in Russia can be estimated only approximately, based on the data published by Rosstat on the population under working age (0–15 years). The projective number of children aged 16 and 17 is calculated only as part of the working-age population and is not published

separately from adults. Despite this limitation, it is possible to get an approximate idea of future changes in the country’s child population.

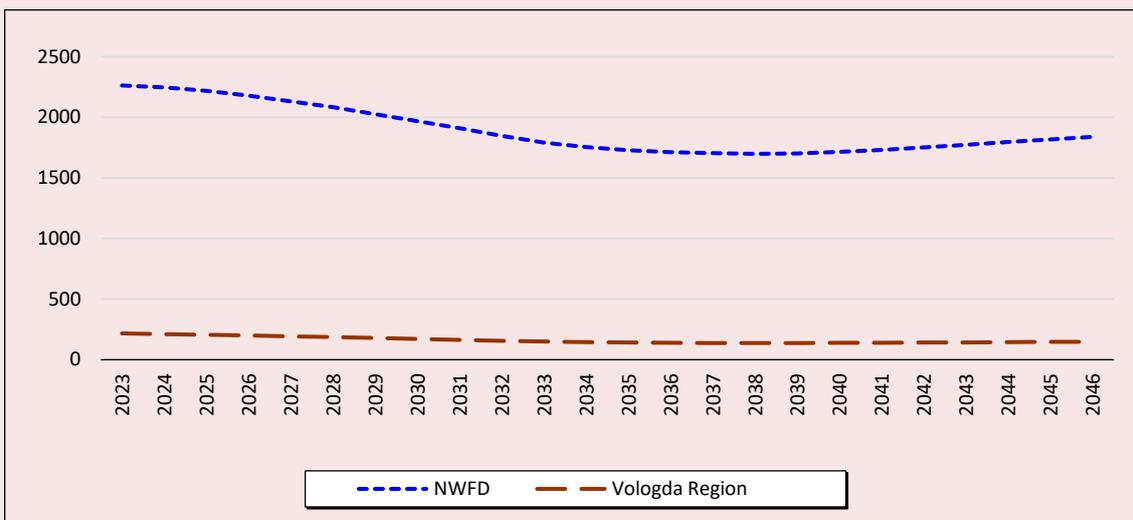
According to Rosstat’s projection, the population of Russia under working age by 2046 will amount to 21.7 million people, which is 20.2% lower than the level as of January 01, 2023 (27.1 million people) (Fig. 2).

Figure 2. Projected population of Russia under working age according to Rosstat’s projection, 2023–2046, thousand people



Source: Projected population of the Russian Federation. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/compendium/document/13285>

Figure 3. Projected population of the Northwestern Federal District and the Vologda Region under working age according to Rosstat’s projection, 2023–2046, thousand people



Source: Projected population of the Russian Federation. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/compendium/document/13285>

In the Northwestern Federal District and the Vologda Region, according to Rosstat's projection, the population under working age will also steadily decline until 2038, and then begin to grow slowly. By the end of the projection period, the number of children in the NWFD will amount to 1698.8 thousand people, and in the Region – 137.3 thousand people (14.3% of the total population; *Fig. 3*).

An analysis of regional trends in the projected population under working age in the Northwestern Federal District allows us to conclude that seven constituent entities of the Northwestern Federal District have population trends similar to that of the District in general. The regions where the decline in the indicator under consideration will be observed until 2038, in addition to the Vologda Region, include the Kaliningrad, Leningrad, Murmansk, Novgorod and Pskov regions, as well as the city of Saint Petersburg. In a number of regions, the decline of the population aged 0–15 will last longer: in the Republic of Karelia and the Arkhangelsk Region – until 2040, and in the Komi Republic, recovery growth is not expected until the end of the

projection period (until 2046). Earlier than in other territories of the Federal District, the trend of the indicator will go upward in the Leningrad (after 2035) and Kaliningrad (after 2037) regions<sup>4</sup>.

Demographic projections published by Vologdastat are the most reliable for the Vologda Region. These projections have an undeniable advantage over those of Rosstat: they provide a projected population by one-year group. For example, the statistical book of 2021 contains information on the projected population for the period up to 2036<sup>5</sup>. According to this projection, by 2035, the child population of the Vologda Region is expected to decrease to 184,656 people (from 247,771 in 2021)<sup>6</sup>.

The most important indicator of children's well-being used for international comparisons is infant mortality. According to nationwide and regional statistics of the Northwestern Federal District, its level steadily decreased in 2000–2023. The most significant decrease was recorded in the Kaliningrad Region, the Republic of Karelia, the Arkhangelsk and Novgorod regions (*Tab. 2*).

Table 2. The number of children who died before the age of 1 per 1000 live births per year, 2000–2023, per mille

Territory	2000	2005	2010	2015	2020	2021	2022	2023	Decrease rate, 2023 to 2000, %
Russia	15.3	11	7.5	6.5	4.5	4.6	4.4	4.2	-72.55
NWFD	12.8	9.4	5.6	5.3	3.7	4.2	4	4.1	-67.97
Republic of Karelia	14.4	9.6	4.9	5.7	4.4	3.7	5.1	3.1	-78.47
Komi Republic	13	8.7	5	4.6	2.3	5.3	4	4.9	-62.31
Arkhangelsk Region	14.1	12.6	6.8	6	3.4	3.8	4.4	3.2	-77.30
Vologda Region	16	11.6	7.4	5.8	5.5	5.3	3.6	6	-62.50
Kaliningrad Region	19.6	11.3	4.5	6.1	3.8	4.1	5.4	3.4	-82.65
Leningrad Region	10.3	9.8	6.1	6	3.9	3.6	3.8	3.7	-64.08
Murmansk Region	12.5	11.2	5.3	5.9	3.8	6	3.8	4.7	-62.40
Novgorod Region	14.1	9.7	7.2	6	4.1	4.9	4.3	3.2	-77.30
Pskov Region	15.1	12.8	7.9	7.7	4	5.6	5.7	4.6	-69.54
City of Saint Petersburg	9.5	6	4.7	4.4	3.4	3.7	3.5	4.1	-56.84

Sources: The number of children who died before the age of 1 per 1000 live births per year. The Unified Interdepartmental Statistical Information System. Available at: <https://www.fedstat.ru/indicator/31166>; Infant mortality (per 1000 live births). The Unified Interdepartmental Statistical Information System. Available at: <https://www.fedstat.ru/indicator/55376>

<sup>4</sup> Projected population of the Russian Federation. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/compendium/document/13285>

<sup>5</sup> Projection of the population and migration of the Vologda Region until 2035: Statistical book. Rosstat regional office in the Vologda Region. Vologda, 2021.

<sup>6</sup> Own calculation on the basis of: Projection of the population and migration of the Vologda Region until 2035: Statistical book. Rosstat regional office in the Vologda Region. Vologda, 2021.

*Health of the child population of the Northwestern Federal District regions: morbidity and disability*

Key indicators of quality of the child population are characteristics of their health. In the regions of the Northwestern Federal District in 2022, the incidence of disease among children aged 0–14 was the highest, due to such causes as respiratory diseases, injuries, poisoning and other consequences of external influence, infectious and parasitic diseases. A new coronavirus infection has also made a significant contribution to the morbidity of children. Compared with 2000, the incidence of respiratory diseases has increased in all the regions under consideration, as well as in the Federal District and nationwide. The incidence of infectious and parasitic diseases has decreased both nationwide and in all regions of the Northwestern Federal District, with the exception of the Komi Republic. The incidence associated with external influence, on the contrary, has increased both nationwide and in the regions of the Federal District, with the exception of Kaliningrad and Novgorod regions (*Tab. 3*).

The number of disabled children in Russia in 2022 was 653,239 people (2.2% of the child

population), in the Northwestern Federal District – 53,050 people (2.1% of the child population). The values of the indicator for the period 2017–2022 increased. Among the regions of the Northwestern Federal District, as of 2022, the maximum number of disabled children was observed in the city of Saint Petersburg and in the Vologda Region. During the period 2010–2022, the number of disabled children increased in all constituent entities of the Federal District, with the exception of the Republic of Karelia. At the same time, the maximum level of child disability in 2022 was recorded in the Pskov (2.5%) and Arkhangelsk (2.3%) regions, and the minimum – in the Leningrad Region (1.6%; *Tab. 4*).

The leading causes of child disability in the NWFD are mental and behavioral disorders (30%), nervous disorders (21%), as well as deformities, congenital and chromosomal abnormalities (15%; *Fig. 4*).

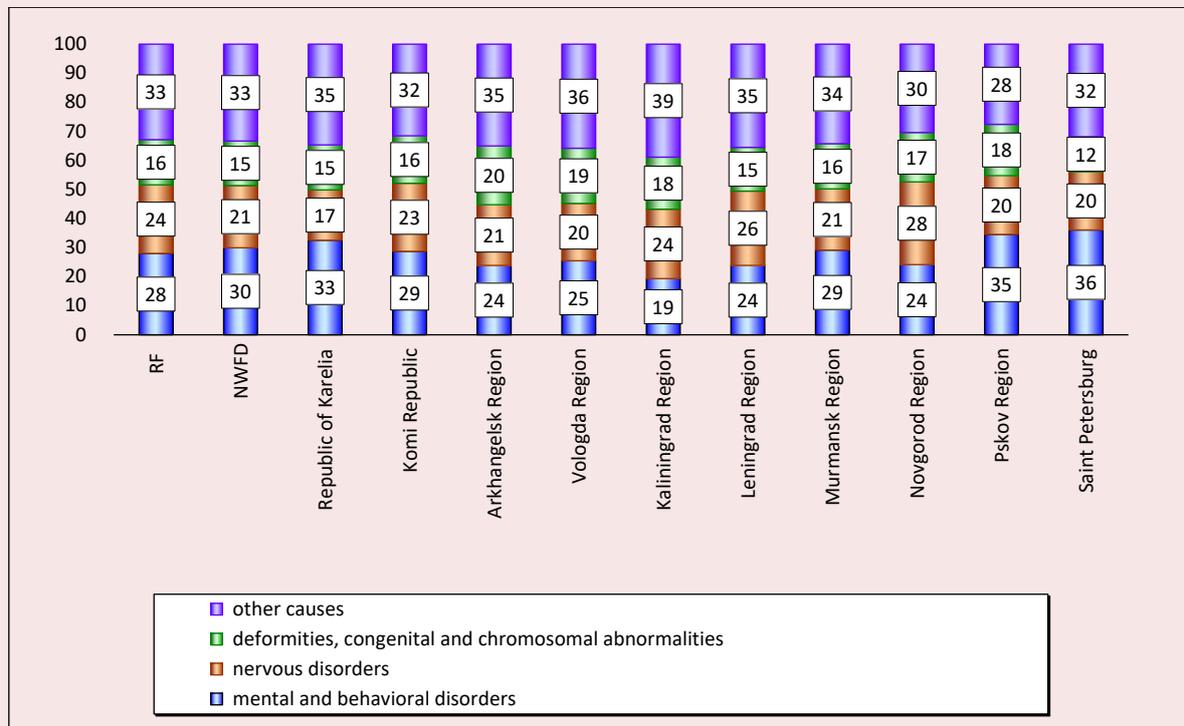
In addition to indicators characterizing negative processes related to health of the child population, it is necessary to pay attention to those lifestyle factors that contribute to its strengthening. Primarily, such factors include physical activity and sports. According to data of the Sample survey of health

Table 3. Morbidity of children aged 0–14 by disease type in 2000 and 2022, per 1000 people of the respective age

Territory	2000			2022			
	RD	ID	EI	RD	ID	EI	COVID-19
Russia	888.6	104.1	88.8	1651.5	102.9	133.3	116.3
NWFD	1076.2	134.1	110.2	2473.10	280.1	205.7	141.1
Republic of Karelia	1090.3	144.9	114.9	1865.8	128.4	178.3	109.3
Komi Republic	1389.2	137.2	97.1	1810.8	138.7	166.7	95.7
Arkhangelsk Region	1095.8	169.7	111.4	1651.5	102.9	133.3	116.3
Vologda Region	1194.7	153.2	106.8	1736.1	81.4	139.0	85.3
Kaliningrad Region	815.9	107.6	61.1	1012.8	82.8	56.5	77.3
Leningrad Region	907.1	85.2	56.7	1276.7	50.3	63.9	83.8
Murmansk Region	1306.3	129.2	96.4	1648.3	102.7	99.2	81.6
Novgorod Region	1118.9	121.6	114.5	1611.7	70.7	95.1	53.8
Pskov Region	795.6	107.4	102.6	1407.1	61.4	118.3	79.7
City of Saint Petersburg	1044.5	144.8	151.3	1768.8	108.3	160.9	163.2

Abbreviations: RD – respiratory diseases, ID – some infectious and parasitic diseases, EI – injuries, poisoning and some other consequences of external influence.  
Source: Health service in Russia. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/210/document/13218>

Figure 4. Structure of causes of child disability in Russia and the regions of the NWFD as of 2022, % of the total number of children with disabilities



Source: Child-friendly health service and healthy lifestyle. Rosstat. Family, motherhood and childhood. Available at: [https://rosstat.gov.ru/storage/mediabank/3\\_Zdravooхранenie.xlsx](https://rosstat.gov.ru/storage/mediabank/3_Zdravooхранenie.xlsx)

Table 4. The number of disabled children in the regions of the NWFD, 2010–2022, people

Territory	2010	2015	2019	2020	2021	2022	Growth, %	Proportion to children aged 0–17, % (2022)
Russia	495,330	540,636	605,017	621,083	638,285	653,239	32	2.2
NWFD	41,928	43,415	48,946	49,839	51,503	53,050	27	2.1
Republic of Karelia	2,631	2,252	2,420	2,412	2,468	2,576	-2	2.5
Komi Republic	2,957	2,936	3,268	3,232	3,314	3,339	13	2.2
Arkhangelsk Region	4,155	4,423	4,539	4,627	4,681	4,759	15	2.3
Vologda Region	4,126	4,235	4,719	4,808	5,153	5,267	28	2.2
Kaliningrad Region	2,792	2,801	3,645	3,681	3,753	3,864	38	1.9
Leningrad Region	4,080	4,329	4,860	4,869	4,983	4,955	21	1.6
Murmansk Region	1,933	2,170	2,439	2,554	2,618	2,745	42	1.9
Novgorod Region	2,258	2,447	2,496	2,464	2,484	2,431	8	2.1
Pskov Region	1,987	2,208	2,658	2,682	2,689	2,730	37	2.5
City of Saint Petersburg	15,009	15,614	17,902	18,510	19,360	20,384	36	2.2

Source: Health service in Russia. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/210/document/13218>

status of the population (2023), proportion of children aged 3–14 who systematically engage in sports and physical education in 2023 in Russia was 90%, with the average in the regions of the NWFD – about 91%. The highest level of this indicator among the regions of the NWFD was observed in the Vologda and Pskov regions (98%), and the lowest in the Kaliningrad Region (about 90%; *Tab. 5*).

Among significant components of a healthy lifestyle, it is also necessary to underline sufficient sleep and balanced diet. According to data of the Sample survey of daily time use by the population, average daily sleep duration of 10.1 hours is typical for children aged 10–13, and 9.4 hours for teenagers aged 14–17 years. In general, these indicators correspond to the recommendations of WHO experts (*Tab. 6*). Also, as stated in the survey, 1% of 17-year-olds experienced insomnia, average duration of which was 20 minutes. Among children aged 10, 0.6% faced this problem, and average duration of their insomnia period was 31 minutes<sup>7</sup>.

Taking care of health of the child population is a task that not only healthcare institutions, but also educational organizations have to deal with. One of the indicators reflecting creation of comfortable health-maintaining conditions in schools is the provision of students with hot meals. According to statistics, this indicator increased from 93.6% to 94.8% from 2015 to 2022 in the Northwestern Federal District. In primary school in 2022 (grades 1–4), the level of provision of children with hot meals was noticeably higher (99.9%) than in middle and high school (90.9%). Regionally, the most favorable situation by 2022 was in Saint Petersburg (99.7%), the Novgorod (100%) and Vologda (99%) regions, and it was the least favorable in the Arkhangelsk Region (86.5% hot meals provision; *Tab. 7*).

#### *Provision of the child population with health and educational services*

Based on the data provided on changes of the child population, it can be expected that in the medium term, while maintaining the current level

Table 5. Proportion of children engaged in physical education, sports or physical activity, 2023, % of the number of children of the respective age

Territory	Proportion of children aged 3–14 engaged in sports and physical education, total	Proportion of children aged 3–6 engaged in sports and physical education		Proportion of children aged 7–14 engaged in sports and physical education	
		Total	Going to sports clubs	Total	Going to sports clubs
Russia	90.1	78.3	71.3	95.1	93.8
NWFD	90.8	78.7	73.5	97.2	95.6
Republic of Karelia	93.2	91.8	91.8	94.1	91.0
Komi Republic	97.6	94.4	94.4	98.7	98.7
Arkhangelsk Region	90.2	79.1	69.7	96.1	94.5
Vologda Region	98.2	92.8	84.4	100.0	97.4
Kaliningrad Region	89.9	78.8	69.3	95.9	94.4
Leningrad Region	92.9	84.4	83.7	97.1	96.0
Murmansk Region	95.4	91.9	91.9	96.7	96.7
Novgorod Region	91.0	78.5	76.1	96.7	92.6
Pskov Region	98.0	95.7	93.2	98.9	98.9
City of Saint Petersburg	91.8	83.3	78.2	96.7	96.7

Source: Sample survey of health status of the population, 2023. Rosstat. Available at: [https://rosstat.gov.ru/free\\_doc/new\\_site/zdor23/PublishSite\\_2023/index.html](https://rosstat.gov.ru/free_doc/new_site/zdor23/PublishSite_2023/index.html)

<sup>7</sup> Results of the Sample survey of daily time use by the population (2019). Available at: [http://rosstat.gov.ru/free\\_doc/new\\_site/population/urov/sut\\_fond19/index.html](http://rosstat.gov.ru/free_doc/new_site/population/urov/sut_fond19/index.html)

Table 6. Daily duration of sleep in children aged 10–13 and teenagers aged 14–17 in 2019

Age, years	Duration of main sleep, hours	Duration of naps, minutes	WHO recommended duration of main sleep (continuous), hours
10	10.2	5.84	9–11
11	10.1	4.61	
12	10.0	4.64	
13	9.9	5.20	
14	9.7	4.91	8–10
15	9.5	5.62	
16	9.3	6.48	
17	9.1	6.96	

Sources: Results of the Sample survey of daily time use by the population (2019). Available at: [http://rosstat.gov.ru/free\\_doc/new\\_site/population/urov/sut\\_fond19/index.html](http://rosstat.gov.ru/free_doc/new_site/population/urov/sut_fond19/index.html); Pocket book of primary health care for children and adolescents: Guidelines for health promotion, disease prevention and management from the newborn period to adolescence. 2023. Available at: <https://www.who.int/europe/publications/i/item/9789289057622>

Table 7. Provision of students with hot meals in educational institutions, 2015 and 2022

Territory	Provided with hot meals, people		Provision, %		Provision of students in 2022	
	2015	2022	2015	2022	Grades 1–4, %	Grades 5–11, %
Russia	14,341,426	17,370,995	88.7	91.5	99.8	85.0
NWFD	1,259,353	1,534,481	93.6	94.8	99.9	90.9
Republic of Karelia	64,813	70,078	92.8	82.5	99.9	70.1
Komi Republic	97,926	101,840	89.3	88.4	100.0	79.8
Arkhangelsk Region	124,358	132,990	86.5	84.7	99.8	73.8
Vologda Region	126,172	143,916	95.0	99.0	100.0	98.2
Kaliningrad Region	95,039	125,839	94.6	86.7	99.4	77.0
Leningrad Region	132,732	183,742	96.1	97.9	100.0	96.1
Murmansk Region	66,913	72,133	92.8	97.1	100.0	94.9
Novgorod Region	57,835	66,804	92.9	100.0	100.0	100.0
Pskov Region	61,796	67,354	90.1	86.6	99.5	77.0
City of Saint Petersburg	431,769	569,785	96.0	99.7	100.0	99.4

Source: Provision of students in educational institutions with hot meals. Rosstat. Family, motherhood and childhood. Available at: [https://rosstat.gov.ru/storage/mediabank/3\\_Zdravooхранenie.xlsx](https://rosstat.gov.ru/storage/mediabank/3_Zdravooхранenie.xlsx)

of fertility and mortality, there will be a decrease in the number of the studied age group of the population. These trends make it possible to achieve an increase in the provision of the child population with various types of health care, as well as an increase in indicators of its provision with various health resources. However, this does not mean that improvements will occur without additional investments and efforts to improve the effectiveness of managing the development of children's health care.

Provision of the child population with pediatricians employed in public health facilities on average in the Northwestern Federal District in 2022 was above the national level: 22.6 and 18.2 people per 10,000 children aged 0–17, respectively. However, in half of the regions of the District in the period 2016–2022, there was a lag in the level of density of pediatricians behind the national level (the Vologda, Leningrad, Kaliningrad, Novgorod and Pskov regions). In the Murmansk Region, the lag behind the national level was recorded in 2020

and 2021. Regionally, there is a significant inequality in density of pediatricians: the maximum value of the indicator is in the city of Saint Petersburg (32.5 people per 10,000 children), and the minimum is in the Pskov Region (12.2). The gap between these values is 2.7 times. The trend of this indicator in all regions of the Northwestern Federal District, except for the city of Saint Petersburg and the Leningrad Region, was downward (*Tab. 8*).

Increasing the provision of the child population with pediatricians does not always have positive predictors. A similar picture can be observed in the future, for example, in the territories of regions where a significant reduction in the number of children is predicted. For example, the level of healthcare manpower resources of the Vologda Region in 2021 did not sufficiently provide the child population with services of medical specialists, and women of childbearing age with services of obstetrician-gynecologists. At the same time, with implementation of the projected downward trend

of the child population and the number of women of childbearing age, density of doctors in the region will increase slightly. However, without a significant increase in the number of medical specialists, this growth will not be able to pronouncedly improve the situation (*Tab. 9*).

The most important factor in the control of children's morbidity is preventive medical examinations. Their provision in the NWFD in 2022 was quite high. However, there was a significant differentiation in the context of individual regions. Thus, the highest value of the indicator was recorded in Saint Petersburg (99.7%) and the Leningrad Region (96.9%), whereas the lowest value was observed in the Republic of Karelia (70.9%). As a result of preventive examinations, only 18% of children were assigned to the first health group on average in the NWFD (25% nationwide). The largest proportion of healthy children was in the Pskov (36%) and Leningrad (34%) regions, as well as in the Komi Republic (28%; *Tab. 10*).

Table 8. Provision of children aged 0–17 with pediatricians employed in state-owned organizations providing health services to the population, people per 10,000 people of the child population

Territory	2016	2017	2018	2019	2020	2021	2022	2022 to 2016, times
Russia	18.5	18.6	18.5	18.6	18.5	18.4	18.2	0.98
NWFD	22.1	22.2	22.2	22.5	22.7	22.8	22.6	1.03
Republic of Karelia	21.5	21.3	21.1	21.2	21.3	21.3	20.6	0.96
Komi Republic	21.4	21.6	21.6	21.4	20.3	19.7	19.1	0.89
Arkhangelsk Region	23.6	23.7	23.7	23.8	23.5	22.5	22.9	0.97
Vologda Region	15.9	15.4	15.0	14.9	14.6	14.8	14.7	0.93
Kaliningrad Region	15.5	15.1	14.6	14.8	14.8	14.9	13.7	0.89
Leningrad Region	16.3	16.9	17.5	17.6	17.3	17.6	16.4	1.01
Murmansk Region	21.9	20.0	19.1	19.2	18.4	18.3	18.6	0.85
Novgorod Region	18.1	16.9	16.2	14.8	14.1	13.4	13.7	0.76
Pskov Region	15.0	14.4	13.9	11.9	11.8	12.7	12.2	0.82
City of Saint Petersburg	28.5	29.2	29.5	30.6	31.7	32.0	32.5	1.14

Sources: The number of all medical specialists (individuals) in organizations providing health services to the population at the end of the accounting year. Available at: <https://www.fedstat.ru/indicator/31547>; Resident male population by age as of January 1. A showcase of statistical data. Federal State Statistics Service. Available at: <https://showdata.gks.ru/report/278936/>; Resident female population by age as of January 1. A showcase of statistical data. Federal State Statistics Service. Available at: <https://showdata.gks.ru/report/278938/>

Table 9. Children's healthcare manpower resources of the Vologda Region:  
Current level in absolute and relative terms, long-range level in relative terms

Children's regional healthcare manpower resources	Absolute number, people		Provision of the population with resources	
	2021 (fact)		2021 (fact)	2035 (projection*)
Local pediatricians	207		8.4	11.2
Neonatologists	38		0.3 <sup>1</sup>	0.4 <sup>1</sup>
Pediatric specialists:				
Cardiologists	10		0.4	0.5
Oncologists	1		0.04	0.1
Pediatric psychologists	12		0.5	0.6
Pediatric urologist-andrologists	2		0.1	0.1
Pediatric surgeons	19		0.8	1.0
Pediatric endocrinologists	12		0.5	0.6
Obstetrician-gynecologists	188		7.3 <sup>2</sup>	8.5 <sup>2</sup>
<sup>1</sup> – The provision indicator is calculated per the entire population of the Region; <sup>2</sup> – The provision indicator is calculated per the number of women aged 15–49 in the Region. * Only the population change is considered. Sources: calculated on the basis of data on the number of doctors given in the statistical book “Key performance indicators of health service institutions in the Vologda Region for 2021”. Medical center of information and analytics. Vologda Region health service department. 2022; information on the number of children and the number of women of childbearing age is taken from: Projection of the population and migration of the Vologda Region until 2035: statistical book. Rosstat regional office in the Vologda Region. Vologda, 2021.				

Table 10. Preventive medical examinations of children and distribution of children aged 0–17 by health group

Territory	Examined, people	Provision, %	Distribution of children by health group, % of the number of examined				
			I	II	III	IV	V
Russia	25,662,623	93.4	25.1	47.4	10.4	0.4	1.6
NWFD	2,298,521	90.3	17.9	52.7	12.7	0.3	1.6
Republic of Karelia	84,174	70.9	15.1	60.0	7.8	0.1	1.2
Komi Republic	123,814	73.9	28.1	42.0	11.9	0.1	1.5
Arkhangelsk Region	178,912	87.7	10.4	57.8	13.8	0.3	1.6
Vologda Region	224,002	95.2	17.8	52.0	12.5	0.4	1.5
Kaliningrad Region	149,932	74.8	27.2	43.4	11.7	0.2	2.0
Leningrad Region	296,522	96.9	33.7	41.3	7.8	0.2	1.3
Murmansk Region	88,549	76.9	14.9	50.8	14.5	0.7	1.2
Novgorod Region	109,464	95.1	18.0	61.5	3.7	0.6	0.8
Pskov Region	82,211	68.9	36.2	43.4	5.2	0.4	1.7
City of Saint Petersburg	960,941	99.7	10.7	57.5	16.4	0.3	1.7
Source: Preventive medical examinations of children and distribution of children aged 0–17 years by health group in the Russian Federation in 2022. Rosstat. Family, motherhood and childhood. Available at: <a href="https://rosstat.gov.ru/storage/mediabank/3_Zdravoohranenie.xlsx">https://rosstat.gov.ru/storage/mediabank/3_Zdravoohranenie.xlsx</a>							

The provision of educational services also largely reflects the achieved level of well-being of the child population. According to the Comprehensive Monitoring of Living Conditions of the Population, in the NWFD, the most common reason for parents to decline services of pre-school educational institutions was their opinion that home education is more preferable for a child (74.7%; 73.7% in 2011). At the same time, 15.1% of children aged 3–6 did not attend pre-school institutions due to lack of places (15.5% in 2011), another 4.1% declined these services due to health conditions (11% in 2011)<sup>8</sup>.

59.7% of children aged 3–18 living in the regions of the NWFD used additional education services<sup>9</sup>. In comparison with 2015, the level of provision of children with additional education services decreased by 3.6 p.p. In the regional context, the trend of the indicator was also downward, the most significant decrease occurred in Saint

Petersburg (10 p.p.; *Tab. 11*). The decrease in children's involvement in additional education may be due to a number of factors, ranging from the state of health and well-being to financial difficulties of families. At the same time, earlier, according to an in-depth study on the example of the Vologda Region, it was found that the most common reason for refusing to continue attending extracurricular clubs is inconvenient schedule, as well as children's loss of interest and motivation to study (Natsun, 2023a).

*Characteristics of the standard of living of families with children in the regions of the NWFD*

Nationwide, according to statistical data<sup>10</sup>, in 2022 average per capita disposable income in families with children under 16 years old was 35,066.1 rubles, which is 1.2 times lower than the same indicator in families without children under 16 years old (41,731.8 rubles). In the regions of

Table 11. Proportion of children aged 3–18 attending additional educational (enrichment) classes, % of the number of children of the respective age

Territory	2015	2017	2019	2021	2023	Decrease, p.p.
NWFD	63.4	60.4	62.1	60.9	59.7	-3.6
Republic of Karelia	53.0	61.0	62.1	36.5	46.3	-6.7
Komi Republic	66.4	72.3	63.7	65.8	65.9	-0.5
Vologda Region	58.9	67.5	75.9	75.5	53.7	-5.1
Kaliningrad Region	45.4	55.6	53.5	51.2	52.4	6.9
Leningrad Region	67.2	67.3	57.3	49.7	65.1	-2.1
Murmansk Region	62.1	66.2	64.7	67.8	52.7	-9.4
Novgorod Region	72.0	71.6	65.0	77.5	65.1	-6.9
Pskov Region	70.5	45.3	62.9	67.3	65.8	-4.6
City of Saint Petersburg	67.5	49.0	81.7	63.4	57.0	-10.4

Source: Proportion of children aged 3–18 attending additional educational (enrichment) classes. Rosstat. Family, motherhood and childhood. Available at: [https://rosstat.gov.ru/storage/mediabank/3\\_Zdravoohranenie.xlsx](https://rosstat.gov.ru/storage/mediabank/3_Zdravoohranenie.xlsx)

<sup>8</sup> Distribution of children aged 3–6 years by reason of non-attendance at preschool educational institutions. Rosstat. Family, motherhood and childhood. Available at: [https://rosstat.gov.ru/storage/mediabank/smd-2-2\\_2022.xls](https://rosstat.gov.ru/storage/mediabank/smd-2-2_2022.xls)

<sup>9</sup> Proportion of children aged 3–18 who attend additional educational (enrichment) classes, including free of charge. Rosstat. Family, motherhood and childhood. Available at: [https://rosstat.gov.ru/storage/mediabank/smd\\_2.3.xlsx](https://rosstat.gov.ru/storage/mediabank/smd_2.3.xlsx)

<sup>10</sup> Household disposable income (average per household member), including families with children under 16 years old: with 1 child, 2 children, 3 or more children. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/storage/mediabank/Smd\\_7-14.xls](https://rosstat.gov.ru/storage/mediabank/Smd_7-14.xls)

the NWFD, average per capita disposable income of families with children amounted to 41,307.5 rubles<sup>11</sup>.

Based on the data of the Sample survey of incomes of the population and participation in social programs conducted by Rosstat, it is possible to identify the main characteristics of the standard of living of families with children. The procedure for conducting a sample survey involves the search for respondents to the main sample (60,000 households), which is representative of all private households, and the target sample (10,000 households), which is representative of households with children.

According to the results of the survey conducted in 2023, 2,412 households were included in the target sample of families with children in the regions of the Northwestern Federal District<sup>12</sup>.

Average monthly monetary income of families with children in the regions ranged from 63,021.8 rubles in the Pskov Region to 121,329.8 rubles in the Nenets Autonomous Area. At the same time, the highest proportion of earned income was in Saint Petersburg – 87%, whereas in the Nenets Autonomous Area it reached 78% of total monetary income, and the lowest value was recorded in the Pskov Region – 72%. Allowances and compensation payments for children in proportion to average monthly disposable monetary income ranged from 2.3% in Saint Petersburg to 14.2% in the Pskov Region (*Tab. 12*). Based on the above data, it can be noted that the Pskov Region has the least favorable parameters of the financial situation of families with children among the regions of the Northwestern Federal District.

Table 12. Average monthly incomes of households with children in the regions of the Northwestern Federal District

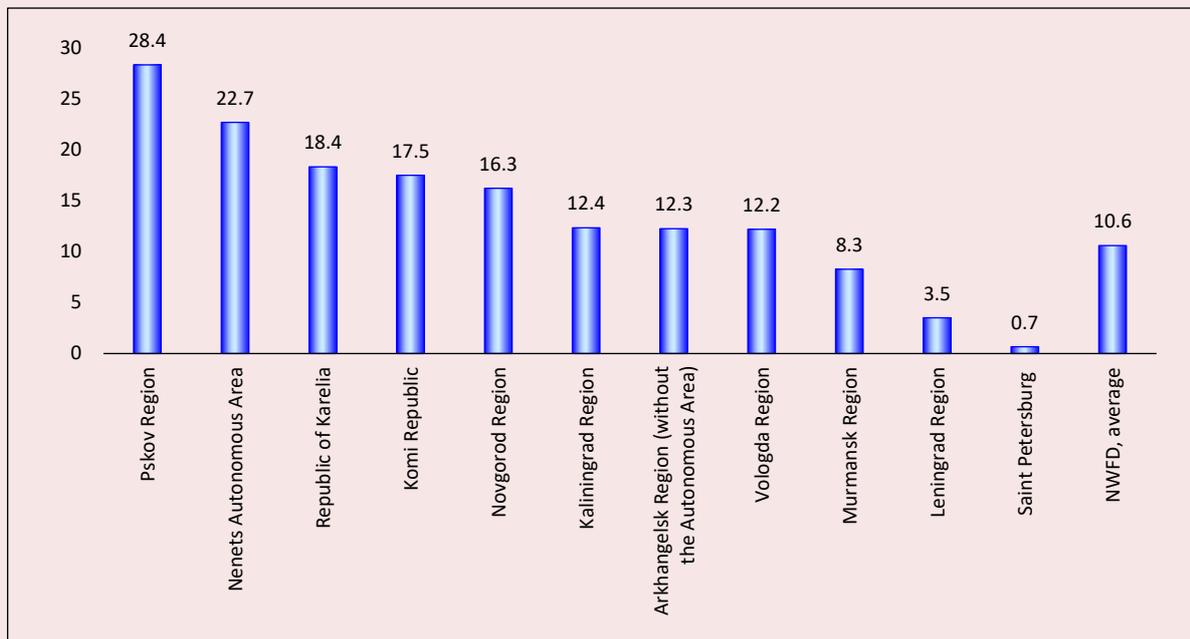
The NWFD's constituent entity	Average monthly monetary income, rubles	Earned income in proportion to total monetary income, %	Average monthly disposable monetary income, rubles	Social cash benefits – total		Allowances and compensation payments for children	
				rubles	% of monetary income	rubles	% of monetary income
Arkhangelsk Region (without the Autonomous Area)	84,645.0	77.9	75,116.9	13,679.0	16.2	6,079.6	7.2
Nenets Autonomous Area	121,329.8	77.7	106,310.1	22,362.8	18.4	13,754.4	11.3
Vologda Region	87,246.2	77.6	77,805.1	17,073.8	19.6	7,756.1	8.9
Kaliningrad Region	77,569.2	85.1	68,938.4	8,864.9	11.4	4,276.5	5.5
City of Saint Petersburg	116,036.5	87.4	100,742.6	8,213.7	7.1	2,323.2	2.0
Leningrad Region	98,616.8	84.7	86,980.5	7,992.0	8.1	2,495.6	2.5
Murmansk Region	120,003.6	86.2	104,819.5	12,401.5	10.3	5,598.4	4.7
Novgorod Region	80,166.8	75.8	71,383.3	14,296.4	17.8	7,663.1	9.6
Pskov Region	63,021.8	71.9	55,760.3	15,608.9	24.8	7,892.6	12.5
Republic of Karelia	90,092.2	81.5	78,249.8	12,650.3	14.0	6,590.4	7.3
Komi Republic	95,644.0	77.6	83,607.3	18,172.2	19.0	6,477.8	6.8

Source: microdata of Sample survey of incomes of the population and participation in social programs, 2023.

<sup>11</sup> Household income, expenditure and consumption. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/compendium/document/13271>

<sup>12</sup> Federal District. Sample survey of incomes of the population and participation in social programs. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/free\\_doc/new\\_site/VNDN-2023/index.html](https://rosstat.gov.ru/free_doc/new_site/VNDN-2023/index.html)

Figure 5. Proportion of households with children with per capita monetary incomes below the poverty line, % of the number of surveyed households



Source: microdata of Sample survey of incomes of the population and participation in social programs, 2023.

Families with children are one of the population groups that are at risk of poverty (Kalachikova, Gruzdeva, 2019). According to the Sample survey of population income (2023) data, the highest proportion of low-income families with children in the sample by regions of the NWFD was observed in the Pskov Region (28%), the Nenets Autonomous Area (23%), the Komi Republic (16%; *Fig. 5*). Proportion of low-income families to all the families surveyed nationwide was 15.2%<sup>13</sup>, proportion of households receiving monthly income support was 2.1%<sup>14</sup>. Proportion of families with children

receiving income support ranged from 0.5% in the Vologda Region to 14% in the Kaliningrad Region, and on average in the NWFD – 2.5%<sup>15</sup>.

#### *Housing conditions of families with children in the regions of the NWFD*

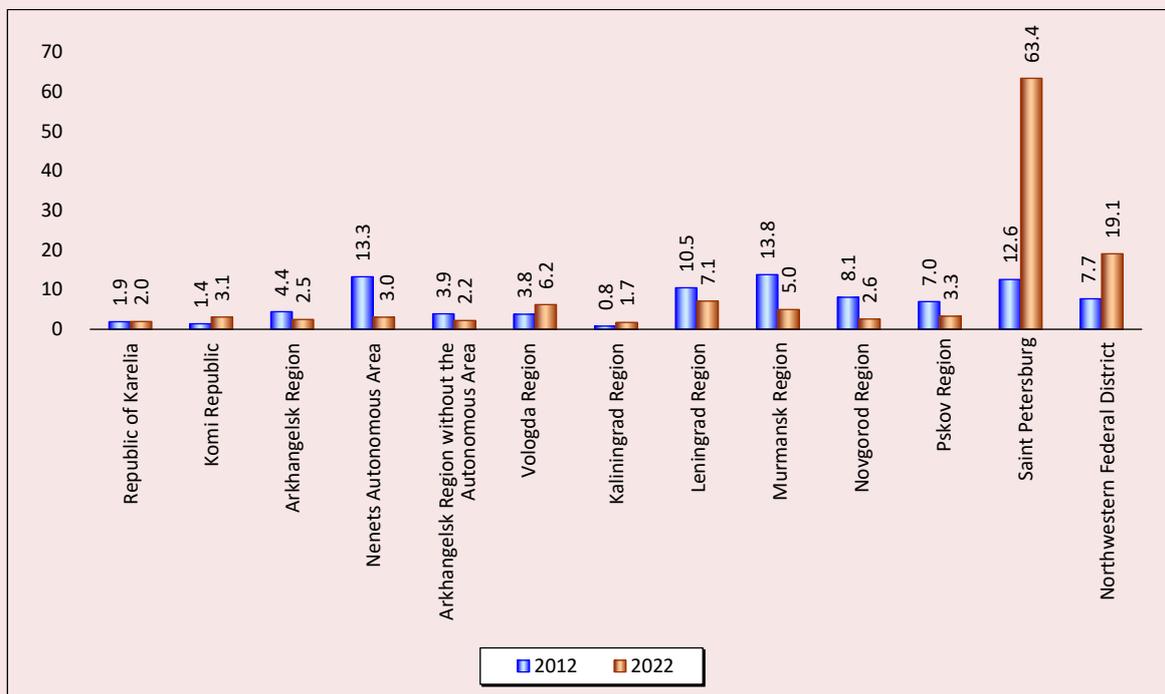
According to the Sample survey of household budget (2022), 46% of the surveyed families with 3 or more children lived in an individual house or part of a house, whereas among families with one child this proportion was only 25%. However, provision of living space per capita for a significant part of large families remained insufficient: less than 9

<sup>13</sup> Indicator of the population with per capita monetary incomes below the poverty line (population with monetary incomes below the poverty line) (changed from 2019). Sample survey of incomes of the population and participation in social programs, 2023. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/free\\_doc/new\\_site/VNDN-2023/index.html](https://rosstat.gov.ru/free_doc/new_site/VNDN-2023/index.html)

<sup>14</sup> Receipts of monthly income support by low-income families. Sample survey of incomes of the population and participation in social programs, 2023. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/free\\_doc/new\\_site/VNDN-2023/index.html](https://rosstat.gov.ru/free_doc/new_site/VNDN-2023/index.html)

<sup>15</sup> It is demonstrated on the basis of microdata of Sample survey of incomes of the population and participation in social programs, 2023.

Figure 6. Proportion of large families who improved their housing conditions in the regions of the NWFD, % of the total number of large families who needed better housing conditions



Source: The number of large families registered as needing housing at the end of the year. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/storage/mediabank/Smd\\_7-29.xls](https://rosstat.gov.ru/storage/mediabank/Smd_7-29.xls); The number of large families who received housing and improved its conditions in the accounting year. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/storage/mediabank/Smd\\_7-30.xls](https://rosstat.gov.ru/storage/mediabank/Smd_7-30.xls)

square meters per capita accounted for 19% of such households, from 9 to 11 square meters – for 24%. For comparison, similar levels of housing provision were observed, respectively, in 2 and 6% of households with one child<sup>16</sup>.

The number of large families registered as being in need of housing decreased by 19% in the NWFD from 2012 to 2022 (from 12,071 to 9,805). In the context of individual regions, trends were opposing: an increase in the indicator was observed in the Murmansk Region (3.6 times), the Nenets Autonomous Area (3.3 times), the Leningrad and Novgorod regions (1.7 times), and the Vologda Region (1.1 times). In other regions, there was

a decrease in the indicator. A small number of large families managed to improve housing conditions during the period under study. In 2022, in the Federal District as a whole, their number amounted to only 19% of the number of large families who needed better housing conditions (Fig. 6).

Buying private housing remains a difficult task for families with children. The use of a mortgage slightly mitigates the severity of the housing problem. Mortgage lending on easy terms and maternity capital are proving to be the most effective for large families and families with children under the age of 3 (Natsun, 2023b).

<sup>16</sup> Sample survey of household budgets. Federal State Statistics Service. Available at: <https://obdx.gks.ru/>

*Safety of children in the family*

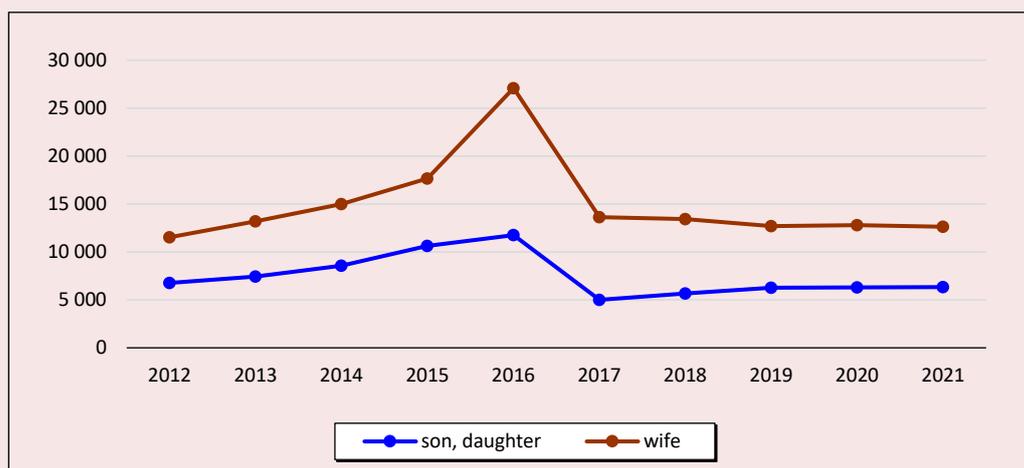
One of the most important components of well-being is safety of life as a characteristic of its objective conditions and as an internal psychological feeling of a person. Children are by definition in a vulnerable position, since their living conditions are practically entirely determined by society and the family. And family environments do not always meet the children's safety criteria. In the worst cases, children endure various types of abuse (verbal, physical) from other family members. Statistical data on cases of domestic violence against children is not perfect, since not every such case is recorded by law enforcement and is included in current reporting. However, even on the basis of this incomplete data, it can be said that the number of crimes committed against children in the family has been increasing in the country since 2017. The same trend is observed in relation to violent acts against women in the family (*Fig. 7*).

It should be noted that there were legislative changes in 2017: cases of physical abuse and

violence against family members that occurred for the first time were excluded from the scope of Article 116 of the Criminal Code of the Russian Federation (Krutikhina, 2019). This was reflected in statistics by a significant reduction in the absolute number of registered crimes committed against family members: the number of crimes against children decreased 2.3 times and the number of crimes against wives decreased 1.99 times. Consequently, actually, the situation with domestic violence has not become two times better in one year (from 2016 to 2017): In fact, only sanctions against aggressors have changed.

On the scale of the entire child population, proportion of children who suffered from domestic violence was relatively small – about 0.028% in 2020 (for comparison, among married women, proportion of victims of domestic violence in 2020 was 0.04%<sup>17</sup>). Despite this, there are no stable positive trends that could indicate a decrease in the severity of the problem of domestic violence. The number of children suffering from it increased by

Figure 7. The number of crimes involving violent acts committed against a family member



Source: The number of crimes involving violent acts committed against a family member, including: spouse, son, daughter. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/7-25.xlsx>

<sup>17</sup> Own calculation on the basis of data from the All-Russian Census of Population (2020) on the population by marital status, by age group, as well as statistical data on the number of victims of crimes involving violent acts against a family member.

14% between 2012 and 2021<sup>18</sup>. Such data indicates the need to identify risk factors for child abuse in families and their prevention. At the same time, the increase in the indicator may also be due to the fact that victims of domestic violence have become more likely to report such incidents, i.e. the number of hidden cases has decreased. In-depth research is required to establish the true causes of the observed trend of the indicator.

**Discussion**

The results obtained allow us to form images of the regions of the NWFД according to the considered indicators of children’s well-being. Regional differentiation becomes evident after the comparison of indicators. Taking into account the latest statistics available, in most regions there is a neutral situation in which one part of parameters of children’s well-being contribute to its further growth, while the other part, on the contrary, reduces it. According to the analyzed indicators, the

situation was unfavorable in the Republic of Karelia and the Arkhangelsk Region. We consider a rapid decrease in the infant mortality rate in the period from 2000 to 2023 as the only strong point of these regions. The Komi Republic and the Leningrad Region can be characterized as the regions with a relatively favorable situation in terms of children’s well-being parameters. The weaknesses in the Komi Republic are the relatively slow decrease in infant mortality in 2000–2023, as well as low proportion of large families that have improved their housing conditions, and in the Leningrad Region there is a relatively slow decrease in infant mortality, low density of pediatricians, and low proportion of children attending additional classes (*Tab. 13*). In order to equalize the observed differentiation and improve overall children’s well-being in the NWFД, systematic comprehensive work is needed at the regional level, aimed primarily at problematic areas that hinder the improvement of the situation.

Table 13. Summarized characteristics of the NWFД regions in terms of children’s well-being parameters

NWFД region	1	2	3	4	5	6	7	8	9	10	Description of situation
Republic of Karelia	3	1	2	1	2	1	1	2	1	1.56	unfavorable
Komi Republic	1	2	3	2	2	3	3	2	1	2.33	favorable
Arkhangelsk Region	3	2	1	1	2	1	2	2	1	1.67	unfavorable
Vologda Region	1	2	3	3	1	1	1	2	1	1.78	neutral
Kaliningrad Region	3	3	1	1	1	2	3	2	1	1.89	neutral
Leningrad Region	1	3	2	3	1	3	1	3	3	2.44	favorable
Murmansk Region	1	3	2	3	1	1	3	3	1	2.22	neutral
Novgorod Region	3	2	1	3	1	1	3	2	3	1.89	neutral
Pskov Region	2	1	3	1	1	3	2	1	2	1.89	neutral
City of Saint Petersburg	1	2	1	3	3	1	1	3	1	2.00	neutral

Symbols: 1 – infant mortality decrease rate in 2000–2023, points; 2 – disabled children in proportion to the child population aged 0–17, points; 3 – proportion of children aged 3–14 engaged in sports and physical education, points; 4 – provision of students with hot meals in grades 1–11, points; 5 – density of pediatricians, points; 6 – proportion of children of the first health group, points; 7 – proportion of children attending additional classes, points; 8 – proportion of families with children with incomes below the poverty line, points; 9 – proportion of large families who improved their housing conditions, points; 10 – the average score of children’s well-being parameters.  
 Note: based on the ranking and grouping of the observed values of the parameters, they were assigned points on a three-point scale, with 1 meaning the least favorable situation, and 3 meaning the most favorable situation.  
 Source: own compilation.

<sup>18</sup> The number of crimes involving violent acts committed against a family member, including: spouse, son, daughter. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/7-26.xlsx>

Financial situation of families with children is to a large extent a determining factor of children's well-being, directly or indirectly influencing quality and accessibility of health and educational services for children, quality of their diet. As it was demonstrated on the basis of statistical data, for many regions, the problem of improving the standard of living of families with children remains among the most significant socio-economic priorities. Families with children are one of the population groups that are at high risk of poverty. According to Russian research, the following factors largely determine and consolidate poverty of families with children: a large number of children in the family, children's age under three, rural residence, the number of earners in the family (Elizarov, Sinitsa, 2019). As mentioned in the Sample survey of household budgets, the average self-assessment of financial situation of 56% of families with children in the District remains low<sup>19</sup>. Under these circumstances, implementation of various measures of state social support, including provision of social benefits and allowances, is of particular importance.

Determining criteria of families that need additional state support is one of the most controversial issues when choosing specific measures, calculating the amount of cash benefits. As a rule, when determining entitlement to social benefits, the ratio of family income to the poverty line of the population is taken into account.

An alternative tool for assessing the financial situation of families with children, based on measuring the cost of children's sets, is proposed in the work (Kalabikhina, Seredkina, 2022). The authors of this approach have demonstrated what proportion of the family budget is spent on such sets in families with different numbers of children.

<sup>19</sup> Distribution of households with children under 16 (18) years old by degree of satisfaction with their financial situation. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/storage/mediabank/Smd\\_7-10.xls](https://rosstat.gov.ru/storage/mediabank/Smd_7-10.xls)

For example, the cost of a newborn set varies from 1.4 to 2.5 monthly income per family member, the cost of a first-grader set ranges from 1.2 to 2.1 (Kalabikhina, Seredkina, 2022).

Issues of prevention of children's health impairment is also worth special attention. Our analysis demonstrated that serious progress has been made in slowing down the infant mortality rate in the regions of the NWFD. However, subsequently, while studying at school, children's health deteriorates. In this regard, the problems of ensuring a healthy educational environment in schools and the formation of a children's healthcare system that meets high standards of accessibility and quality of medical services remain relevant.

Russian researchers (Kleyn et al., 2021) conducted a comprehensive assessment of provision of students with hot meals and its quality. According to the results obtained, in 2021, the Vologda, Kaliningrad, Leningrad and Murmansk regions were among the regions with an unfavorable situation in terms of this indicator, while in Saint Petersburg and the Nenets Autonomous Area it was the most favorable. When assessing quality of diet, the authors of the study considered indicators of the proportion of samples of prepared meals that did not meet hygienic regulations for caloric content and chemical composition, microbiological and sanitary-chemical indicators, vitamin C content (Kleyn et al., 2021). These results indicate that school food requires constant monitoring and independent control, which will allow timely identification of discrepancy between the supplied meals and the established quality standards.

The component of children's well-being that is most difficult to regulate by the state is quality of the family environment, in which children's socialization mainly takes place. Issues related to the prevention and detection of cases of domestic violence have repeatedly become the subject of public and scientific discussions. In 2024, the Public Opinion Foundation (FOM) conducted a

sociological survey on domestic violence against children. According to the data obtained, 30% of respondents believe that after the decriminalization of domestic physical abuse, the number of such cases has increased. Overall, 63% of the respondents have a negative attitude towards the decriminalization of physical abuse. At the same time, 27% of respondents noted that in some cases they consider it possible to use physical punishment against school-age children<sup>20</sup>.

The results of sociological research demonstrate that the attitude of citizens to cases of family violence depends on gender. Thus, men (regardless of age) are more tolerant to such cases. Women perceive the problem of domestic violence more acutely. At the same time, respondents generally consider the degree of government intervention in solving this issue insufficient. Respondents most often attributed insults and humiliation, various physical abuse and criticism to forms of domestic violence against children (Karpunina, 2021).

Researchers have attempted to identify key risk factors for domestic violence based on the data of sociological surveys (Kalabikhina, Kozlov, 2009), they considered the advantages and disadvantages of different approaches to the development of legislation for protecting citizens from domestic violence<sup>21</sup>.

Currently, Russia has not yet passed a federal law on the prevention of domestic (family) violence (there is only a draft<sup>22</sup>), which makes it difficult for

various departments to take concerted actions to solve this acute issue. Experts justified the need to introduce a unified model for the prevention of family (domestic) violence against children, which will streamline the scope and functionality of preventive work, relevant services and bodies, the order of their interaction, the legal framework of their activities (Volosova, Balovneva, 2022).

### Conclusion

The study allowed identifying similarities and differences between characteristics of the child population in the regions of the Northwestern Federal District. The practical importance of the results obtained is related to identification of foreground issues, the solution of which will contribute to improving children's well-being in each of the regions considered.

The number of children is decreasing in all regions of the Northwestern Federal District (NWFD). At the same time, the projections of this indicator vary by region in terms of time of trend reversal. According to Rosstat's scenario, the number of the child population will begin to increase in the Kaliningrad and Leningrad regions earlier than in the other regions of the District. It is demonstrated that a steady trend of reducing the infant mortality rate has developed in the regions of the NWFD. Among areas of difficulty relating to health of the child population in the constituent entities of the NWFD remain high incidence of diseases associated with preventable causes (including infectious diseases and consequences of external influence), as well as child disability (especially caused by mental and behavioral disorders).

Conditions for children's well-being development in the regions of the District are highly differentiated. Each of them has a specific set of strengths and weaknesses in this area. Favorable characteristics uniting most of the regions considered are the high level of provision of the child population with preventive medical examinations,

<sup>20</sup> Domestic violence. Family violence: attitudes and prevalence. Public Opinion Foundation. Available at: <https://fom.ru/Rabota-i-dom/15015>

<sup>21</sup> Duban E., Davtyan M., Frolova V. Research on preventing and combating violence against women and domestic violence including in situations of social disadvantage in the Russian Federation: Based on analysis of the Russian framework and compilation of good practices. The Council of Europe. Available at: <https://rm.coe.int/publication-research-on-vaw-and-dv-in-situations-of-social-disadvantage/16809e4a05>

<sup>22</sup> On the prevention of domestic violence in the Russian Federation: Federal Law (draft). Available at: <http://council.gov.ru/media/files/rDb1bpYASUAxolgmPXEFKLU1q7JAARUS.pdf>

hot meals in schools, as well as a relatively high degree of involvement of children in sports activities.

The most pronounced obstacles to achieving children's well-being in the regions of the NWFD are the low level of meeting the need for families with children to improve their housing conditions (only 19% of large needful families were able to improve their housing conditions in 2022), low density of pediatricians (in 7 out of 9 regions of the District there are less than 20 pediatricians per 10,000 children), high proportion of families with incomes below the poverty line (in 7 out of 9 regions of the Federal District, the indicator level exceeded 10%).

Implementation of the National Project "Family", announced in early 2024, can help solve these issues, as well as overcome regional inequality in the parameters of children's well-being.

Children's well-being is a comprehensive indicator reflecting not only quality of government policy and established educational and health systems, but also the general level of society development (including public health). Respectively, efforts on the part of both the state and the community are required to increase it. Only concerted actions and cooperation in the interests of the child population can ensure meaningful progress in this area.

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## Assessing the Impact of Migration from Central Asian Countries to Birth Rate in Russia

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**Abstract.** The current demographic crisis in Russia poses a challenge to the country's socio-economic well-being. To handle the crisis, the government implements various demographic policy measures; some of them focus on migration as a way to maintain population stability. The largest share in Russia's migration gain belongs to citizens from CIS countries. Most of them come from Central Asia, whose countries have a high birth rate. These trends suggest that newcomers start families in the Russian Federation, and migration contributes to the birth rate of the host country, which is estimated in the article. The contribution of migration from Central Asian countries to Russia's birth rate is analyzed as an indicator reflecting the proportion of the number of births by women from Kyrgyzstan, Uzbekistan, Tajikistan, and Kazakhstan in the total number of births in Russia. The empirical base for the research includes three sources of statistical data reflecting an integrated approach to determining migration status: data on place of birth, citizenship and ethnicity. We find that 1.5% of children born in 2011–2023 in Russia are descendants of citizens of Central Asian countries; 0.5% of children born in Russia as of the critical moment of the 2020 census are descendants of Kyrgyz, Uzbeks and Tajiks; 11.1% of children have foreign-born parents (born outside the territory of the Russian Federation). Birth rate in foreign-born persons in Russia is also differentiated by federal districts. Subsequent research on this subject can focus on the dynamics of fertility in mixed families, and include statistics on RF constituent entities.

**Key words:** citizenship, ethnicity, foreign origin, migrant birth rate.

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## Introduction

For at least several decades the demographic situation in Russia has been defined as critical<sup>1</sup>, which is primarily reflected in birth rate decline<sup>2</sup>. Since 1967, birth rate in the country has been below the level required for simple population reproduction, and since 1992 Russia has experienced natural population decline. During this period natural growth was recorded only in 2013–2015 (the number of births exceeded the number of deaths by 24, 30.3, and 32 thousand people, respectively). At the same time, birth rate decreased significantly: there were 13.3 births per 1,000 people in 2015 and 8.9 births per 1,000 people in 2022<sup>3</sup>.

This trend is reflected by the dynamics of the total fertility rate (TFR). This indicator in the post-Soviet period reached its minimum value of 1.195 children per woman in 2000, and its maximum value was 1.777 in 2015, which is still 15% lower than required for simple population reproduction (2.1). Since 2016 the TFR has begun to gradually decrease again; in 2022 it amounted to 1,406. Since 2012 the TFR has decreased in all Russian regions, except for Moscow, where the figure has increased from 1.32 to 1.4 children per woman. In 2022 the TFR exceeded the figure required for simple population reproduction in only two regions: the Chechen Republic (2.63) and the Republic of Altai (2.42)<sup>4</sup>.

The demographic crisis is also a challenge for the Russian economy. Since economic growth

requires an increase in labor productivity and an increase in the number of workers, a decrease in the share of able-bodied residents of Russia by 4.6% in 2010–2023 may lead to an increase in the burden on them, and cause a decrease in GDP<sup>5</sup>. With an increase in the share of working-age population by 1%, the growth rate of real GDP per capita, on the contrary, increases by 0.27% (Kazbekova, 2018).

Consequently, the decisive role in the economic growth and well-being of the state is played by the population, whose qualitative and quantitative characteristics the state seeks to influence. Thus, in a situation of demographic crisis, financial measures of demographic policy are a way to influence it. These include maternity capital, monthly and one-time allowances<sup>6</sup>, as well as regional benefits and subsidies (for example, free parking in Saint Petersburg<sup>7</sup> or compensation for joint parent-child holidays for large families in the Ulyanovsk Region<sup>8</sup>, etc.).

Since the dynamics of the total population depends not only on natural growth, but also on migration gain, primarily from outside Russia, the government also seeks to influence it, which is reflected in regulatory legal acts. For example,

<sup>1</sup> Demographic crisis in Russia: who is to blame and what to do? Available at: <https://www.demoscope.ru/weekly/2005/0225/analit06.php>

<sup>2</sup> Rybakovsky L.L. (Ed.). (2003). Conceptual Dictionary of Demography. Moscow: TsSP. Pp. 142–143.

<sup>3</sup> Fertility, mortality, and natural increase. Demography. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/12781>

<sup>4</sup> Total fertility rate. Demography. Federal State Statistics Service. Available at: <https://fedstat.ru/indicator/31517>

<sup>5</sup> Distribution of population by age group. Demography. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/12781>

<sup>6</sup> Child benefits in 2024: Who is entitled to them, in what amount and how to receive them? Available at: <https://www.garant.ru/article/1677828/?ysclid=lxg9tox2vz472712370>

<sup>7</sup> On the creation and use on a paid basis of parking lots (parking spaces) located on public roads of regional significance in Saint Petersburg (Vasileostrovsky District): Resolution of the Saint Petersburg Transport Committee 353-r, dated August 18, 2023 Available at: <http://publication.pravo.gov.ru/document/7801202308240014>

<sup>8</sup> On measures of social support for large families in the Ulyanovsk Region: Law of the Ulyanovsk Region 154-ZO. Available at: <https://docs.cntd.ru/document/918008034>

according to the Presidential Decree “On the concept for the state migration policy of the Russian Federation for 2019–2025”, one of the goals of migration policy is to “create a migration situation that contributes to solving problems in the field of demographic development of the country”... Migration policy is an auxiliary tool for addressing demographic and related economic issues<sup>9</sup>. In the context of positive migration dynamics, the issues of interethnic harmony remain relevant, which are reflected in the Strategy for the State National Policy of the Russian Federation, the objectives of which are to harmonize interethnic relations, prevent conflicts on interethnic grounds, and ensure interethnic peace<sup>10</sup>. With the regressive gender and age structure of the Russian population there is a threat of demographic expansion associated with a possible transformation of the ethnic structure of the population and a low level of assimilation of migrants (Zolotareva, 2020). One of the statistical characteristics of demographic expansion is the ratio of birth rates of the indigenous and non-indigenous population (Balatsky, Ekimova, 2023).

Migration has an impact on the numerical and age-sex composition of the population. Although the number of migrants varies from country to country, there are certain patterns in the ages of migrants. The most active migrants are young people under the age of 25, who move for the purpose of studying, starting work and starting a family (Rogers, Castro, 1981). Thus, migration “rejuvenates” the population structure of the host country, which is a matter of national security in modern Russia due to population aging (Imideeva et al., 2023).

The migration situation in post-Soviet Russia, in turn, is characterized by different rates, scales and

vectors of migration movement. Migration gain at the expense of foreign countries has been observed in the Russian Federation since 1992. The maximum value of the absolute migration gain was noted in 1994, when it amounted to 978 thousand people; the minimum – in 2022, 34.9 thousand people. From 2009 to 2019 the overall population growth of Russia remained positive, since migration gain offset natural decline, and from 2020 the overall increase has been replaced by the overall decline<sup>11</sup>.

In the 1990s migrants from the republics of the former USSR accounted for the largest share of the Russian Federation’s migration gain, and one third of them received the status of internally displaced persons (Peshkova, 2022). Since the late 1990s and early 2000s, migration to the Russian Federation has acquired the character of labor migration, which was accompanied by naturalization procedures. In 1997–2022, arrivals from CIS countries accounted for an average of 90.08% of all arrivals to the territory of the Russian Federation, and migration growth with them averaged 57.05% of the total migration gain in the Russian Federation. Among those who arrived from CIS countries, on average for the above period, the majority were citizens of Ukraine (15.95%), Kazakhstan (13.33%), Uzbekistan (9.55%), Tajikistan (7.65%), Armenia (5.83%), Kyrgyzstan (5.01%), Azerbaijan (3.69%), Moldova (3.35%), Belarus (2.25%) and Turkmenistan (1.32%). At the same time, the share of migrants from different countries has changed over time: in 1997 the largest number of migrants came from Kazakhstan (43.10%) and Ukraine (25.25%), while in 2022 – from Tajikistan (34.08%), Ukraine (27.19%), Kazakhstan (11.76%) and Kyrgyzstan (11.39%).

The share of arrivals from Central Asian countries in the total number of migrants from CIS countries increased in 1997–2022: by 709.27% for Tajikistan, by 353.46% for Kyrgyzstan, and by

<sup>9</sup> On the concept for the state migration policy of the Russian Federation for 2019–2025: Presidential Decree 622, dated October 31, 2018. Available at: <https://base.garant.ru/72092260/>

<sup>10</sup> On the strategy for the state national policy of the Russian Federation for the period through to 2025: Presidential Decree 1666, dated December 19, 2012 (amended and supplemented). Available at: <https://base.garant.ru/70284810/>

<sup>11</sup> Overall population growth. EMISS. Available at: <https://fedstat.ru/indicator/31272>

36.38% for Uzbekistan<sup>12</sup>. The Central Asian countries are characterized by high fertility (TFR in 2022 was 3.3 children per woman in Uzbekistan; 2.8 in Kyrgyzstan; 3.5 in Tajikistan; 3.05 in Kazakhstan)<sup>13</sup>.

Thus, migration processes have an impact on the overall population growth in the Russian Federation. Nevertheless, in addition to replacing the natural population decline with migration growth, external migration at a certain stage can also contribute to the birth rate of the host country (Topilin, 2018). Earlier attempts were made to assess the contribution of the migration component to demographic dynamics, for example, the coefficient of social substitution (1951), the coefficients of reproduction of the population at different ages (1991), as well as the coefficient of reproduction under various scenarios of net migration (1997), but these indicators did not take migration into account as a constant or proposed hypothetical scenarios (Poveda, Ortega, 2010).

Taking into consideration these factors, as well as trends in the feminization of migration, the growing number of children born to incoming women, and the assumption that newcomers are starting families in the Russian Federation, the question arises: what contribution do these migrants make to the Russian birth rate? In this work, contribution is understood as the scale of the migrant birth rate, their share in the total number of births in Russia. To answer this question, the trends in the birth rate of migrants from Central Asian countries (Kyrgyzstan, Tajikistan, Uzbekistan, Kazakhstan)<sup>14</sup> in the Russian Federation will

be considered due to their abundance, as well as belonging to countries with high fertility (TFR in these countries exceeds the Russian one by more than two times).

#### **Theoretical and methodological part of the work**

There are few Russian social studies on the impact of external migration, including from Central Asian countries, on the birth rate in the Russian Federation. There are several reasons for this. First, active international migration to the Russian Federation has been going on for only about 20 years. Second, large-scale and comparative studies are limited by the specifics of methodological accounting of migration. The fact is that migration statistics are generated from at least six sources of information: Rosstat – on the arrival and departure of international migrants; Federal Migration Service (FMS) – on the presence of foreign citizens on the territory of the Russian Federation, on the naturalization of foreign citizens and on foreign citizens legally working in the Russian Federation (until 2016); the Main Directorate for Migration of the Ministry of Internal Affairs, to which the powers of the FMS were transferred after its abolition; the Border Service of the FSB of Russia; as well as the Central Bank of the Russian Federation – on personal money transfers between residents of the Russian Federation and other countries. The departmental approach complicates the data collection procedure, which provokes significant differences in them. Moreover, the rules for registering migrants have changed significantly. For example, in 2000 it became necessary for migrants from CIS countries to obtain a residence permit before registering at their place of residence, which led to an underestimation of the arrival of migrants. Since 2007, on the contrary, those who had a temporary residence permit have been also considered as migrants; since 2011 those who have registered at their place of residence for a period of 9 months or more have been considered as migrants as well. Russian citizens do not have to be de-registered when traveling abroad; and since 2012 temporary

<sup>12</sup> Migration gain by gender, age and migration flow. Demography. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/12781> (accessed: June 5, 2024).

<sup>13</sup> Monitoring of indicators of the quality of life of the population in the countries of the Commonwealth of Independent States 2019–2022. Interstate Statistical Committee of the CIS. Moscow, 2023. P. 55.

<sup>14</sup> Besides Kyrgyzstan, Tajikistan, Uzbekistan and Kazakhstan, countries of Central Asia include Turkmenistan. However, due to the migration policy of this country and the lack of necessary statistical information, Turkmenistan will not be considered in the study.

labor migrants whose contract has expired have been counted among those leaving, which has also caused slightly overestimated numbers of emigrants (Lifshits, 2016).

External migration not only affects the population of the host country “from the outside”, but also contributes to a change in the birth rate of the host country (that is, it transforms the demographic situation “from the inside”). For example, in Switzerland 23% of children are born to foreigners, and in the UK – more than 15% (Karachurina, 2007).

Russian social studies present different ways to assess the contribution of migration to the birth rate of the host country.

One way is to assess the correlation between the dynamics of fertility indicators; most often these include the TFR and migration gain. This approach is used by A.V. Topilin, who estimates the contribution of migration to the birth rate based on an analysis of migration growth from countries with different birth rates: high (this group includes Central Asian countries), medium and low (Topilin, 2018). Dividing the regions of the Russian Federation into four groups according to the level of migration growth over six years, he concludes that only in the group with the most migration-attractive regions does the TFR show positive dynamics. In other groups of regions there is no correlation between migration growth and the TFR, or it is negative. Thus, the age structure of migration gain (as a rule, it is people of working age who migrate) can have a prolonged effect on the dynamics of birth rate in the future; but for the period considered by A.V. Topilin (2010–2016) the positive dynamics of the TFR was observed only in 19 regions, and only in seven of them the TFR increased more significantly than the average for the Russian Federation.

However, the use of the TFR to assess birth rate (including migrants) in dynamics has some difficulties: the indicator adequately reflects the birth rate of only real generations (born in the

same time period) of women, since it does not take into account changes in the birth calendar, i.e. postponement of childbirth to a later time; therefore, its growth does not always mean a break in the trends, as well as the contribution of migration to fertility (Volant et al., 2020). Moreover, the TFR does not take into account the distribution of women by the number of children born, and also depends on the ages of births. In addition to the abovementioned disadvantages of migration statistics in Russia, there is also a time factor: migration to a country in a certain year does not guarantee the birth of a child in the same year, but it does not negate the likelihood of its birth in the future.

A correlative approach to assessing the contribution of migration to birth rate is used by A.Yu. Denisov, who ranked 876 European cities by general fertility rate, estimated the proportion of migrants from outside the European Union in them and concluded that, despite the high birth rates in some EU countries (for example, France, UK), the contribution of migrants from non-European countries to it is insignificant (Denisov, 2017).

However, the disadvantage of the general fertility rate is its dependence on the number of women; and the existing statistics of external migration in Russia do not allow us to identify the proportion of migrants in the country by country of origin; therefore, in this article we will not use a correlation method to assess the contribution of migration to birth rate.

Differences in migrant fertility rates compared to the indigenous population are also due to low rates before relocation due to migration planning and postponement of childbearing (Carlsson, 2023) and increases immediately after relocation due to marital migration and arrival at childbearing age (Alderotti et al., 2022).

The second way to assess the contribution of migration to the birth rate of the host country is analysis of the number of births by ethnicity of parents.

For example, Yu.A. Prokhorova, having analyzed data from the Department of Population and Health Statistics on the number of births by ethnicity of mother and father in 2011, 2012, 2013, notes that, despite the low contribution of migrant families to the Russian birth rate (about 2%) in 2011–2013, the average fertility growth in mixed types of urban families (where at least one parent has citizenship of another country) account for 15%, rural – 20%, which significantly exceeds fertility growth in families of citizens of the Russian Federation (1 and 0.5%, respectively). Mono-ethnic families have the highest birth rates, at 24% and 45%, respectively (Prokhorova, 2015). The author's aim was to consider the differences in fertility in mixed and mono-ethnic families in the Russian Federation, which is not the aim of our study. However, data on the number of births by ethnicity of parents is appropriate, so we will use it as a methodological basis.

E.P. Sigareva and S.Yu. Sivoplyasova used comparative analysis of data on the number of births by ethnicity of parents. In 2020, the citizenship of the parents was determined for 87.2% of the children born (for the remaining children it is either not specified or absent altogether). Among them, 95.4% of births are accounted for by Russian parents, 1.5% by foreign parents, and 3.1% by births in mixed couples with foreign citizens. The proportion of Russian parents prevails in all federal districts, ranging from 92.8% in the Northwestern Federal District to 98.5% in the North Caucasus Federal District. At the same time, almost 2/5 of all children born in Russia whose parents are foreign citizens were born in the Central Federal District: 39.2% of all children with both foreign parents and 36.2% with one foreign parent. This is due to the economic and migration attractiveness of the Central Federal District, relatively inexpensive living conditions and, consequently, a significant proportion of migrants in the district. In general, 45.8% of mothers and 54.2% of fathers in mixed couples have foreign citizenship (Sigareva, Sivoplyasova, 2022).

Thus, the main contribution to birth rate and marriage in Russia is made by citizens of the Russian Federation. The proportion of marriages where at least one of the spouses is a foreigner is 7.5% of the total number of marriages, and the proportion of births where at least one of the parents is a foreigner is 5% of the total number of births. Moreover, the possible impact of migration on fertility processes in Russia is significantly differentiated in the context of federal districts.

In the framework of this study we will conduct a comparative analysis of data on the number of births by parental origin, as it is the most statistically relevant for assessing the contribution of migration to the birth rate in the host country.

In addition to assessing the statistical contribution of migration to the birth rate of the host country, it is necessary to study the social and behavioral components of fertility, namely reproductive attitudes and behavior<sup>15</sup>. This aspect is important in the framework of the study, as it highlights the differences between the reproductive behavior of the host country – the Russian Federation and the Central Asian countries – migration donors.

Family sociology understands reproductive behavior as “a system of actions and relationships that mediate the birth of a certain number of children in a family (as well as out of wedlock)”<sup>16</sup>. The following types or components of reproductive behavior can be distinguished: “reproductive behavior itself, aimed at procreation; abortive behavior, and contraceptive behavior, whose task is to regulate the timing and number of births (or their absence)”<sup>17</sup>. Human reproductive behavior is based on two components: reproductive attitudes and childbearing attitudes<sup>18</sup>.

<sup>15</sup> Rybakovsky L.L. (Ed.). (2003). *Conceptual Dictionary of Demography*. Moscow: TsSP. P. 258; Yadov V.A. (Ed.). (1998). *Sociology in Russia*. Moscow: Publishing House of RAS Institute of Sociology.

<sup>16</sup> Antonov A.I., Medkov V.M. (1996). *Family Sociology*. Moscow: Publishing House of Moscow University. P. 201.

<sup>17</sup> Rybakovsky L.L. (Ed.). (2003). *Conceptual Dictionary of Demography*. Moscow: TsSP. P. 251.

<sup>18</sup> *Ibidem*. P. 334.

By its structure, reproductive behavior is similar to any human behavior and contains values, motivations, attitudes, and decisions that lead to specific results and actions. External migration is one of the factors influencing the reproductive attitudes and behavior of migrants, which, in turn, contribute to the birth rate of the host country. Summarizing modern approaches, K.I. Kazenin identified four types of migrants' reproductive behavior (Kazenin, 2017). The first type is adaptation, when, after rooting, migrants learn the reproductive and marriage behavior typical for residents of a new country, and migrants' reproductive activity decreases if the country they move to has a lower birth rate than their historical homeland. Factors that influence the rate of assimilation of the reproductive behavior of the host society include age of migrants, their education, socio-economic status (Afulani, Asunka, 2015), duration of staying in the country (Milewski, 2010), generation of migration (Adserà et al., 2012). The reproductive behavior of those who migrated in childhood is closer to the reproductive behavior of the host society compared to those who migrated at a more mature age.

In the logic of the second type, or socialization, migrants maintain the reproductive behavior typical for the citizens of their homeland in the new country, even after long-term residence, because, despite the fact that over time migrants gradually transition to reproductive behavior characteristic of the host society, an important role in the formation of reproductive behavior is played by cultural, religious, ethnic and family contexts (Jennings et al., 2012).

The third type is a gap, when significant changes in the reproductive behavior of migrants occur in the first post-migration period. Fertility can decrease or increase due to the impact of migration. Economic difficulties force some migrants to postpone childbirth, which leads to a decrease in the birth rate (Goldstein, Tirasawat, 1977). There is

evidence of a surge in the birth rate among migrants in the first years after relocation (Andersson, 2004; Milewski, 2011). This is due to the desire of migrants to secure their status in a new country, and also to the fact that for some migrants moving is associated with marriage, and finally, to the fact that in developed countries childcare benefits can meet the material needs of the whole family.

Migration of people with certain characteristics, such as high socio-economic status and educational level, is most likely. This is due to the relatively small number of children in the family. In other words, potential migrants are characterized by a decrease in reproductive intentions and a greater career orientation before moving, which forms selective reproductive behavior (Hendershot, 1971).

A.B. Sinelnikov, using the results of the analysis of data obtained in the framework of the 30th round of the sociological research of the Russian Longitudinal Monitoring Survey – Higher School of Economics (RLMS-HSE), notes that the average number of children per woman and per man among newcomers (both in early and late ages) is higher than among the indigenous population, and the proportion of the childless among locals is higher than among newcomers, with the exception of women over 60 years of age, whose fertility does not depend on their migration history (Sinelnikov, 2023).

However, the sociological approach does not allow us to consider the scale of the migrant birth rate, although it provides the necessary basis for studying reproductive attitudes. Since the aim of our work is to assess the contribution of migration to the birth rate in Russia, the data from sociological research will not be used.

Thus, approaches to assessing the contribution of migration to the birth rate of the host country vary depending on the objectives of the study. Within the framework of the sociological approach, the basis is the analysis of migrants' reproductive attitudes throughout all stages of the migration process; the demographic approach involves

studying the dynamics of demographic indicators (TFR, general fertility rate, proportion and series of dynamics of the absolute number of children born to foreigners). To assess the contribution of migrants to the birth rate of the host country, the analysis of the dynamics of the number of births by ethnicity of parents is the most comprehensive one due to the wide representation of the empirical object in the database.

Differences in the reproductive behavior of migrants and local residents attract the attention of researchers due to the socio-economic differences between the donor and recipient countries. The second demographic transition in European countries occurred simultaneously with the development of the economy (including the service sector) and the level of education of the population, urbanization, industrialization, which provoked a massive entry of women into the labor market, as well as with the development of the social sphere and medicine, which led to a decrease in child mortality. The countries of Central Asia are considered to have not yet completed the second demographic transition, that is, they are considered as countries with a birth rate higher than necessary for simple reproduction of the population and a poorly developed economy (this is a motive for moving to the Russian Federation). Thus, there is a question of preserving the reproductive behavior of their citizens in migration, which may be a “demographic dividend” for the host country and an economic one for the country of origin.

Despite the urgency of this problem, there are no comprehensive comparative studies of the impact of migration from Central Asian countries on the birth rate of the host country (Russia) in the long-term retrospective dynamics.

### **Research methods**

Due to the lack of information on the absolute number of migrants from Central Asian countries (as well as their children) residing in Russia, the issue of determining the migration status of an

individual remains relevant. Our method of assessing the contribution of migration from Central Asian countries to the birth rate in Russia consists in summarizing three types of statistical data reflecting an integrated approach to determining migration status: data on place of birth (relevant for analyzing the birth rate of migrants who have already obtained Russian citizenship), citizenship (relevant for migrants who have not passed the naturalization procedure) and ethnicity (obtained according to the principle of self-determination in the framework of a population census and independent of citizenship), which can lead to different results due to the methodological features of their obtaining.

The empirical part of the work is based on two sources of statistical data. First, these are the results of the All-Russian Population Census in 2002, 2010 and 2020 (the criticism of the ARPC-2020 by experts and the public has been taken into account<sup>19</sup>), which contain data on the number of children born to women of the most numerous ethnicities in dynamics (2002–2020). On the one hand, there is a limitation – the database also includes citizens of the Russian Federation who have indicated a different ethnicity based on the principle of self-determination; at the same time, they could have obtained Russian citizenship not long ago, which does not contradict their migrant status. According to the previously discussed socialization type of reproductive behavior, migrants can maintain the reproductive behavior of their country of origin after moving. On the other hand, the positive aspects of this source of information include the availability of data; the possibility of obtaining information about second- and subsequent-generation migrants, as well as confirmation that the migrant has cultural constructive ties with the country of origin (based on the principle of national self-determination).

<sup>19</sup> The population census was called the worst in the country's history. Available at: [https://octagon.media/politika/perepis\\_naseleniya\\_nazvali\\_xudshej\\_v\\_istorii\\_strany.html?ysclid=lpht9qppo389397090](https://octagon.media/politika/perepis_naseleniya_nazvali_xudshej_v_istorii_strany.html?ysclid=lpht9qppo389397090)

The second source is data from the Department of Population and Health Statistics (received from the registry offices), which provide complete information on the number of children born by ethnicity of the mother and father; this allows building the series of dynamics of the number of births by ethnicity of parents, as well as analyzing the growth rate of the number of births among citizens of different countries for the period from 2011 to 2023. The limitations of this method include inability to obtain information on the number of children born to one woman, as well as a significant proportion of those who gave birth to children and did not indicate ethnicity (0.9% annually on average for the abovementioned period). On the other hand, statistical data are an actual reflection of migrants' birth rate, which makes it possible to compare the birth rate by ethnicity with the results of the ARPC on the birth rate by ethnicity indicated by the principle of self-determination. The Department of Population and Health Statistics also collects data on the number of children according to their parents' place of birth. In this case the limitation is the lack of information about the specific countries of origin of the parents (there is information only about their birth on the territory of the Russian Federation or outside the Russian Federation). Nevertheless, this database makes it possible to differentiate persons of foreign origin who have given birth to children in the Russian Federation in the context of federal districts, as well as compare the statistics of births by parents of foreign origin with the migration increase in dynamics from 2015 to 2023. Moreover, the data presented demonstrate the birth rate among people of foreign origin (who could have obtained Russian citizenship), as well as migrants of the second and subsequent generations.

Comparative analysis, synthesis, analogy, generalization are used as general scientific methods in the work; descriptive statistics, analysis of dynamics series are used as statistical methods of analysis. Thus, as part of the analysis of the results

of the ARPCs of 2002, 2010, and 2020, as well as statistical data from the Department of Population and Health Statistics, dynamics series of the average number of children per 1,000 women of the corresponding ethnicity, as well as the proportion of births of citizens of Central Asian countries in the territory of the Russian Federation were built. The proportion of women by ethnicity and the number of children born was analyzed in order to obtain information on the contribution of representatives of each ethnicity to birth rate.

Using the MS Excel software, the relative weight indicators, as well as the basic and chain growth rates of the abovementioned indicators, were calculated to consider the contribution of migration from Central Asian countries to the birth rate in Russia.

The three databases have advantages and disadvantages, while using them together makes it possible to eliminate statistical inaccuracies and estimate the birth rate of migrants in Russia over a twelve-year retrospective period, since each of them represents the results of continuous statistical observation. To assess the contribution of migrants from Central Asian countries to the birth rate in Russia, the proportion of the number of children born to representatives of different ethnicities (according to the ARPC-2020 data), citizens of different countries (according to the social services office) and foreign origin (social services office) in the total number of children born in Russia was analyzed. While there may be inaccuracies in the absolute statistical data, the relative proportion is structurally reliable, reflecting the contribution of migration from Central Asian countries to the birth rate in Russia.

The study has elements of novelty in methodological and substantive terms due to the use of three sources of information (reflecting migration status from three sides) and their comparison in order to assess the contribution of migration from Central Asian countries to the birth rate in the Russian Federation (in%).

## Results

The analysis of the ARPC data allows us to draw conclusions about the dynamics of the average number of children per 1,000 women of the most numerous ethnicities (*Tab. 1*), including in comparison with other ethnicities. According to the methodological explanations to the ARPC, the most numerous ethnicities of the Russian Federation include those whose population exceeds 30 thousand people<sup>20</sup>.

The average number of children per 1,000 women of the corresponding ethnicity decreased from 2002 to 2010 among Russians, Tatars, Azerbaijanis, Georgians, and Tajiks (see *Tab. 1*). The average growth rate among all ethnicities was -1.3%. The average growth rate over two decades is 12.1%. In 2020, compared to 2010, this indicator decreased for all the ethnicities under consideration (with the exception of Russians and Kyrgyz), compared to 2002 – with the exception of Kyrgyz. The assessment of the contribution of representatives of different ethnicities to the birth

rate based on the analysis of the indicator “Number of women who indicated the number of children born” is shown in *Table 2*.

Since data on the absolute number of children born by ethnicity are available only for the most numerous ethnicities, in 2002 there are no data on the ethnicities of Central Asia. Therefore, taking into account the fact that these ethnicities were few in the Russian Federation in 2002 (the share of Uzbeks was 0.09%, Tajiks – 0.08%, Kyrgyz – 0.02%), we assess the contribution of their representatives to the birth rate of the Russian Federation as insignificant, since even with the preservation of reproductive behavior typical for the population of the country of origin, their contribution to the birth rate of the RF could not exceed 0.1%.

According to the results of the ARPC-2010, from 76.5 to 93.6% of women who gave birth to children and indicated their ethnicity are Russians. As the number of children increases, the proportion of Russian women who have contributed to the

Table 1. Dynamics of the shares of representatives of various ethnicities in the total number of persons who indicated their ethnicity and the average number of children per 1,000 women of the corresponding ethnicity, increase in indicators

Ethnicity	Proportion of ethnic representatives in all persons who indicated their ethnicity, %			Increase in the proportion of ethnic representatives in all persons who indicated their ethnicity, %			Average number of children per 1,000 women of the corresponding ethnicity			Increase in the average number of children per 1,000 women of the corresponding ethnicity, %		
	2002	2010	2020	2010 to 2002	2020 to 2010	2020 to 2002	2002	2010	2020	2010 to 2002	2020 to 2010	2020 to 2002
Russians	80.64	80.9	80.85	0.32	-0.06	0.26	1446	1405	1442	-2.80	2.60	-0.30
Tatars	3.87	3.87	3.61	0.00	-6.72	-6.72	1711	1623	1622	-5.10	-0.10	-5.20
Armenians	0.79	0.86	0.72	8.86	-16.28	-8.86	1680	1699	1139	1.10	-33.00	-32.20
Ukrainians	2.05	1.4	0.68	-31.71	-51.43	-66.83	1726	1749	1693	1.30	-3.20	-1.90
Azerbaijanis	0.43	0.44	0.36	2.33	-18.18	-16.28	1830	1696	1447	-7.30	-14.70	-20.90
Jews	0.16	0.11	0.06	-31.25	-45.45	-62.50	1264	1264	1166	0.00	-7.80	-7.80
Georgians	0.14	0.11	0.09	-21.43	-18.18	-35.71	1480	1381	1263	-6.70	-8.50	-14.70
Belarusians	0.56	0.38	0.16	-32.14	-57.89	-71.43	1765	1777	1316	0.70	-25.90	-25.40
Chechens	0.95	1.04	1.28	9.47	23.08	34.74	2163	2196	1623	1.50	-26.10	-25.00
Kyrgyz	0.02	0.08	0.11	300.00	37.50	450.00	1537	1568	1667	2.00	6.30	8.50
Uzbeks	0.09	0.21	0.25	133.33	19.05	177.78	1652	1666	1458	0.80	-12.50	-11.70
Tajiks	0.08	0.15	0.27	87.50	80.00	237.50	1774	1747	1622	-1.50	-7.20	-8.60

Compiled according to: ARPC-2002, 2010, 2020.

<sup>20</sup> Methodological explanations to the All-Russian Population Census. Federal State Statistics Service. Available at: [https://rosstat.gov.ru/storage/mediabank/Tom5\\_met\\_VPN-2020.pdf](https://rosstat.gov.ru/storage/mediabank/Tom5_met_VPN-2020.pdf)

Table 2. Proportion of women of the corresponding ethnicity in the total number of women who indicated the number of children born, by number of children in 2010 and 2020, %

Ethnicity	1 child		2 children		3 children		4 children		5 children		6 children		7 and more children	
	2010	2020	2010	2020	2010	2020	2010	2020	2010	2020	2010	2020	2010	2020
Russians	91.10	94.18	90.89	91.71	86.14	86.58	80.30	78.70	77.08	74.92	75.75	74.41	76.55	74.78
Tatars	4.71	3.38	4.48	4.91	6.26	6.46	7.35	6.16	10.47	8.15	10.26	6.80	9.32	6.19
Armenians	0.94	0.45	0.79	0.73	1.46	1.30	1.54	1.21	1.05	0.78	0.92	0.64	0.71	0.41
Ukrainians	0.89	0.92	2.25	1.22	2.52	1.25	2.56	1.22	2.52	1.22	2.39	1.19	2.32	1.40
Azerbaijanis	0.41	0.16	0.29	0.28	0.66	0.73	0.84	0.89	0.69	0.71	0.75	0.66	0.81	0.68
Georgians	0.12	0.06	0.08	0.07	0.11	0.09	0.12	0.09	0.09	0.08	0.07	0.07	0.06	0.05
Belarusians	0.22	0.22	0.65	0.30	0.69	0.29	0.72	0.28	0.74	0.30	0.70	0.28	0.66	0.33
Chechens	1.30	0.42	0.37	0.51	1.68	2.40	5.73	9.35	6.73	11.85	8.58	14.09	9.16	14.64
Kyrgyz	0.09	0.04	0.04	0.05	0.11	0.18	0.20	0.43	0.14	0.37	0.13	0.28	0.07	0.15
Uzbeks	0.15	0.10	0.10	0.12	0.24	0.34	0.40	0.65	0.28	0.61	0.24	0.46	0.16	0.39
Tajiks	0.08	0.08	0.04	0.10	0.13	0.39	0.25	1.02	0.20	1.01	0.22	1.13	0.18	0.97

Compiled according to: ARPC-2010, 2020.

birth rate begins to decrease, but the proportion of representatives of other ethnicities individually remains insignificant. Birth rate is the highest in Tatars (on average, they determine the Russian birth rate by 7.3%), Chechens (4.7%) and Ukrainians (2.3%). The contribution of representatives of other ethnicities is individually estimated at less than 1%, primarily due to the small number of parents, despite exceeding the average number of children per 1,000 women of the corresponding ethnicity. At the same time, the reproductive behavior of migrants from Central Asian countries is more likely to be of a socialization type (due to its convergence with birth rate indicators of the indigenous population).

According to 2020 data, from 74.8 to 94.2% of women (which is practically the same as in 2010) who gave birth to children and indicated their ethnicity are Russian. As the number of children increases, the proportion of Russian women who have contributed to the birth rate begins to decrease, but the proportion of representatives of other ethnicities individually remains insignificant. Tatars have the highest rates (on average, their contribution to the Russian birth rate is 6%), Chechens (7.6%) and Ukrainians (1.2%). The contribution of representatives of other ethnicities is individually estimated at less than 1%. Thus,

in 2020, compared with 2010, the contribution of Chechens, Kyrgyz, Uzbeks and Tajiks to the birth rate in the Russian Federation increased (by 3, 0.1, 0.2 and 0.3%, respectively), however, the contribution of representatives of Central Asia remains small and averages less than 1%. At the same time, the contribution becomes noticeable when representatives of this ethnicity have their third and fourth child.

Thus, despite the fact that, on average, representatives of various ethnicities belonging to Central Asia give birth to more children than Russians (although over the past 20 years the figure has decreased for all except Kyrgyz), their contribution to the Russian birth rate remains insignificant and amounts to about 1% in total. If the current population growth rates of these ethnicities in the Russian population structure continue for 20 years, it is possible for the share of Kyrgyz to increase to 0.19%, Uzbeks to 0.34%, and Tajiks to 0.7%, while the share of Russians decreases to 80.75%.

Table 3 shows the result of an analysis of data from the Department of Population and Health Statistics of the Russian Federation regarding children born in the territory of the Russian Federation by ethnicity of their parents (mothers and fathers).

During 2011–2023 the largest share of children was born to citizens of the Russian Federation (on average, 96.3% of mothers and 85.8% of fathers during the period); while the share of children born to Russian citizens in the total number of births was decreasing annually, with the exception of 2021 and 2023. The overall decline rate for the above period was –3.1%.

Despite the fact that in 2014–2016, as well as in 2021 and 2023, there was an increase in the share of fathers who are citizens of the Russian Federation,

the overall decline in their share in the total number of births was –2.1%. Despite the increase in the share of children born to foreign citizens (the base growth rate was 141.3% for mothers and 157% for fathers), their share remains quite low (the share of foreign mothers averaged 2.7%; the share of fathers was 2.5%). A dramatic decline in the share of foreign births in 2018 is explained by an increase in the proportion of parents who did not specify their citizenship.

Table 3. Proportion of mothers and fathers of the corresponding ethnicity in the total number of mothers and fathers whose children were born in 2011–2023, %

		2011	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Share of Russian citizens in the total birth rate	mother	98.01	97.57	97.15	96.96	96.95	96.71	96	95.97	95.11	95.86	94.57	94.96
	father	86.14	85.83	86.41	86.65	87.02	86.91	86.07	86.01	84.89	85.31	83.85	84.30
Share of foreign citizens in the total birth rate	mother	1.67	1.99	2.58	2.78	2.79	3.03	2.48	2.01	2.88	2.5	3.69	4.03
	father	1.49	1.74	2.33	2.62	2.67	2.89	2.42	1.98	2.77	2.56	3.33	3.83
Share of stateless persons in the total birth rate	mother	0.01	0.02	0.01	0.01	0.01	0.01	0	0	0	0	0	0
	father	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Share of persons with unspecified ethnicity in the total birth rate	mother	0.3	0.41	0.27	0.26	0.25	0.26	1.52	2.02	2	1.64	1.74	1.01
	father	12.36	12.41	11.25	10.73	10.30	10.19	11.51	12.01	12.34	12.13	12.82	11.87
Share of citizens of CIS countries in the foreign birth rate	mother	93.64	93.6	94.85	95.37	95.14	95.29	95.06	93.60	94.57	95.53	96.59	96.76
	father	84.56	85.32	87.55	88.33	88.35	88.70	88.34	86.61	88.91	90.02	92.72	93.26
Azerbaijan	mother	20.23	18.41	12.92	10.67	10.91	10.71	11.53	12.50	10.10	7.89	6.96	5.72
	father	15.67	14.88	11.72	10.10	11.23	11.36	11.91	13.19	10.37	9.12	7.76	6.51
Armenia	mother	13.89	13.54	12.29	11.64	11.70	11.29	10.59	4.75	6.34	5.61	3.32	3.70
	father	11.40	11.87	11.65	11.41	11.70	11.48	10.61	4.92	6.75	6.26	4.39	5.16
Belarus	mother	2.41	2.73	2.92	2.79	3.04	3.13	2.99	1.93	1.97	1.63	0.87	0.96
	father	5.75	5.47	4.59	4.33	4.78	4.98	4.39	2.61	3.31	3.15	1.99	2.19
Kazakhstan	mother	2.37	3.54	4.38	4.16	4.49	4.41	4.75	4.48	3.73	3.70	2.40	1.92
	father	3.53	4.89	5.23	5.08	5.67	5.45	5.90	5.50	5.25	5.27	4.01	3.69
Kyrgyzstan	mother	12.74	12.09	12.54	12.22	14.37	16.89	10.86	8.29	16.92	18.45	14.12	20.68
	father	8.24	7.21	7.61	7.64	9.39	11.48	7.87	5.85	13.36	14.12	12.35	18.95
Moldova	mother	5.89	5.54	5.87	5.33	4.94	4.17	3.47	4.29	2.63	2.03	1.19	1.06
	father	7.92	7.68	8.00	7.48	6.71	5.99	5.02	6.04	4.03	3.33	1.94	1.53
Tajikistan	mother	18.00	19.18	17.61	15.61	16.53	18.47	22.90	27.73	30.75	32.42	45.21	44.90
	father	16.00	17.13	15.79	14.56	15.41	17.09	20.26	23.86	26.21	28.85	38.92	39.10
Turkmenistan	mother	0.37	0.41	0.38	0.37	0.37	0.36	0.33	0.27	0.38	0.51	0.45	0.80
	father	0.36	0.39	0.38	0.38	0.48	0.37	0.35	0.21	0.45	0.53	0.47	0.88
Uzbekistan	mother	10.99	12.11	12.07	10.75	11.28	11.26	13.33	15.47	18.07	21.01	19.52	18.78
	father	13.37	14.06	14.25	12.60	13.16	12.87	14.40	16.78	19.30	20.84	20.98	19.18
Ukraine	mother	13.10	12.45	19.02	26.47	22.38	19.32	19.26	20.29	9.12	6.74	5.96	1.47
	father	17.76	16.42	20.79	26.42	21.46	18.93	19.28	21.04	10.98	8.54	7.18	2.81

Compiled according to: Department of Population and Health Statistics (on request).

CIS citizens have the largest share in the total foreign birth rate: on average, 95% of mothers and 88% of fathers among foreign citizens who have given birth to children in the Russian Federation are CIS citizens.

The shares of citizens of various CIS countries in the total birth rate of CIS citizens in the Russian Federation have been changing over the period under consideration. Thus, from 2011 to 2023, the proportion of mothers who are citizens of all the countries under consideration decreased, with the exception of Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The base growth rate of the representatives of these countries was 62.2, 149.4, 115.9% and 70.8%, respectively. The situation is similar for fathers: the base growth rate was 129.9, 144.3, 143, 43.4%, respectively; the base growth rate of the proportion of Kazakh citizens among fathers of children born in the territory of the Russian Federation (4.71%) also turned out to be positive.

The absolute number of births in the Russian Federation began to decline in 2016 (average decline rate for 2016–2023 was -5.18%); while the absolute number of children born to CIS citizens in the Russian Federation increased 1.75-fold, with an increase in the number of children born to mothers who are citizens of Kazakhstan (by 58.1%), Kyrgyzstan (by 84%), Tajikistan (by 236.6%), Turkmenistan (by 177.9%) and Uzbekistan (by 99.1%). The absolute number of births from fathers who are citizens of CIS countries increased 1.8-fold with an increase in the number of cases when the father is a citizen of Kazakhstan (by 8.6%), Kyrgyzstan (by 258.1%), Tajikistan (by 286.8%), Turkmenistan (by 284.2%), Uzbekistan (by 85.8%).

The number of children born on the territory of the Russian Federation to citizens of the countries under consideration was characterized by a change in the annual dynamics, either upward or downward, which indicates the absence of a single stable trend. The absolute number of births in

the Russian Federation in 2023 was 1.9-fold less than in 2011. The average annual growth rate of the absolute number of children in the Russian Federation for 2011–2023 was -5.2% (in mothers from Kyrgyzstan – 21.8%; Tajikistan – 17.7%; Turkmenistan – 19.5%; Uzbekistan – 12.7%); in fathers: 28.8; 17.7; 29.8%; 12.1%, respectively. Thus, the increase in the number of children whose parents are citizens of Kyrgyzstan and Tajikistan has become the most stable. Nevertheless, their contribution to the total birth rate in the Russian Federation averaged 0.39% and 0.74%, respectively.

Thus, the dynamics of growth in both the absolute number of children born to citizens of Central Asian countries on the territory of the Russian Federation and the proportion of parents who are citizens of these countries are positive. However, their contribution to the total birth rate of the Russian Federation remains insignificant – at the level of no more than 2%, which confirms the conclusions of the studies reviewed earlier. If we take into account that the increase in the birth rate of foreigners occurs against the background of a decrease in the birth rate of Russians, then the hypothesis about the possibility of a significant contribution of Central Asian citizens to the birth rate of the Russian Federation is exaggerated. Consequently, concerns about the possible replacement of the indigenous population by migrants remain erroneous<sup>21</sup>.

If we rank Russia's federal districts by growth rate of the share of parents (mothers and fathers) from Kyrgyzstan, Tajikistan, and Uzbekistan in the total number of births to citizens of CIS countries, then we see that the highest average annual growth rate is recorded in the Central Federal District (the share of parents from Central Asian countries in the total number of births to citizens of CIS countries increased annually by 30.10%).

<sup>21</sup> Migrants in schools – a new challenge for Russia. Available at: <https://topwar.ru/219053-migranty-v-shkolah-novyj-vyzov-dlja-rossii.html>

Parents from the Southern (26.27%) and North Caucasus federal districts (20.19%) rank second and third. The lowest figure is observed in the Ural Federal District (4.74%), which is due to an annual decrease in the proportion of fathers from Uzbekistan by 0.76%.

The share of parents from Kyrgyzstan in the total number of parents who are citizens of CIS countries increased most significantly in the Central Federal District (the share of mothers was growing annually by an average of 67.14%; the share of fathers – by 79.68%). A significant annual increase in the proportion of Kyrgyz mothers was also noted in the Southern Federal District: the growth rate was 84.23%, but the proportion of fathers increased annually by only 25.80%. The smallest increase in the proportion of parents from Kyrgyzstan was observed in the Far Eastern Federal District: the increase in the proportion of mothers was 3.66%, fathers – 6.50%.

The largest increase in the proportion of mothers and fathers from Tajikistan was noted in the North Caucasus Federal District: 27.66 and 16.81% annually, respectively; the smallest – in the Far Eastern Federal District: the proportion of mothers increased by 5.68% annually and the proportion of fathers by 3.52%.

The largest growth rates in the share of parents from Uzbekistan were recorded in the North Caucasus Federal District: the share of mothers grew annually by 14.85%, fathers – by 13.82%. The lowest rates were observed in the Ural Federal District: the share of mothers grew by 0.93% annually, while the share of fathers decreased by 0.76%.

Since birth rate statistics by parental origin are the most accurate reflection of migration status (due to the likelihood that a foreign citizen will undergo the naturalization process), the database, differentiated by the place of birth of parents, helps to additionally assess the contribution of migration to the birth rate in the Russian Federation, as it contains information on the number of births in

federal districts, which is comparable to migration gain in them. According to the data on the number of births by origin (place of birth) of parents for 2015–2023, the average annual growth rate in the number of births in the Russian Federation as a whole was -2.1% for mothers with foreign origin and -2.2% for fathers with foreign origin. It is important to note that in the Central Federal District the average annual growth rate turned out to be positive, amounting to 6.1% for mothers and 5.8% for fathers. For both parents the chain growth rate was negative twice: in 2017 (-8.9 and -7.7%) and 2023 (-17.6 and -18.9%). The highest average annual growth rate for the above period was recorded in the Central Federal District in 2019 (42.3% for mothers and 37.9% for fathers).

The birth rate in persons of foreign origin is differentiated within the Central Federal District: the largest shares are in Moscow and the Moscow Region. So, for 2015–2023 the average share of mothers of foreign origin who gave birth to children in the Moscow Region in the total number of mothers of foreign origin in the Central Federal District was 31.7%; fathers – 31.8%. Moscow (where statistics by parental origin have been available since 2017) accounted for an average of 48.8% of mothers and 41% of fathers of foreign origin (from all parents of foreign origin in the Central Federal District). Consequently, positive growth in the Central Federal District is mainly due to the contribution of Moscow and the Moscow Region to the total birth rate in the Central Federal District.

In other federal districts the situation differs significantly from the capital region, which forms an all-Russian trend: the absolute number of children born to persons of foreign origin is decreasing. The highest average annual decline rate was observed in the North Caucasus Federal District, which was -6.8% for mothers and -6.5% for fathers. In the Northwestern and Southern federal districts the average annual decline rates were -1.4, -1.9; -1.2, -0.9%, respectively; in the

Volga, Ural and Siberian federal districts: -4.3, -3.3; -2.6, -2.1%; and -2.7, -1.9%. There was a slight decrease in the Far Eastern Federal District, which is similar in dynamics to the Central Federal District, since negative growth was recorded in 2017 and 2023, as well as insignificant one in 2021, and the largest increase occurred in 2019. Nevertheless, the increase in other years was not enough to compensate for the loss in 2023, so the average annual decline rate was -0.4% for mothers and -0.7% for fathers.

The presented dynamics correlate with migration growth in the federal districts; the birth rate of persons of foreign origin is determined by migration growth by 75%. This gives grounds to assume that the dynamics of the number of births depends on “new” migrants, which is the basis for further research.

Thus, the contribution of migrants from Central Asian countries (Kyrgyzstan, Uzbekistan, Tajikistan, Kazakhstan) to the birth rate in Russia was calculated using analyzed data from three sources reflecting approaches to migration status (ARPC-2020, Department of Population and Health Statistics on Citizenship and Origin of Parents) (Tab. 4). The contribution was analyzed as the share (%) of the number of children born to women from Central Asian countries in the total number of births in Russia for 2011–2023. The largest contribution to the Russian birth rate was made by women from Tajikistan (0.6%), the least – from Kazakhstan (0.1%).

### Conclusion

The demographic crisis in the Russian Federation, triggered by natural population decline, is getting worse every year, causing socio-economic and demographic problems such as population aging, decrease in the number of able-bodied people, and as a result, a decrease in GDP and labor productivity. Due to the current situation, the quantitative characteristics of Russian population depend on migration gain, which until 2019 compensated for the general population decline.

Thus, to assess the contribution of migrants from Central Asian countries to the birth rate in the Russian Federation, we used data from three sources reflecting approaches to migration status: proportion of children born to women by ethnicity and citizenship, as well as by origin in the total number of births in the Russian Federation. Thus, for 2011–2023, 1.5% of children born in the Russian Federation are descendants of citizens of Central Asian countries; as of the critical moment of the 2020 census 0.5% of children born in the Russian Federation are descendants of Kyrgyz, Uzbeks and Tajiks. Also, during the above period 11.1% of children have parents of foreign origin (born outside the territory of the Russian Federation).

Based on the data obtained, representatives of ethnicities belonging to Central Asian countries have more children than Russians, with an average of 3.2 children per woman (although this figure has decreased over the past 20 years for all the countries except Kyrgyz). The contribution of representatives

Table 4. Contribution of the birth rate by women from the respective countries to the total birth rate in Russia in 2011–2023, %

Country	All-Russian population census (ethnicity of the mother)	Social services office (citizenship of the mother)	Social services office (origin of the mother)
Kyrgyzstan	0.1	0.4	11.1 (among all citizens of foreign origin without the possibility of differentiation by country since 2015)
Uzbekistan	0.2	0.4	
Tajikistan	0.2	0.6	
Kazakhstan	Cannot be assessed due to the small number of Kazakhs in the territory of the Russian Federation	0.1	
Russian Federation	90	96.4	83.5
Other / not stated	9.5	2.1	5.4 (origin is not stated)
Compiled according to: ARPC-2020, Department of Population and Health Statistics (on request).			

of other ethnicities (besides Russians) to the Russian birth rate is individually estimated at less than 1%, but it becomes more noticeable when they give birth to their third and subsequent child. Data on births by ethnicity of parents show a similar trend: despite the increase in the number of births to foreign citizens in the territory of the Russian Federation, they determine the birth rate in the host country by 2%. The birth rate in people of foreign origin in the Russian Federation is differentiated by federal districts: since 2015 it has increased only in the Central Federal District (the share of Moscow and the Moscow Region in the total birth rate of the Central Federal District was 73.6% annually on average over the period under consideration), which is due to its leadership in total migration gain; the number of children born to persons of foreign origin is determined by the amount of migration

growth in the federal district by 75%; thus, we can assume that “new” migrants make a significant contribution to the birth rate in the territory of the Russian Federation.

Despite the serious attention paid to migrant births, they still make an insignificant contribution to the total birth rate in the Russian Federation; this does not compensate for the decrease in the birth rate in the indigenous population due to the excess of birth rate decline in the local population over the birth rate growth in migrants, as well as the possible transformation of reproductive attitudes of migrants over time in a new country. The recommendation for migration policy is regular monitoring of the proportion of births and the increase in the birth rate in migrants and local residents, as well as adaptation and integration policies to eliminate the likelihood of demographic expansion.

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## Educational Strategies of Students in the Context of Digitalization



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**Abstract.** Digitalization of education has a serious impact on the nature of the transformation taking place in the learning process and also on the interaction of all participants in the educational process. However, these changes have regional specifics due to uneven digitalization of Russia's constituent entities and the peculiarities of integration of digital methods by various educational centers. At the same time, the changing meanings and values of education make it necessary to identify and describe educational strategies of modern students, as well as motivation, determining educational strategies. The study is based on the data obtained in the course of the surveys conducted by ISPR FCTAS RAS in 2021 and 2023. Arrays of three large educational centers (Moscow, Yekaterinburg and Irkutsk) were used for the article. We clarify the impact that distance learning, which had to be implemented in the context of the COVID-19 pandemic, had on the educational process, and show that the accelerated process of transition to new educational practices was carried out unevenly, which reflects regional differences in the assessment of online learning formats. It is noted that students' educational strategies are based on understanding the category of life success. Professionalism is an important component of life success for modern youth. During the data analysis, we identify two main strategies for achieving life success. The first strategy assumes high importance of intelligence as a key component in achieving success and welfare, regardless of the chosen field of activity. The second strategy involves relying on a high level of development of professional data and competencies in a chosen professional environment. Empirical data demonstrate a higher level of proficiency in basic digital skills among students in Moscow. The evaluation vector is shifted from the capital to the periphery. The same situation is observed with respect to students' assessments of skills related to personal characteristics and safety. The obtained conclusions can become the foundation for designing and implementing tools for adjusting the management system of higher education on the path of modernization processes associated with widespread introduction of information technology.

**Key words:** students, university professors, educational strategies, digitalization of education, distance education, digital literacy, pandemic experience.

### Introduction

Researchers' attention to the specifics of digitalization in higher education is due to the fact that rapid development of the Internet and digital technology expands opportunities not only in terms of getting a job, obtaining education, and various services, but also participating in political and social activities – from political actions to charity and volunteerism.

Transition to the sixth technological paradigm, rapid development of digital technology, and formation of a "learning society" – all this alters the structure of the economy and individuals' daily social practices, which brings researchers' attention to the specifics of digitalization in higher education, which forms the social potential of society's development. The intensity and pace of

technological development require reproduction of a skilled workforce adapted to new technologies, and possessing new knowledge and competencies. In this sense, it is education that helps people acquire a new profession in conditions of an increasing gap between the quality of education and the growing requirements for staff competencies. M.K. Gorshkov and F.E. Sheregi, paying attention to continuing and deep transformation of the Russian economy, note "a rapid increase in the share of intellectual labor in the product", which determines a condition of professional instability, frequent changes in the "profile of specialty and the need for advanced training of specialists" (The Youth of Russia..., 2020, pp. 304–305).

At the same time, the continuous reform of the higher education system and its reshaping to meet the standards of the Bologna system have significantly transformed the educational space of higher school. Researchers note the cardinal change in the goals and meanings of education, which today are increasingly aimed at replacing “a universal personality type that generates unique achievements in all spheres of activity ... with the reproduction of a highly specialized, one-dimensional “cog” in the labor market” (The Youth of Russia..., 2020, p. 303).

The dichotomy noted by the authors, i.e. the mismatch between the goals, motives and technologies of teaching educational communities in the educational process, is accompanied by an increase in the dispersion, heterogeneity of the student community in relation to education as a terminal or instrumental value. This attitude results in the priority of choosing further educational strategies with a focus either on obtaining high-quality knowledge, or on using a diploma or diplomas (“I have a second higher education”) that promise a worthy place in the social structure and in building social relations.

The ambivalence of using digital technology in the educational process is also manifested in the concept of stratification of education in accordance with teaching methods: “... distance, mass-based with the formation of narrow competencies and pronounced consumer attitudes and ‘human’, elite education” (Youth..., 2019, p. 162).

The absolutization of the degree of importance or recognition of its dominant role makes digitalization a goal, rather than means of the educational process, causing a negative connotation. Discrepancy in the estimates of the results of introduction of “digital education” in the “pre-modern era” has made it necessary to reveal the effectiveness of the learning process and preferences in choosing forms of education for the future, taking into account the experience gained in conditions of

forced self-isolation and transition to the “universal online” in the context of the COVID-19 pandemic.

The pandemic syndrome has exacerbated the contradiction between sufficient and forced digitalization of educational processes, focused on the advantages and limitations of distance learning, as well as the impact of digital teaching on the effectiveness of the educational process.

Specifics of the status of universities of various types (national federal, research, basic) and the associated funding also reproduce inequalities in terms of access, development and use of new technology in the learning process, including its digital components.

We should note that the student body in the absolute majority is an urban community due to the localization of universities in cities, which allows us to consider regional characteristics of students accordingly. In addition, a highly urbanized environment acts as a powerful incentive for the development of digital infrastructure, which cannot but affect the degree of students’ involvement in it.

Based on these features, it is important to find out to what extent satisfaction with the conditions and quality of education in general and its online component influenced the choice of educational strategies for students in different types of cities: in the capital (Moscow), a million-plus city (Yekaterinburg) and a large regional center (Irkutsk), and also to identify changes in students’ educational strategies, taking into account the experience of forced distance learning, depending on socio-territorial factors, in order to design tools for correcting the higher education management system at the next stage of its modernization.

#### **Literature review**

The problems of reforming the education system and transforming the educational space have been widely covered by foreign and Russian researchers. For example, G.E. Zborovsky, P.A. Abramova, V.S. Katashinskikh in their works consider both theoretical aspects of the sociology of education and

some regional aspects of the educational process and its temporal features (Zborovsky, 2022; *Forming a Non-Linear...*, 2018). The authors pay special attention to the fact that "... Social transformations caused by the transition to an information society bring to the fore the problem of a new paradigm of education, characterized by a redistribution of emphasis from educational to self-educational activities" (Zborovsky, 2013, p. 350).

We consider educational strategies within the framework of a tradition laid down by P. Bourdieu, who defined them as "long-term investments that are not necessarily perceived as such and are not reduced to an economic or monetary dimension. In fact, they are primarily aimed at the production of social agents worthy and capable of inheriting the properties of the group" (Bourdieu, 2007, p. 103). This very approach is most common in the Russian sociology of education, which emphasizes the role of social environment in the process of choosing a profession and a learning model: in social behavior and choosing an educational trajectory, students are not only (and not so much) guided by personal views, ideas and interests, but are also influenced by those values and models of educational and professional behavior, which prevail in their social environment (Konstantinovsky et al., 2015, p. 101).

Empirical research contains two dominant approaches – structural and subjective – that allow us to consider educational strategies. The structural approach focuses on the social status that an individual attains when obtaining higher education, which determines the rational grounds for choosing a future profession, qualification and form of employment (de Agrela et al., 2017).

Within the framework of the subjective approach, scientists (Skinner, Belmont, 1993; Legault, 2006; Ambarova, Zborovsky, 2021) study students' motivation in choosing learning goals and means, determined by the values and representations of reference groups.

The actual educational strategies of students are reflected in the works of T.K. Petrushenko (Petrushenko, 2018), K.Yu. Terentyev (Terentyev, 2015), N.M. Velikaya and co-authors (Velikaya et al., 2023), A. Hammad (Hammad et al., 2020), etc.

In particular, K.Yu. Terentyev identified two groups of educational strategies: professionally oriented and status-oriented, which can be implemented from an active position and indifferent position. The indifferent position is expressed in the passivity of strategy formation, in orienting toward someone else's opinion, choosing a profession and university at the "last moment", gaining knowledge in general, and not acquiring a profession, when getting an education at a university turns out to be a "side effect" of implementation of non-educational goals (Terentyev, 2015).

The works highlighting the digitalization of education (*Transformation...*, 2021; Rudenkin, 2022; Frolova, Rogach, 2022) are fundamentally important for our research. Most authors agree that it is necessary to maintain a balance between online and offline learning; the overload of digital technology for both children and adults generates excessive digital fatigue and alienation (*Transformation...*, 2021, p. 251; Pluzhnikova, 2021). Universities in other countries have also faced similar problems; it is reflected in the work of foreign colleagues. In particular, Bulgarian sociologists T. Stoyanova and M. Markova identify several criteria for the level of digitalization, including the demand for new digital skills from business and the digital expansion of the university's competence, which are adapted to the interests and preferences of students, taking into account their digital experience and digital expectations, significantly changing the educational environment (Stoyanova, Markova, 2022, pp. 53–54).

We also addressed social implications of digitalization, focusing on students' educational activity factors (Bulanova, Velikaya, 2011; Narkhov, 2021).

We should note that modern scientific literature hardly covers digitalization specifics in cities with different higher education capacity; this fact predetermined the choice of the topic for our paper.

### Materials and methods

The object of our study is the community of students of higher professional education, defined in the real socio-cultural space as nominal community, and in the virtual space as digital community. The general population is 4,076,436 students of Russian universities<sup>1</sup> (except for students studying in the interests of law enforcement agencies – the military, the Ministry of Internal Affairs, the Ministry of Emergency Situations, etc.) studying in bachelor's, specialist's and master's degree programs. Of these, 776,228 students study in Moscow (19.04% of the Russian contingent, 141 universities, including three branches)<sup>2</sup>, in the Sverdlovsk Region – 117,853 students (2.89% of the Russian contingent); out of 35 educational organizations and branches 21 are located in Yekaterinburg, the region has branches of Ural and Moscow universities, with the exception of the Technical University of UMMC, which is located in Verkhnyaya Pyshma, a satellite city of Yekaterinburg<sup>3</sup>; there are 64,674 students in the Irkutsk Region (1.59% of the Russian contingent; 10 out of 17 universities and branches are based in Irkutsk, including 7 backbone ones).

The subject of the study is educational behavior and educational strategies of students in the context of accelerated digitalization of both the education system and social life in general.

We rely on the ideas of a qualitative increase in the role of higher professional education in the reproduction of intellectual labor personnel

<sup>1</sup> The monitoring of the effectiveness of higher education institutions. Russian Federation, 2022. Available at: <https://monitoring.miccedu.ru/?m=vpo> (accessed: March 27, 2023).

<sup>2</sup> Available at: [https://monitoring.miccedu.ru/iam/2022/\\_vpo/material.php?type=2&id=10301](https://monitoring.miccedu.ru/iam/2022/_vpo/material.php?type=2&id=10301) (accessed: March 27, 2023).

<sup>3</sup> Available at: [https://monitoring.miccedu.ru/iam/2022/\\_vpo/material.php?type=2&id=10804](https://monitoring.miccedu.ru/iam/2022/_vpo/material.php?type=2&id=10804) (accessed: March 27, 2023).

(Gorshkov et al., 2023) and on the idea of youth as a self-organizing polysubject actor (Zubok et al., 2022), considering students as a special social group – the intellectual vanguard of Russian youth (Velikaya et al., 2023).

Empirical material was obtained in the course of research conducted by ISPR FCTAS RAS in 2021 and 2023.

1. A pilot survey by ISPR FCTAS RAS (March – April 2021) “Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format”. It was conducted in five RF regions via online survey with an additional representation of the array in Moscow. The volume of the sample after its repair amounted to 522 people, 214 of them were from Moscow; students of bachelor's, specialty and master's degree programs in the main integrated areas of training were interviewed. The sample included students from federal and regional universities and national research universities.

2. The study of the Center for Political Science of ISPR FCTAS RAS (April – May 2023) “Students of Russia: Civic culture and life strategies”, conducted according to an all-Russian sample in 30 constituent entities of all RF federal districts<sup>4</sup>.

<sup>4</sup> Research team: Doc. Sci. (Politics) N.M. Velikaya (Head), Cand. Sci. (Sociology) E.A. Irsetskaya, Cand. Sci. (Sociology) I.S. Shushpanova, Senior Researcher O.P. Novozhenina. A quota-proportional All-Russian sample was used with interdependent characteristics of the general population: gender, age, place of residence, level of education and areas of higher education. After the sample repair, the sample size was 6,757 respondents. The population survey was conducted in all federal districts, including: Central Federal District (Lipetsk Region, Moscow, Moscow Region, Smolensk Region), Northwestern Federal District (Vologda Region, Leningrad Region, Komi Republic, Saint Petersburg), Southern Federal District (Volgograd Region, Krasnodar Territory, Rostov Region), North Caucasus Federal District (Republic of Dagestan, Republic of North Ossetia – Alania, Kabardino-Balkarian Republic, Republic of Ingushetia, Chechen Republic), Volga Federal District (Nizhny Novgorod Region, Perm Territory, Republic of Tatarstan, Saratov Region), Ural Federal District (Tyumen Region, Sverdlovsk Region, Chelyabinsk Region), Siberian Federal District (Altai Territory, Irkutsk Region, Omsk Region), Far Eastern Federal District (Primorye Territory, Republic of Sakha (Yakutia), Republic of Buryatia, Khabarovsk Territory).

The main method of analyzing empirical information is comparison of self-assessments of educational activity by students in Moscow, Yekaterinburg and Irkutsk. It is based on the method of analyzing “dissimilar cases”. Educational centers with different potential of higher education were selected: the capital (Moscow with Lomonosov Moscow State University and 11 research universities), a metropolitan city – scientific and industrial center (Yekaterinburg, 29 universities, including the Ural Federal University) and a large industrial city (Irkutsk, 14 universities, including the Irkutsk State University; the Irkutsk National Research Technical University)<sup>5</sup>.

The data were processed in SPSS and Vortex 10 packages. For nominal scales, the data are given as a percentage of respondents, for ordinal scales – in average values (conditional index).

**Research results**

***Education in the system of life-purpose values of Russian students***

We consider educational strategies within the framework of a subject-motivational approach based

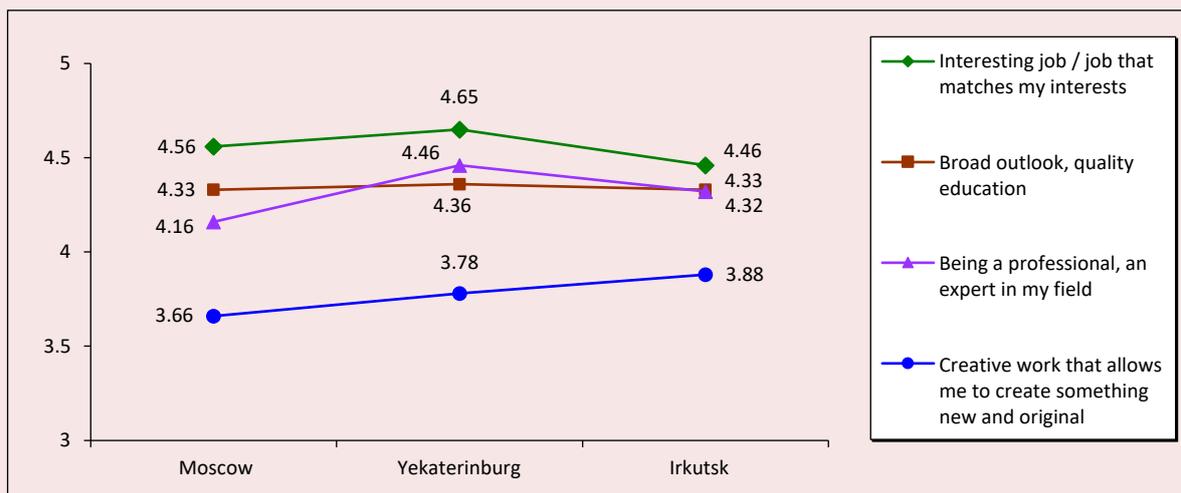
on analyzing dominant values, which student rely on when choosing their professional development, as well as those values that influence social practices enabling the achievement of educational goals (preparing for classes, passing exams, acquiring additional professional competencies, etc.).

Education currently remains one of the fundamental values of modern social development and one of the meaningful values of human life.

According to N.A. Seliverstova and Yu.A. Zubok (Zubok, Seliverstova, 2022), who identify the terminal and instrumental meanings of education, the instrumental meanings of education in the student environment (prestige, career opportunities, obtaining a diploma) prevail over the terminal ones (development of abilities, general culture, desire for knowledge). This also determines the strategic goals, whose achievement is programmed by students when building an educational strategy.

The semantic value of education is associated with four leading factors (Fig. 1), the first place among which is traditionally occupied by the match

Figure 1. Structure of terminal values related to education and professionalism, average score on a five-point scale



Compiled according to: ISPR FCTAS RAS survey “Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format”, 2021.

<sup>5</sup> Supervisors of the field stage in the selected regions are E.A. Irsetskaya (Moscow), D.Yu. Narkhov (Yekaterinburg), O.B. Istomina (Irkutsk).

between future work and the interests of students. The second most important position – availability of high-quality education – is also equally important for students, regardless of the territory of residence. According to the indicator of professionalism, Yekaterinburg respondents gave higher marks, and the creative component is more important for students from Irkutsk.

Students' opinions on the most important life goals were determined by choosing the three most important ones from the general list, which allowed us to draw the following conclusions. Students see the achievement of self-sufficiency as a “general goal” by ensuring stable employment that guarantees independence; a high level of welfare and professional realization (*Tab. 1*). There is a noticeable fundamental difference in building the top list of the most important values among students from different regions. Students in Moscow and Irkutsk recognize the achievement of material welfare as the most significant value (64.0 and 66.7%, respectively); and for students in Yekaterinburg, the most significant goal is to get a job to achieve independence (62.7% of respondents hold this opinion).

The analysis of the data obtained shows that Russian students consider professionalism as an important component of life success, although not the most significant one. Reliance on one's own abilities and intelligence, pragmatism and entrepreneurship are seen as more significant than education and professionalism; this fact influences the design of an educational strategy, where soft-skills orientation becomes more relevant, which pushes students to improve some professional skills outside the university (*Fig. 2*).

Thus, with regard to achieving life success and welfare among young people, two main most popular strategies can be distinguished: first, relying on one's own intelligence as an opportunity to achieve independence and high welfare in any field of activity, regardless of the profession; second, relying on professionalism and the development of competence in a chosen professional field.

The first strategy implies early employment outside of one's profession and a high focus on obtaining various skills and competencies in the system of additional education. The second strategy, on the contrary, involves systematic and successful completion of training in the chosen specialty with the prospect of employment.

Table 1. Distribution of responses about the most important life goals in the context of regions, multivariate question, % of respondents

Response option (three major goals after graduation from the university)	Moscow	Yekaterinburg	Irkutsk	Array on the whole*
Getting a permanent job that will allow me to become independent; it does not necessarily have to be related to my profession	62.6	62.7	60.3	64.8
Ensure a high level of welfare and income	64.0	50.0	66.7	65.2
To occupy a professional position that people will look up to (for example, a specialist/expert or the so-called position of an “irreplaceable worker” in an organization, company)	45.3	44.1	46.2	43.6
Launch my own business, set up my own company	25.7	21.6	23.1	26.6
Get a position of managing director at an organization or company	17.3	14.7	17.3	19.7
Obtain a high position in the public administration system	11.7	2.0	9.0	9.9
Establish oneself in politics, in the activities of political parties or non-governmental organizations	9.8	30.4	8.3	7.5
Obtain a high position in the local government	2.8	2.0	4.5	4.2

\* Here and further, the values “Array as a whole” are given for the entire sample, and not only for the three cities selected for analysis. Compiled according to: ISPR FCTAS RAS survey “Students of Russia: Civic culture and life strategies”, 2023.

Obviously, initial resources of the student community are characterized primarily by the quality of the education received, formally expressed in Unified State Exam (USE) scores and actually expressed in the amount of internalized knowledge. Due to the historically established structure of higher education, the “quality of applicants” decreases from the capital city to periphery, and USE scores only partially determine educational strategies. Nevertheless, there are other indicators that significantly influence students’ motives related to choosing a university (Tab. 2).

Figure 2. Components of the basis of success in the representations of students, multivariate question, average value on a scale from 1 to 5



Source: ISPR FCTAS RAS survey “Students of Russia: Civic culture and life strategies”, 2023.

Table 2. Distribution of motives for choosing a university, broken down by city, average score on a five-point scale

Statement	Moscow, 2021	Moscow, 2023	Yekaterinburg, 2021	Yekaterinburg, 2023	Irkutsk, 2021	Irkutsk, 2023	Array on the whole, 2021	Array on the whole, 2023
It was relatively easy to enroll in the educational institution in the field of my interest	3.30	3.09	2.8	3.26	3.09	3.35	3.20	3.13
Prestige of the university, its reputation as an advanced university	3.22	3.35	3.52	3.51	2.97	3.02	3.12	3.28
It corresponded to my ideas about the modern educational process	3.06	3.24	3.23	3.32	2.94	2.92	2.97	3.13
Demand for graduates of this university on the labor market – they can easily find a job	2.50	3.2	2.96	3.15	3.14	3.28	2.68	3.02
Orientation of the university toward world educational standards	2.11	2.5	2.21	2.44	1.94	1.79	2.06	2.42
Opportunity to get an international diploma	1.70	2.09	1.94	2.02	1.68	1.45	1.73	2.05

Compiled according to: ISPR FCTAS RAS survey “Students of Russia: Civic culture and life strategies”, 2023; ISPR FCTAS RAS survey “Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format”, 2021.

For example, the average assessment of the statement “prestige of the university, its reputation as an advanced university” shows a slight increase in the whole array in 2023 compared to 2021 (3.28 vs 3.12, respectively). At the same time, the average value of such an indicator of the motive for choosing a university as “ease of admission to an educational institution” is significantly decreasing among students in Moscow (3.0 in 2023 against 3.3 in 2021), and increasing among students of regional universities (Yekaterinburg in 2021 – 2.8, in 2023 – 3.26; Irkutsk in 2021 – 3.09, and in 2023 – 3.35). The influx of applicants from other cities with high USE scores and high motivation to Moscow explains the importance of prestige of a university for Moscow students.

We should note a significant actualization of such an indicator as the demand for university graduates in the labor market. In the whole array, the average value of this indicator increased from 2.68 in 2021 to 3.02 in 2023. This trend is typical for students of both Moscow and regional universities (see Tab. 2).

In general, the most significant motives for choosing a university remain as follows: the opportunities associated with obtaining high-quality professional knowledge (university prestige, ideas about the educational process) and the possibility of future employment, although in practice they “lose out” to the mass orientation of applicants to higher education as such.

#### ***Digitalization of education and prospects***

One of the basic attributes of higher education modernization is the desire for universal digitalization, introduction and improvement of electronic learning systems and those for testing students' knowledge. As a result, digital knowledge and skills have become one of the key resources of educational strategies for modern youth. This was especially evident in the conditions of “shock digitalization” (Nazarov et al., 2021), caused by forced self-isolation of all participants

in the educational process during the coronavirus pandemic.

According to the respondents' self-assessments (which, however, seem to be overestimated; a simple proof of this is the massive concerns of graduate students regarding the procedure for norm control of theses, expressed in the form of thematic memes on social media), only basic digital competencies are at a high level: mastering a basic package of programs for distance learning (Zoom, electronic schedule, electronic libraries, messengers, etc. – an average score of 8.72 for the array as a whole out of 10); knowledge of basic software (office programs: Word, Excel, PowerPoint, browsers, mail, etc. – 8.58); search for information on the Internet: data, articles, publications, media materials, etc. on issues of interest (8.53); information visualization skills (creating presentations, infographics – 8.37); use of file sharing and cloud services (8.04); data management skills (basic statistical analysis, working with databases – 7.29).

In the context of regions, it turned out that Moscow students showed higher scores in all positions, while students from Irkutsk, on the contrary, had lower scores, with the exception of data management skills (minimum – Yekaterinburg, average 6.8).

The set of skills related to personal characteristics and security is rated less highly, in this block the “leadership” belongs to digital etiquette (7.93), using the means of ensuring security and data protection (7.51), and emotional intelligence (ability to empathize, control and understand the emotions of other people – 7.31). At the same time, the personal qualities necessary for the successful development of knowledge in a digital format were assessed more modestly: systems thinking (ability to analyze large amounts of information, find and describe patterns, etc.) – 6.79 points; ability to solve problems in conditions of uncertainty, adaptability – 6.75; interest in obtaining a “digital profession” (Internet

marketing, product/project management, design, programming, data analytics) – 6.18; readiness for continuous learning – 6.14.

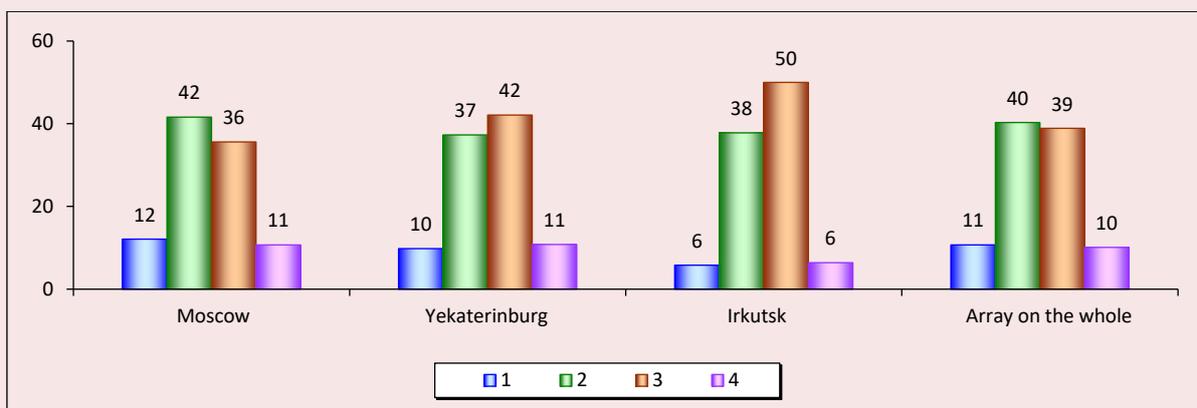
The vector of decreasing scores, as in the previous block, is directed from the capital to periphery (the minimum in all cases lies with Irkutsk students, with the exception of interest in obtaining a “digital profession” – Yekaterinburg, 5.43).

Already at this stage, a significant part of the respondents have difficulties in mastering digital knowledge. This is even more evident in the analysis of the advanced digital competencies indicator block, which received the lowest and more dispersed scores both for individual competencies and in the context of regions. In the whole array, an average score above 5 points was obtained for awareness of the impact of digital technology on the environment and ecology (6.13); understanding the concept of copyright and the specifics of licensing digital content and intellectual property (5.9); creation and development of digital video and photo content (for example, YouTube videos, blogs, photo and video processing using special programs: Adobe Photoshop, CorelDRAW, Visio, etc. – 5.56). A skill

such as creative application of digital technology (using digital tools to create fundamentally new products (innovations), new knowledge, etc.) is rated slightly lower – 4.91. Skills related to the use of advertising and promotion tools on the Internet (SMM, targeting, advertising offices on social media and in browsers) were rated at 3.95 points, competencies in advanced data analysis in specialized programs were rated even lower (R, SPSS, dashboards, Excel, writing SQL queries, etc. – 3.88 points), proficiency in programming languages (3.51; however, this is a very specific skill, often redundant for an average user). The situation regarding assessment of project management skills, project management methodology and knowledge of relevant programs (for example, Jira, Confluence, Bitrix-24, Agile approach, Scrum, Kanban) is alarming – 3.18 points, since this skill is the basis for the trend toward introducing project management ideology in both education and the socio-economic sphere as a whole.

The result of updating the available resources is expressed in the current academic performance of respondents. The obvious vector of its decline is from the capital to the periphery (*Fig. 3*).

Figure 3. Current academic performance of students, % of respondents



Values: 1 – only excellent; 2 – only good and excellent; 3 – mostly good and excellent, but sometimes there are satisfactory grades; 4 – mostly satisfactory, but sometimes there are good and excellent grades.

Source: ISPR FCTAS RAS survey “Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format”, 2021.

Despite the fact that in the whole array there is an approximate equality of groups of exemplary students and underachievers (one in ten) and groups of successful and average performers (two out of five), the regions show a noticeable shift toward the middle groups: fewer exemplary students, and in Irkutsk – fewer underachievers. That is, educational strategies are mostly not implemented to the fullest extent for at least half of respondents (the last two groups), but also very poorly only for every tenth respondent. However, there remains an open question about the value of knowledge or the value of a diploma as a “wallpaper degree”, as well as about the objectivity of assessments and ways of obtaining them (in general, at least 35% of respondents indicated that they had retakes during their studies, including retakes for a higher grade).

Another trend consists in the fact that while studying at a university students face a mismatch between their initial plans and the results of their implementation. The average scores of indicators of compliance with aspirations and education received are far from the maximum values: on a five-point scale they do not exceed 3.21 (Moscow, “inclinations and abilities” indicator), the minimum is 2.97 (Yekaterinburg, indicator showing compliance of education with the profession that

one would like to pursue after graduation). At the same time, the indicator of compliance with the dreams of who the respondent would like to become is almost the same for all groups (3.02–3.04 in cities; 3.11 in the whole array).

Nevertheless, the accumulated amount of resources and experience in implementing educational strategies has allowed leading educational communities to go through the period of “forced distance learning” during the pandemic relatively confidently. It is very significant that students, as in the case of their own digital skills, overestimated their own level of readiness for distance learning: the average score for the array on the whole is 8.54 on a 10-point scale. The tendency toward decreasing the level of readiness from the capital to periphery was repeated: Moscow students – 8.69, Yekaterinburg students – 8.31, Irkutsk students – 8.27 points.

The students rated the level of work of teachers in the distance format as quite high (*Tab. 3*), although the skills directly related to technology proficiency (online lectures, online research work) were rated as insufficient (3.71 and 3.61 points on the array).

Further assessment of the main aspects of distance learning was carried out in two directions: from the side of positive influence on the implementation of educational strategies and from the

Table 3. Students' assessment of teachers' work in a distance format, average score on a five-point scale

Response	Moscow	Yekaterinburg	Irkutsk	Array on the whole
They were open for feedback, it was possible to ask and clarify something	4.20	3.97	4.30	4.22
They presented the material in an accessible and understandable manner	4.06	3.82	4.17	4.11
They actively used presentations, video materials, online broadcasts of third-party resources in the course of teaching	3.96	3.95	4.35	4.08
They always accessed online classrooms on time and on schedule	3.88	3.66	4.25	4.08
They demonstrated a high level of proficiency in online lecture technology	3.54	3.45	3.90	3.71
They demonstrated strong skills in conducting research and project work online	3.41	3.14	3.84	3.61

Source: ISPR FCTAS RAS survey “Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format”, 2021.

side of limitations and risks. The aspects themselves were divided into three groups: educational, communicative and psychological-physiological.

The educational aspects facilitated by online formats are rated quite highly: the average exceeds 3.55 – the assessment of mastering information from lectures (according to this indicator, the variance is minimal); understanding of the studied material as a whole, assimilation of information at seminars (3.63 and 3.65, respectively) are close to this aspect. Paradoxically, students scored high on factors related to assessment activities: adequacy of knowledge assessments in current classes (3.71) and comfort of passing tests and exams (4.24). In the context of cities, the maximum difference was recorded in terms of optimizing the educational load: peak – Yekaterinburg (3.96), Moscow – 3.94, minimum – Irkutsk (3.47), the array on the whole – 3.73.

Students most often associated the studies-related limitations and risks with technological problems, which is quite expected and partly reflects the level of development of the technical infrastructure in universities: in Yekaterinburg, a maximum (60% of the group), in Irkutsk a little less (57%), in Moscow at least half of the respondents, in the whole array – 48%. Estimates of the factors such as lack of a clear daily routine, blurring the “home space – study and work space” boundary were also high: the maximum was for Moscow students (every second student), similar values were for Yekaterinburg students (37%) and Irkutsk

students (34%), for the array as a whole – 39%. Risks associated with the need to master new programs, fill out online forms, and use complex software products were noted by every ninth to tenth respondent, the greatest difference being between Moscow (9% of respondents) and Yekaterinburg students (19%). These self-assessments seem somewhat overestimated, as evidenced by the relatively low level of proficiency in complex digital skills.

The communicative aspects of online education are expected to be evaluated very modestly regarding their positive sides (about 3 points on a five-point scale). On the contrary, the risks and limitations associated with reduced communication opportunities, lack of direct contact with a person, and decreased social skills are obvious to respondents (65% of students in Moscow and Yekaterinburg, 58% in Irkutsk). The availability of personal data is also a concern (15% of students in Moscow, 14% in Irkutsk). Yekaterinburg students are less concerned about this aspect, it was noted by 6% of respondents.

Among the positive factors in online education, the ability to optimize the time spent on organizing the educational process received the highest score (Tab. 4). At the same time, the larger the city in which the respondents are studying, the more significant this factor is. The opportunities to focus on the educational material in the regional context received similar assessments.

Table 4. Psychological and physiological aspects, which are sufficiently facilitated by online education, in the context of cities, average score on a five-point scale

Aspect	Moscow	Yekaterinburg	Irkutsk	Array on the whole
Optimizing the time spent on preparing for classes, tests and exams	4.25	4.08	3.80	4.01
Concentration of attention on a demonstration screen	3.36	3.38	3.43	3.42
Concentration on the educational material, without distraction to other websites, correspondence	3.13	3.05	3.34	3.26
Source: ISPR FCTAS RAS survey “Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format”, 2021.				

Table 5. Psychological and physiological aspects of the disadvantages and risks of online education, in the context of cities, % of respondents\*

Response option	Moscow	Yekaterinburg	Irkutsk	Array on the whole
Health problems due to a "sedentary lifestyle": deterioration of vision, back pain, etc.	51.9	40.6	56.4	46.7
Gadget addiction, screen addiction	30.4	36.6	41.0	31.8
"Clip thinking": inability to perceive large amounts of information	27.1	19.8	30.1	26.0
Feeling lonely	35.5	19.8	21.2	24.9

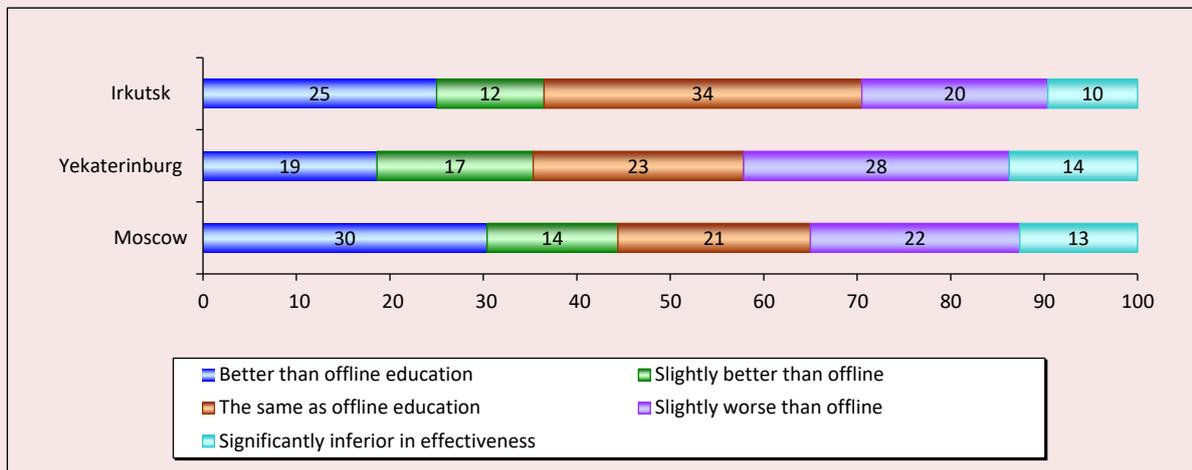
\* Multiple response options could be selected.  
Source: ISPR FCTAS RAS survey "Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format", 2021.

Among the negative factors, with the general tendency toward health deterioration caused by physical inactivity, it turned out to be noticeably more significant for Irkutsk students (*Tab. 5*), who also pointed out the risk of gadget addiction more often than others. It seems that this risk is significantly underestimated for the student community as a whole<sup>6</sup> (Bogdanov et al., 2023). It also turned out that Moscow students are much more likely than other students to see the risk of ending up alone in online education. This is very

strange, since Moscow has the most developed infrastructure designed for communications.

A natural result of mass online learning (during the pandemic) was the attitude toward online education in general: students could not unambiguously assess its effectiveness. While in 2022 there was greater optimism among students in Moscow, where technological capabilities minimized the problems associated with organizing online education and ensured the transition to online forms in a short time (*Fig. 4*).

Figure 4. The attitude of students toward online education, % of respondents



Compiled according to: ISPR FCTAS RAS survey "Educational strategies of students in the context of digitalization, self-isolation and transition to a distance learning format", 2021.

<sup>6</sup> A survey of students of UrFU and the Medical University (supervisor: Doc. Sci. (Medicine), Prof. S.I. Bogdanov, N = 1,148, field stage – D.Yu. Narkhov) conducted in November – December 2021 revealed the presence of a group with clinical manifestations of gadget addiction requiring medical care (1% of the sample). More than half of the students (52% of respondents) were at risk of developing gadget addiction.

The discrepancy between determining the value and role of traditional and digital technologies in the educational process remains in the discussion field of researchers. On the one hand, the information transformation caused by the development of digital technology justifies the need for higher education to correspond to the innovative development of the national economy in order to provide personnel. The expansion of educational opportunities based on distance learning and the availability of any information represent “the undoubted advantages of digitalization of educational activities, for example, it becomes possible to form self-adjusting “smart educational content” to meet the requirements of any participant in the educational process” (Transformation ..., 2021). On the other hand, the “Googlification” of knowledge has created information chaos in professional education, often associated with students’ reliance on Internet resources, which in fact do not always give the desired result.

According to the survey by ISPR FCTAS RAS in 2021, it was noted that in all cities there is a fairly large group claiming that online education is either slightly worse or seriously inferior in effectiveness to traditional technologies. Despite this, the level of satisfaction with the quality of education is close to the above estimates of attitudes toward it. Paradoxically, Irkutsk students demonstrate higher satisfaction with online learning: the score is higher than for the whole array, since they were more likely than others to name technical problems.

In our opinion, this paradox is explained by a decrease in the requirements for the level of knowledge on the part of teachers for the same reason: they are deprived of the possibility of high-quality knowledge verification, and therefore academic performance in the online format is higher than when using traditional forms of control.

In 2023 students from different regions also demonstrated different degrees of satisfaction with education digitalization aspects, which, naturally, affects the choice of educational trajectory (Tab. 7).

Table 6. Index of satisfaction with the quality of distance learning and the quality of education in general, I\*

Response option	Moscow	Yekaterinburg	Irkutsk	Array on the whole
Index of satisfaction with the quality of distance learning	0.532	0.587	0.917	0.723
Index of satisfaction with the quality of education in general	0.747	0.421	1.148	0.906

\* $I = (2a + b - c - 2d) / 100$ , where  $a$  – “completely satisfied”,  $b$  – “sooner satisfied”,  $c$  – “sooner dissatisfied”,  $d$  – “completely dissatisfied”.  
Compiled according to: ISPR FCTAS RAS survey “Students of Russia: Civic culture and life strategies”, 2023.

Table 7. Index of satisfaction with various aspects of digitalization of educational process, I\*

Response option	Moscow	Yekaterinburg	Irkutsk	Array on the whole
Quality of external online courses	0.128	0.086	0.217	0.144
Availability of electronic educational and scientific literature	0.690	0.879	1.022	0.779
Using point-rating systems, electronic record books	0.415	0.207	0.731	0.464
Using the student’s electronic personal account	0.741	0.894	1.262	0.868
Information culture, digital literacy of teachers	0.561	0.907	0.680	0.620
Provision of multimedia equipment and computers for students	0.464	0.163	0.688	0.484
The ability to use the “fast” Internet, Wi-Fi in the university	0.104	- 0.851	0.245	0.044

\* $I = (2a + b - c - 2d) / 100$ , where  $a$  – “completely satisfied”,  $b$  – “sooner satisfied”,  $c$  – “sooner dissatisfied”,  $d$  – “completely dissatisfied”.  
Compiled according to: ISPR FCTAS RAS survey “Students of Russia: Civic culture and life strategies”, 2023.

The overall result of evaluating the experience of forced distance learning and accelerated digitalization turned out to be quite natural. More than half of students opted for methods combining the advantages of e-learning and traditional learning.

### **Discussion of the results**

The topic of virtualization of learning is not new, although during and after the COVID-19 pandemic, activities related to the implementation of various types of strategies and projects for the virtualization of university activities became particularly important and acute (Petrov et al., 2022; Hołowińska, 2022).

Accelerated digitalization caused by forced isolation during COVID-19 has significantly changed the educational space of most countries and regions and the educational process, as noted by Russian and foreign researchers (Frolova, Rogach, 2022; Gonca Telli, Aydın, 2021).

In Russia, as in other European countries (Schuetze, 2024), digitalization was initially carried out at a slow pace and only in some industries. Although the adoption of special federal programs has contributed to the integration of new teaching methods into educational process, the uneven digitalization of various regions and educational institutions of various types continues to persist, which is confirmed by the data of our study.

Digitalization in Russia, in education in particular, can be described in terms of the digital divide proposed by R. Bolton, which means the changes that occur when new digital technologies “change customer experience, business processes and business models, thereby changing the value of education and the content of the educational process” (Bolton et al., 2018, p. 17). We are also not inclined to consider such changes as a threat, since it is an emerging new way of life that generates new social practices. Educational institutions must adapt to new situations and new norms.

Based on our research data, we share the position of colleagues who have shown that massive involvement of students, teachers and administration in the use of digital technology has not only demonstrated new learning and self-education opportunities, but also created a breeding ground for new risks and threats in a variety of areas, including psychological (Hammad et al., 2020).

Accelerated transition to digital technologies in the educational space of universities is ambiguously assessed by all actors of educational process. Despite the fact that most of our respondents have quite successfully adapted to new forms, more than half prefer combining online and traditional teaching methods. At the same time, over the past two years the number of students who prefer to return to traditional forms of education has increased significantly (from 20.8 to 30.5%), and the number of those who focus on the online format has decreased (from 25 to 7%). Online learning is supported by about 7% of students, the vast majority of whom have permanent employment. The existing potential of higher education has been reflected in the choice of digital forms of education more prominently in Moscow and Irkutsk.

### **Conclusion**

Information technologies have significantly influenced the concept of educational processes in which the educational activity of university communities is realized. At first glance, the potential of the younger generation with its high degree of adaptation to the dynamics of social change, the ability to use digital technologies in education corresponded to the introduction of innovative methods and forms of education, professional adaptation and career growth, and contributed to the choice of educational strategies for students. However, the professional community of higher education has noted the ambivalence and problematic nature of many aspects of these

processes (Minina, 2020). Thus, it is necessary to cite a possibly controversial, but well-founded judgment: “Orientation toward the technological nature of education at the expense of content” contributes to the fact that “innovative computer technologies in education become synonymous with the quality of learning” (Kargapolov et al., 2020, p. 305). We think it is an exaggeration.

When choosing a university, students are guided by the opportunity to get free tuition (easy admission factor), the prestige of the university and the prospects of employment in their specialty. The dominant factor in building an educational strategy for students, regardless of their place of residence, is to ensure stable employment that guarantees a high level of welfare.

The effectiveness of educational process using online technologies is assessed by students depending on the level of success of mastering digital technologies by the students themselves and the teaching staff. While the unevenness and insufficiency of digital knowledge are interrelated with similar factors such as the formation of both hard skills and soft skills. The latter are more in demand among students from million-plus cities.

The most preferred form of educational process for students is a mixed learning format, which most closely corresponds to the motives for choosing the most common educational strategy that allows using educational resources outside the university.

Regional and territorial factors also remain significant. Guaranteed employment and demand in the labor market are more important in Irkutsk when building an educational strategy, while in Moscow and Yekaterinburg the importance of factors related to independence and achieving high welfare is significantly higher.

On the one hand, the information transformation caused by the development of digital technologies justifies the need for higher education to correspond to the innovative development of the

national economy in order to provide personnel. From this point of view, the state and employers, as customers of the “main product” of higher education, intellectual labor professionals, have the right to demand from all participants in the educational process active involvement in the “world of digital technologies” and the use of its unconditional real and potential advantages.

On the other hand, the dominance of information garbage in digital educational content, the abundance of multi-format software and methods of its use, which can trigger numerous digital deviations in the educational process, the need to resist the “Googlification” of professional knowledge, lead to the need to take into account important barriers created by the digital socio-cultural space. In order to keep up with the dynamically changing demands of society and the market, and successfully implement the “first mission”, universities must learn to overcome these barriers: individual, related to the attitude (motivation) of students and teachers toward using various ICT tools and platforms, organizational, financial and technological, coupled with the need for proper planning of such changes.

However, it is very difficult for universities to respond to the challenges of digitalization of the educational space of higher education independently, without active involvement of representatives of local communities and partner organizations. As a result, new research tasks are emerging related to the study of digital interaction in two directions. First, it is the interaction of the main educational communities – research and teaching staff, students and administrative staff. Second, it is the interaction of the university community with regional authorities, corporations, academic science, i.e. those who, with the help of their resources, are able to make it possible to transform students’ educational strategies into professional strategies.

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## Analysis of Students' Innovative Behavior Strategies



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**Abstract.** The relevance of the research is determined by the need to study the influence of subjective factors and socio-cultural characteristics of actors on the realization of their innovative potential in the current conditions of tightening sanctions policy in the field of high technologies by Western countries. The aim of the study was to find a connection between the types of professional strategies formed by university students and their innovative practices within the framework of university activity. Innovative

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activity and features of professional strategies are analyzed in a regional context – using the example of three large industrial centers – Yekaterinburg, Tyumen and Volgograd, as well as two metropolitan cities – Moscow and Saint Petersburg. To study the innovative behavior of students, the authors use an activity-based approach, considering innovative activity as a social quality of a subject, implying its internal readiness to master, use, disseminate and create innovations, and highlighting the levels of innovative activity – innovative receptivity and innovative readiness. The conclusions of the article are based on the results of an empirical sociological survey of students of 2–3 undergraduate courses of leading universities of the studied megacities (N=1050), the selection was carried out according to a quota-nest sample). According to the results obtained, a significant part of the regional students is not involved in any types of innovative practices. Students of megacities especially regional are characterized, first, by insufficient innovative activity at the basic level (participation in grant competitions, scientific conferences and seminars, research practices), and second, by a low degree of involvement in scientific and technological creativity and business design. Using the clustering procedure, a typology of students' professional strategies has been developed, five types of strategies have been identified: “professional employment”, “academic career”, “delayed self-determination”, “emigration and uncertainty” and “independent entrepreneurial”. Using correlation analysis methods, it was found that, first, the “academic career” strategy, which promotes active research and inventive practices, and, second, the “independent entrepreneurial” strategy, which correlates with the active implementation of innovative practices in business planning, development of creative and start-up projects, have the greatest innovative potential. “Emigration and uncertainty strategy” is less associated with active innovative activity and is characterized by the lack of formation of professional plans for the near future and intentions to seek work abroad. The “professional employment” strategy, which does not promote active innovative and creative practices, also has low potential. It is pointed out that the dissemination of latest strategies reduces the potential contribution of students to the innovative component of the Russian economy.

**Key words:** innovative activity, professional strategies, student youth, quantitative survey, cluster analysis.

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### Introduction

Attention to the innovative activity of various social groups, including youth, increased in 2010–2015, and the peak of interest of the scientific community in this topic occurred in 2015 and 2016. The growth of scientific interest is recorded by the number of scientific publications in authoritative Russian economic and sociological journals. Thus, an analysis of publications in the Russian Science Citation Index scientometric database shows that from 2010 to 2019 the number of scientific articles that somehow address the topic of innovation in

connection with socio-economic development amounted to more than 4,500 publications, or an average of about 460 publications per year<sup>1</sup>. However, further we observe a noticeable decline in interest in this topic (from 2020 to 2024 approximately 1,370 articles were published, i.e. only 274 on average per year), which we find

<sup>1</sup> The search for publications in the RSCI database was carried out using the key words “innovative activity”, taking into account morphology over five-year intervals: 2005–2009, ... up to 2024.

extremely unjustified, since in the context of the tightening of sanctions policy in the field of high technology against Russia by the European Union and the United States, it is especially important to unlock the potential for economic development by introducing and creating own innovations. Therefore, today it is necessary not only to study the institutional possibilities of innovative development of the economy of a country or regions (the state of innovation infrastructure and innovation institutions), which is mainly the focus of economic scientists (Gokhberg, 2011; Erokhina, Kuznetsova, 2015; Bizhoev, 2019; Glazyev, Kasakyan, 2024, etc.), but also to pay attention to subjective factors like the innovativeness of various social actors, which is more relevant to sociological science. Value-motivational barriers, features of social interaction and behavioral characteristics of business entities can slow down or impede the implementation of innovative intentions (Karacharovskiy, Shkaratan, 2019); however, with a properly structured social and economic policy they can be managed via corrective decisions. Such subjective factors include the choice and construction of professional strategies by the student youth, the most promising social group in terms of potential contribution to economic development (Vishnevskiy, Vishnevskiy, 2012).

In our study we tried to identify typical characteristics of students' professional strategies and correlate them with practices related to the implementation of innovative potential mainly within the framework of university activity.

Megacities and metropolitan-type cities with wide opportunities for realizing the innovative potential of young people, but differing in their socio-cultural status and socio-economic significance, were chosen as the research space. We analyzed professional strategies and innovativeness of students in the capital regions – Moscow and Saint Petersburg, as well as in large regional centers, using the example of Volgograd, Yekaterinburg and Tyumen students.

Moscow and Saint Petersburg are the most attractive clusters for the accumulation of promising and skilled human capital, primarily young people and students. This is largely due to the current uneven cultural and socio-economic development of Russian regions, including the inequality between the center and other regions, which is reflected in resource provision, infrastructure development, amount of investment, etc. (Nefedova et al., 2022). According to the scientific expertise of the Institute for Urban Economics, the contribution of the gross urban product (GUP) of the urban agglomerations of Moscow and Saint Petersburg to GDP significantly exceeds the contribution of the other 17 largest Russian agglomerations: the contribution of the Moscow agglomeration is 22.8%, the Saint Petersburg agglomeration – 7.6%, followed by the Yekaterinburg agglomeration – 1.9%, and the Volgograd agglomeration – 0.8%<sup>2</sup>, which ranks 16th.

Nevertheless, the regional centers we have selected for the study also have significant demographic and socio-cultural potential for innovative development. As megacities with a population of more than one million people (as of January 1, 2022, Yekaterinburg – 1,493.6 thousand people, Volgograd – 1,001.2 thousand people), or approaching a million in the case of Tyumen (as of January 1, 2022, 828.6 thousand people)<sup>3</sup>, they form large urban agglomerations, have their own scientific and industrial infrastructure<sup>4</sup> (Deev et al., 2022; Drozdova, 2023; Sushchaya, 2022, p. 118); that is, they can potentially act as points of

<sup>2</sup> The economy of Russian cities and urban agglomerations. Issue 8: Gross urban product of the largest urban agglomerations of Russia in 2013–2021. Moscow: Institute for Urban Economics Foundation, 2023. P. 8. Available at: <https://urbaneconomics.ru/research/project/ekonomika-rossiyskih-gorodov-i-gorodskih-aglomeracij> (accessed: July 27, 2024).

<sup>3</sup> Regions of Russia. Main socio-economic indicators of cities: Statistical collection. Moscow: Federal State Statistics Service (Rosstat), 2022.

<sup>4</sup> Monitoring of Yekaterinburg's industry. 2022. Yandex DataLens. Available at: <https://datalens.yandex/3nh40w51fcdos?tab=yLK>

attraction for educated and skilled youth as a space for their self-realization, professional and personal growth.

However, there are also significant differences between them, primarily in the socio-economic situation. Although Yekaterinburg and Tyumen, like Volgograd, experienced deindustrialization in the 1990s, associated with a reduction in the share of industrial production in GRP, including high-tech, in comparison with Volgograd they demonstrate a more successful strategy of socio-economic development by attracting financial flows to the region and developing the service sector (in the case of Yekaterinburg) and hosting business units and subsidiaries of oil producing and refining companies (in the case of Tyumen). This is clearly reflected in the main socio-economic indicators of recent years and in the materials of special research on the development of regions and urban agglomerations. In particular, according to Rosstat, in 2021, the average monthly nominal accrued wage of employees of organizations in Yekaterinburg amounted to 63,818.0 rubles, and in Volgograd it was significantly lower – 44,800.7 rubles, and Yekaterinburg is characterized by a significantly higher volume of investments in fixed assets (from 177,624.2 million rubles in 2019 to 174,942.8 in 2021) in comparison with Volgograd (from 67,106.1 to 70,732.6 million rubles for the same period)<sup>5</sup>. In addition, based on the results of a study by N.V. Tonkikh, A.V. Verbenskaya and T.A. Komarova, we can note that Yekaterinburg ranks third after Saint Petersburg and Kazan in the ranking of million-plus cities by urban development in terms of attractiveness for young families with children, while Volgograd ranks 14th out of 15 megacities (Tonkikh et al., 2023). Tyumen is significantly inferior in population to both Yekaterinburg and Volgograd; however, by focusing strategic

development priorities on the IT cluster, oil refining and petrochemicals (Deev et al., 2022), it surpasses them according to a number of socio-economic indicators, in particular in terms of the average monthly nominal accrued wage of employees of organizations (in 2021 in Tyumen it amounted to 71,705.6 rubles); in terms of investments in fixed assets Tyumen lags behind Yekaterinburg, but is significantly ahead of Volgograd (from 68,998.8 million rubles in 2019 to 94,379.3 million rubles in 2021)<sup>6</sup>. According to a study by A.S. Deev, N.V. Krasovskaya and S.I. Chernomorchenko, the advantages of Tyumen that enhance its potential attractiveness to young people include a high level of urban improvement and infrastructure development: for a number of years Tyumen has ranked third in the framework of the All-Russian competition “The best well-maintained city in Russia” (Deev et al., 2022).

Thus, the context of youth's formation of professional development strategies and the objective conditions for unlocking their innovative potential in the megacities under consideration can be determined both by similar socio-cultural characteristics in the development of metropolitan cities and million-plus cities, and by the specifics of their current socio-economic development.

#### **Research methodology and methods**

The theoretical and methodological framework of the study is determined by the interpretation of two concepts, which, from our point of view, are interrelated: innovative activity of young people and their professional strategies. Before analyzing this relationship at the theoretical and empirical levels, let us focus on what innovative activity means, in what forms it can exist, and what characteristics available to the sociological dimension it includes.

Mostly, “innovation” is interpreted as a complex process of commercialization of novelties, which is

<sup>5</sup> Regions of Russia. Main socio-economic indicators of cities: Statistical collection. Moscow: Federal State Statistics Service (Rosstat), 2022.

<sup>6</sup> Regions of Russia. Main socio-economic indicators of cities: Statistical collection. Moscow: Federal State Statistics Service (Rosstat), 2022. Pp. 336–337.

initiated by the presence of a problematic situation and ultimately contributes to economic growth (Singh, Aggarwal, 2021). However, economic growth in modern society is determined by the quality of human resources, which correlates with such properties as creativity, intelligence, cognitive and learning abilities, i.e., in fact, the innovative characteristics of specific social groups with the greatest potential are emphasized. This determined our research position regarding the interpretation of students' innovative activity as an activity associated with a wide range of intellectual, creative and entrepreneurial practices.

The generalization of research concepts that have now emerged in the scientific literature has allowed us to identify two main approaches on the basis of which it is possible to study innovative activity: the institutional approach, practiced to a greater extent by economic scientists, and the activity-based approach, put forward within the framework of sociological science.

From the standpoint of the economic (institutional) approach, innovative activity is studied as an integral indicator characterizing the degree of economic development of a country, region, industry or organization, and is analyzed mainly within the framework of the "triple helix" concept (Klyucharev, Chursina, 2021; Strand et al., 2017; Etkowitz et al., 2023).

The sociological (activity-based) approach implies that the focus of research is the innovative activity of individuals, social groups, or society as a whole as a specific type of social activity. Adhering to the sociological approach, we will consider innovative activity as a social quality of a subject (actor of socio-economic processes), in this case, student youth, implying their internal readiness to master, use, disseminate and create innovations.

Considering innovative activity as a social property of the subject of activity, we identify several levels in its structure. We have identified their specific components based on established theories of

innovation and creativity, as well as using the results of a number of empirical studies on innovative behavior.

First, at the basic level, young people develop innovative openness (or innovative receptivity) – the ability of agents to realize the importance and necessity of innovations, the need to receive information about innovations and the ability to integrate them into their daily and professional lives (Bannikova, Ermakov, 2020). Sociologists and economists, since the times of human capital theorists, have pointed out the key role of education and training in this process (Mincer, 1958; Becker, 1964). According to the research of Russian sociologists I.G. Dezhina and G.A. Klyucharev, lifelong additional education is especially important for an innovative economy (Dezhina, Klyucharev, 2018). In relation to the objectives of our research, this means that the innovative openness of young people determines their ability to improve professionally and raise their educational and skill levels.

Research shows the positive impact of youth research activity on the development of knowledge-intensive production, as it contributes to the development of competencies necessary for an innovative economy. In particular, students' grant and publication activity, participation in research and scientific events have a positive impact on the innovative qualities of young people, as they form the intellectual ability to comprehend reality (Stromov, Sysoev, 2017; Vasilyeva, 2019).

Second, a higher level of innovative activity – innovation readiness – is determined by young people's degree of creativity and their willingness to realize their creative potential. R. Florida and C. Landry (Florida, 2002; Landry, 2000) drew attention to the increasing role of creative strata and groups in modern innovative society. Russian scientists also point out the existence of a link between innovative behavior and creativity (Buzgalin, 2017; Lugin, Didkovskaya, 2022). The creative potential of young people can be realized in

various practices, including in project activities. In this regard, two more forms of innovative activity can be distinguished – participation in youth creative and startup projects and youth entrepreneurship. A number of authors point out that scientific and technological startups promote the innovative sector of the economy and represent generators of ideas and creative developments (Lobareva et al., 2018; Milyuchikhina, 2020), other scientists associate the innovative activity of young people with participation in entrepreneurial projects. At the same time, there are two points of view on this issue. According to the first one, innovative activity should primarily include only participation of young entrepreneurs in small businesses and exclusively in scientific and technological startups, which, unlike large businesses, can significantly shorten the path from a creative idea to a ready-to-implement innovative solution (Frolova, 2015). We are more in solidarity with the second point of view: young people who offer their business ideas and, in principle, participate in entrepreneurship, are already demonstrating a creative approach; accordingly, the willingness of young people to get involved in entrepreneurship and implement their business ideas can well be attributed to creative innovation practice.

Following I.E. Belogortseva and colleagues, in the framework of students' scientific research creativity, we emphasize inventive activity, which characterizes the level of effectiveness of creative intellectual activity in the field of engineering and technology and can be measured, for example, through patent activity (Belogortseva et al., 2015).

Thus, we relied on the following methodological provisions:

- youth's innovative activity is a sought-after social activity aimed at creating, mastering and using innovations and based on the innovative openness and creativity of young people;

- at the basic level, innovative activity is implemented in practices related to ensuring innovative openness or receptivity, and is

characterized by the ability of young people to improve their skills, practices of participation in scientific research, scientific conferences and seminars, and student grant activity;

- at a higher level, students' innovative activity is associated with creativity and generation of their own ideas, involves various types of project activities (primarily participation in creative projects), and implementation of inventive and entrepreneurial practices.

We believe that successful implementation of innovative practices, primarily within the framework of university student activity (it is in this area that we consider the range of possible manifestations of youth innovation) depends on institutional factors like a favorable innovation environment (in the university, city, region, society as a whole). But no less important are subjective motivating factors, which to a certain extent reflect the quality of the human resource of innovation. In this case, we are referring to the immediate subject of our research – young people's ability to design their professional future, i.e. build professional strategies that can act as a kind of motivational mechanism that promotes/hinders the implementation of innovation-related intentions of the younger generation.

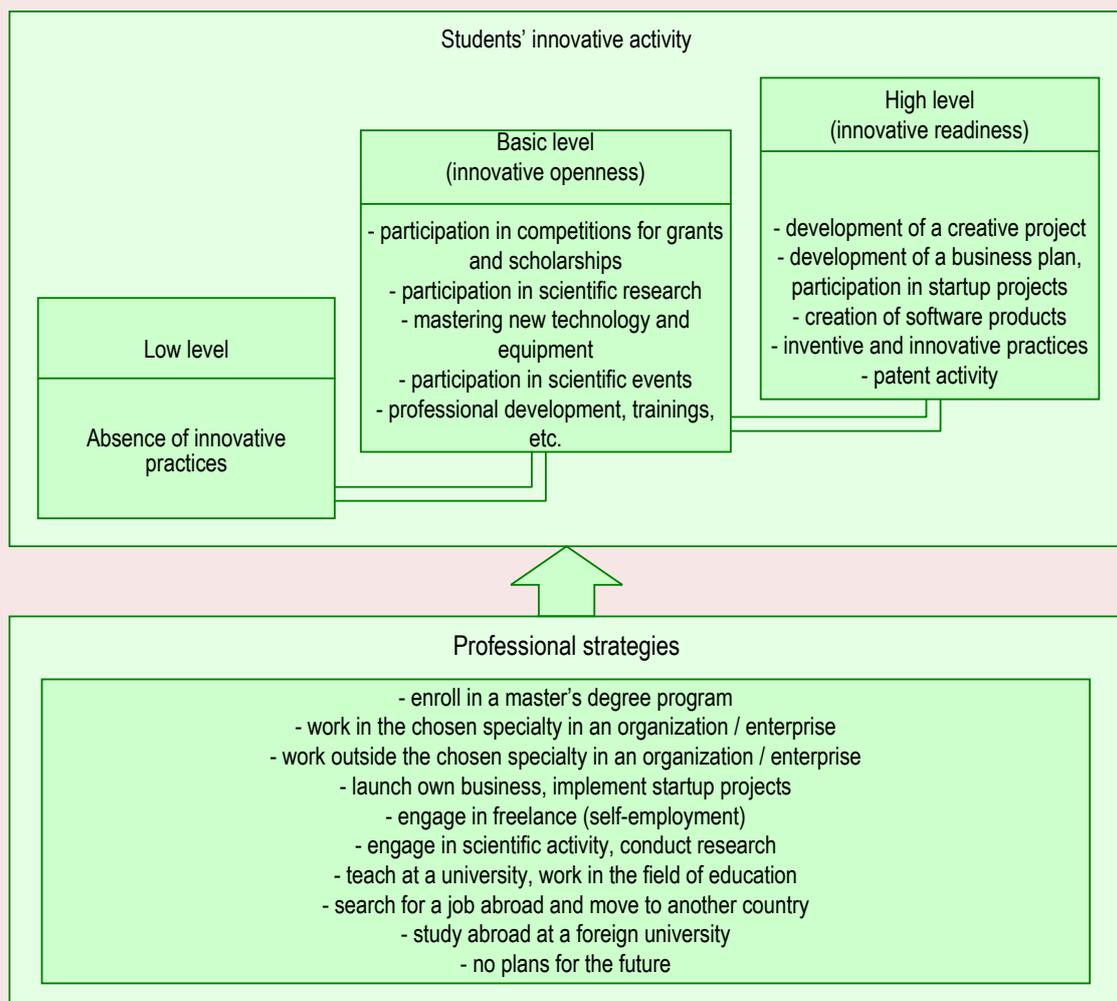
Sociological science has developed a fairly stable understanding of professional strategies as a variety of life strategies covering the sphere of work, professions and education, reflecting the subjectivity of youth in designing their own individual socio-professional and educational trajectories. In other words, professional strategies are life strategies, considered through the prism of human labor and employment (Omelchenko, 2023). According to the classics of Russian personality sociology, the most important characteristics of individuals' strategic behavior are the processes of goal setting and planning (Abulkhanova-Slavskaya, 1991; Reznik, Smirnov, 2000). The formation of strategies (professional, personal, and life strategies) ensures self-regulation of young people's lives: strategies determine ways of constructing life based on

culturally determined life-meaning guidelines (Zubok, Chuprov, 2020).

We should note that the concept of “professional strategies” is far from being similar to the concepts of “Life Course” and “Life Transition” used in Western studies on the professional, educational and life trajectories of the younger generation (Clausen, 1993; Evans, Furlong, 1997; Bovenberg, 2008; Buhl et al., 2018; Barretta, Barbee, 2022; Mortimer, 2022). Considering the strategic aspect in young people’s professional behavior, we focus not on the actual movement and promotion of young people in the sphere of social and professional positions, but

on their orientations regarding desired or possible statuses and roles aimed at the near or distant future. From this point of view, we consider an individual’s professional strategy as a subjective planning of future work life events, which can be adjusted as it is implemented. Accordingly, we have operationalized professional strategies by measuring the availability of more or less formed professional and educational plans of young people for the near future and their content orientation. The conceptual approach to correlating students’ innovative activity and their professional strategies, as well as operationalization of research concepts are shown in *Figure 1*.

Figure 1. Research concept and the operationalization of definitions



Source: own compilation.

A quantitative survey of second- and third-year undergraduate students was used as a method of collecting empirical data. Students of the largest and most significant universities: Lomonosov Moscow State University, Moscow Institute of Physics and Technology, National Research University Higher School of Economics in Saint Petersburg, St. Petersburg University, Saint Petersburg Electrotechnical University "LETI", Volgograd State University and Volgograd State Technical University, Ural Federal University named after B.N. Yeltsin, University of Tyumen, Industrial University of Tyumen, located in the megacities that made up the research space participated in the survey.

To select the respondents, a quota sample with nest elements was used ( $N = 1,050$ ), the quota features were the place of study and residence of the respondents (city), as well as the field of study at the university (STEM fields and social sciences/humanities), student groups of the relevant fields

of study were considered as nests, in which a continuous survey was conducted.

The data was processed using Vortex 10.30 software. The students' professional strategies were typologized using the K-means cluster analysis. Binary variables measuring the availability and orientation of students' professional and educational plans are taken as typologizing features. Further, the obtained clusters were fixed as a secondary variable, a search was made for the relationship of variables that capture innovative student practices with types of strategies using correlation analysis procedures, and Cramer's correlation coefficient was used as the most optimal for nominal scales.

## Results

### *Students' innovative activity*

According to the results obtained, certain types of innovative practices are typical for the majority of students (about 80%), the highest level of participation in innovative practices was recorded among students of Saint Petersburg (90%), the

Table 1. Students' innovative activity, % of responses\*

Types of activities that students engaged in over the past year	City					
	Moscow	Saint Petersburg	Yekaterinburg	Volgograd	Tyumen	Array on the whole
Innovative readiness (high level)						
Participated in the development of a creative project	39	44	53	28	50	40
Created or improved devices, technical tools for personal consumption (for own use, for family, friends)	20	20	12	17	16	16
Created software products	28	36	15	9	20	19
Developed a business plan and offered it to the bank, investors, etc.	7	10	12	11	11	11
Registered patents for inventions	1	5	3	2	0	2
Innovative openness (basic level)						
Mastered new technology, new equipment	43	49	28	27	34	34
Took advanced training courses, trainings, etc.	28	40	29	27	43	31
Made presentations at scientific conferences or seminars	38	28	23	27	34	30
Participated in scientific research	43	44	27	18	42	32
Participated in competitions for grants, scholarships	29	30	13	8	15	17
Lack of activity (low level)						
None of the above	15	10	20	30	15	20
* Respondents could mark several responses. Source: survey results.						

lowest among students of Volgograd (70%). Nevertheless, on average, 20% of university students are not involved in any activities related to the realization of their innovative potential (*Tab. 1*).

In general, the basic-level innovative activity (innovative openness/receptivity) is more common among students than the activity related to creative attitudes, especially a small number of students practice invention, technological innovation, and create software products. These results confirm the earlier data obtained by I.E. Belogortseva, N.V. Posokhova and M.E. Merezko, who recorded an extremely low degree of inventive activity among regional students; while according to the scientists, it is difficult for students to enter the inventive field of activity, because they need knowledge not only in the field of their scientific activities, but also in law and economics (Belogortseva et al., 2015, p. 51).

In addition, students are very little involved in business practices. However, if patent registration, programming, and business planning are quite specific types of activities and are often associated with the specifics of students' professional training in their chosen fields (it is clear that one should not expect that a humanities student would create a software product, and this partly explains the low prevalence of these types of practices), then participation in research work, presentations at scientific events, participation in scholarship and grant competitions is not determined by the student's training profile and should form an important part of the university training for a modern specialist for the purposes of an innovative and competitive economy. Nevertheless, it follows from the survey data that these types of practices also cover a smaller proportion of students – no more than a third, and in the case of grant activity – only 17%. Moreover, a particularly low level of participation in grants is typical for students of regional universities: only 15% of students participate in grant competitions in Tyumen, 13% in Yekaterinburg, and 8% in Volgograd.

A comparison of the results by city shows that the situation with the realization of students' innovative potential at both the basic and higher levels is more favorable in metropolitan universities (Moscow and Saint Petersburg) than in regional ones; the extent of student participation in Volgograd is especially low (significant differences are highlighted in color in Table 1). First of all, the differences are typical for research practices, the practice of mastering new technologies and equipment, and the creation of software products. However, students from Yekaterinburg and Tyumen significantly outperform both Moscow and Saint Petersburg students in terms of participation in the development of creative projects. Apparently, active implementation of project-based learning at Ural Federal University<sup>7</sup> and Tyumen universities in recent years has produced some results. Perhaps there is a positive trend here in general: for example, according to the research by O.A. Milyuchikhina, in 2020 more than 90% of students had no project experience, and the focus on employment in startup projects was less than 20% (Milyuchikhina, 2020, p. 288).

#### *Typology of professional strategies*

In order to be able to compare innovative practices of young people within the framework of university activity with the projective attitudes toward the professional future, we initially typologized professional strategies of students. As a result of the clustering, five types of professional strategies were formed (the values of the final centers of the clusters are shown in Table 2, the most significant differences are highlighted in color).

<sup>7</sup> UrFU Regulations on project-based training (Order 335/03, dated April 15, 2021). Available at: [https://gsem.urfu.ru/fileadmin/user\\_upload/site\\_15921/students/shgup/bachelor/project\\_learning/2021-2022/Polozhenija\\_o\\_proektnom\\_obuchenii\\_2021.pdf](https://gsem.urfu.ru/fileadmin/user_upload/site_15921/students/shgup/bachelor/project_learning/2021-2022/Polozhenija_o_proektnom_obuchenii_2021.pdf) (accessed: August 15, 2024).

Table 2. Final cluster centers in the typologization of students' professional strategies

Final cluster centers	Cluster 1 Professional employment strategy	Cluster 2 Deferred self-deter- mination strategy	Cluster 3 Academic career strategy	Cluster 4 Independent entrepreneurial strategy	Cluster 5 Strategy of emigration and uncer- tainty
Set up my own business, implement a startup	0.000	1.000	0.414	0.067	0.306
Engage in freelancing (become self-employed)	0.000	0.220	0.157	0.704	0.141
Work in an organization/ enterprise in the chosen specialty	0.000	0.144	0.086	0.654	0.224
No plans for the future.	1.000	0.682	0.100	0.626	0.000
Engage in science, conduct research	0.012	0.016	0.014	0.006	0.318
Teach at the university, work in the field of education	0.198	0.249	0.657	0.061	0.106
Look for a job abroad, go to live and work in another country	0.058	0.033	0.957	0.039	0.082
Work outside my specialty in an organization / enterprise	0.291	0.039	0.029	0.173	0.635
Set up my own business, implement a startup	0.186	0.115	0.171	0.173	0.212
Go to study abroad at a foreign university	0.151	0.092	0.171	0.034	0.188
Cluster volume	124	439	101	257	122

Source: own compilation.

Cluster 1. “*Professional employment strategy*” (124 respondents) implies a strict orientation of students toward working in their specialty in any organization or enterprise: all respondents who fall into this cluster plan to work in their specialty, while none of the respondents in this cluster plans to enroll in a master’s degree program after getting their bachelor’s degree; they also do not plan to launch their own business or startup, or become self-employed. This linear strategy is quite common among students from all the cities under consideration, but somewhat more common among students from Saint Petersburg, Volgograd, and Tyumen (Fig. 2). In our opinion, it reflects the acceptance of very common ideas about a possible successful life after graduating from the university (Didkovskaya et al., 2023; Kisilenko, Shapovalova, 2023) and means embedding young people in the familiar socio-economic employee – employer relationship.

Cluster 2. “*Flexible deferred self-determination strategy*” (439 respondents) is distinguished by the fact that students who adhere to it are not always

ready to work in an organization or enterprise after graduation, but plan to enroll in a master’s degree program (all respondents from this cluster). It is obvious that their professional self-determination is far from the completion stage, and this strategy is more flexible (non-linear) in comparison with the previous one. The respondents in this cluster have a wider range of professional plans, and in addition to continuing their education, their orientations include a possible job in an organization, and they do not exclude a research trajectory or setting up their own business. This is the largest cluster; it is almost equally represented in all cities and, one might say, represents the “mainstream” professional trajectories of students.

Cluster 3. “*Academic career strategy*” (101 respondents) is less common in the surveyed population than the rest. It is characterized by two main orientations in designing a professional trajectory: to engage in science, conduct research and/or teach at a university, and work in the field of education. We should note that in the whole array, traditionally for the last decades, there are quite a

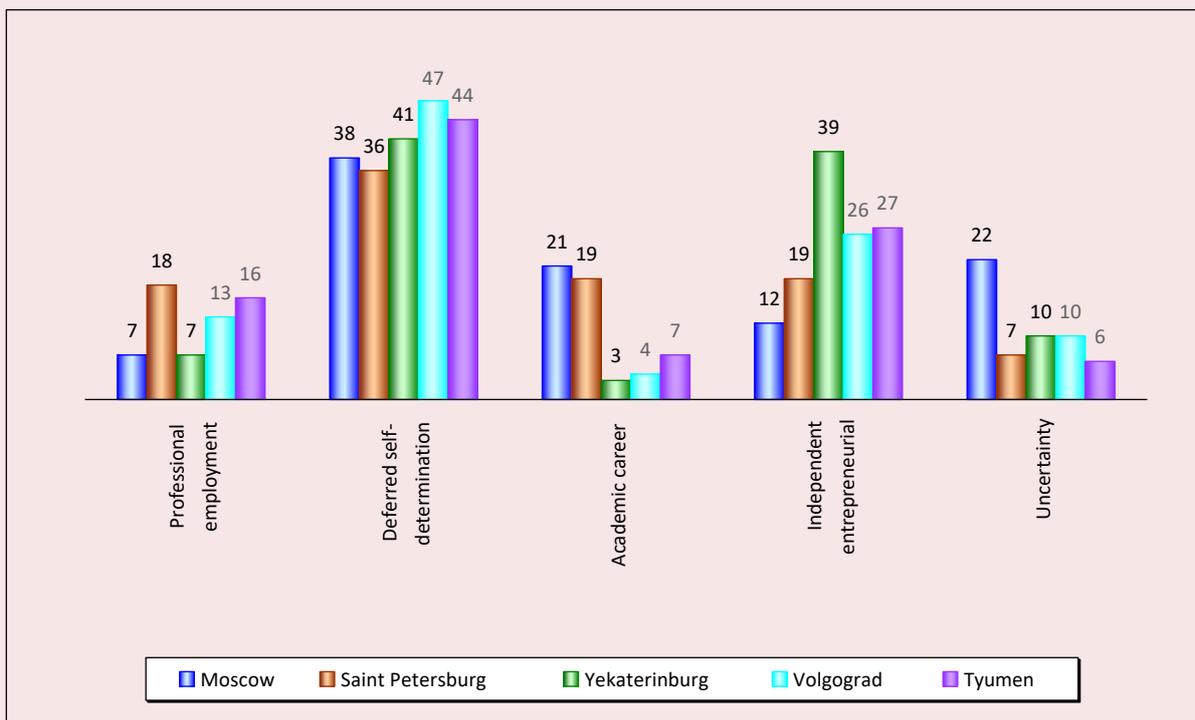
few students who plan to pursue science or teaching in the future, but of those who plan, the majority fall into this cluster. The prevalence of this strategy has a pronounced regional specifics – it is more typical for students of metropolitan universities than regional ones (see Fig. 2). It is obvious that Moscow and Saint Petersburg, having a more serious educational and research infrastructure, initially attract young people with higher academic performance and research potential.

Cluster 4. *“Independent entrepreneurial strategy”* (257 respondents). The respondents who adhere to this strategy have the most well-formed system of professional plans: there are practically no students in this cluster who have no plans for the future. The *“independent entrepreneurial strategy”*

combines several attitudes that are generally not very widespread among the entire population of respondents. First, the attitude toward freedom from organizational frameworks and an independent source of income – the respondents focus on freelancing and implementation of their own business projects; second, it has a practical orientation – the respondents express practically no desire to continue formal education and engage in scientific activities. This strategy is more widespread among students in Yekaterinburg than in the whole range, and is least represented in Moscow (see Fig. 2).

Cluster 5. *“Strategy of emigration and uncertainty”* (122 respondents) is characterized by vagueness or lack of professional plans for the

Figure 2. Prevalence of professional strategies among students of the megacities under consideration, % of respondents



(Cramer's V coefficient [0.1]: 0.186, Probability of error (significance): 0.000)

Source: own compilation.

future. This cluster mainly includes respondents who have not formed any plans: neither going into business or freelancing, nor continuing their education make up their projective attitudes. Moreover, this is the only cluster where professional plans completely lack a focus on work in their specialty. Its other characteristic feature is the respondents' desire to move abroad so as to live and work there. This strategy is much more widespread among Moscow students in comparison with universities in other cities (see Fig. 2).

#### Innovative potential of professional strategies

The results of the correlation analysis demonstrate the existence of a certain relationship between the types of professional strategies and innovative practices of students (Tab. 3).

It is obvious that the “strategy of emigration and uncertainty” has a low innovative potential and, in general, does not contribute to the manifestation of

innovative activity. Students who adhere to this strategy are significantly less likely than students from other clusters to participate in the development of creative projects, as well as business plans and startups. On the contrary, the proportion of respondents who answered that they do not engage in any innovation-related activities at all is higher (31%, while the average for the array is only 21%). Similarly, students who adhere to the “professional employment strategy” have a low level of innovative activity: among them, there are few practices related to business planning and professional development, as well as courses and trainings, compared with other types of strategies, and a significant part of the respondents in this group do not engage in any activities related to innovation (29%).

The “academic career strategy” and “independent entrepreneurial strategy”, on the contrary, assume a fairly high level of innovative activity,

Table 3. Innovative potential of students' professional strategies, % of responses

Types of activities that students engaged in over the past year	Professional strategies					
	Professional employment strategy	Deferred self-determination strategy	Academic career strategy	Independent entrepreneurial strategy	Strategy of emigration and uncertainty	Array on the whole
Innovative readiness (high level)						
Participated in the development of a creative project	36	39	39	45	35	40
Created or improved devices, technical tools for personal consumption (for own use, for family, friends)	17	16	26	14	12	16
Created software products	21	17	24	13	26	18
Developed a business plan and offered it to the bank, investors, etc.	5	11	10	15	4	10
Registered patents for inventions	1	2	7	1	1	2
Innovative openness (basic level)						
Took advanced training courses, trainings, etc.	15	32	37	33	29	30
Mastered new technology, new equipment	30	34	41	27	35	33
Made reports at scientific conferences or seminars	20	33	54	22	26	30
Participated in scientific research	26	31	67	23	25	31
Participated in competitions for grants, scholarships	14	17	39	10	20	17
Lack of activity (low level)						
None of the above	29	19	9	20	31	21
* Cramer's V coefficient [0..1]: 0.151, Probability of error (significance): 0.000. Source: survey results.						

but somewhat different in nature. The “independent entrepreneurial” strategy is associated with the implementation of practices of the creative spectrum, it distinguishes students with a well-formed innovative willingness – they participate more than others in the development of creative and business projects. The “academic career strategy” promotes the implementation of innovative potential in the field of scientific research and technological developments, demonstrating at a relatively high level both innovative openness (innovative receptivity) – students participate in research, make scientific reports at conferences, master new technologies and equipment, and innovative readiness – students create or improve devices and tools, create software products.

The “deferred self-determination strategy” occupies a middle position between the other types of strategies: it certainly does not promote innovative activity to the same extent as the previous two, but among the students who adhere to it, there is a fairly high proportion of those who implement basic-level innovative practices: mastering new equipment and technologies, delivering reports at scientific events, participating in scientific research.

### **Conclusion**

Summarizing the theoretical and empirical results obtained, we can point out the following.

The analysis of students’ innovative activity from the standpoint of an activity-based approach made it possible to structure the phenomenon of youth innovative behavior, identifying two inter-related levels in it: first, innovative receptivity, which allows students to successfully and effectively master and use ready-made innovative solutions, and second, innovative readiness based on it, related to the ability of young people to develop creativity and implement their own ideas and projects. Optimal innovative development requires expanding opportunities for young people to implement innovative practices at both levels.

The current analysis has shown that a significant proportion (from 10 to 30%) of students at leading universities in the cities under consideration are not involved in any types of innovative activities. The situation in Moscow and Saint Petersburg universities and partly in Tyumen is somewhat more favorable than in regional universities in general and especially in Volgograd; however, the following general trend is typical for students of the megacities under consideration: insufficient prevalence of basic-level innovative practices (participation in grant competitions, scientific conferences and seminars, research activity) and a low degree of involvement in scientific and technological creativity (innovation and inventive activity), programming and development of business projects.

The professional strategies formed by students during their studies at the university are a significant factor for the innovative activity among regional students. It has been found that specific strategies can contribute to or hinder students’ realization of their innovative potential within the framework of university activity. Having discovered typical characteristics of students’ professional strategies, we linked each selected type of strategy to a specific range of innovative practices.

The “academic career strategy” has significant innovative potential, involving a focus on research and teaching at the university, contributing to the implementation of various innovative practices from participation in research projects and grants, to inventing and creating software products.

A sufficiently high innovative potential is demonstrated by the “independent entrepreneurial strategy”, which aims to go beyond the “organizational framework” of professional self-realization and is focused on finding an independent source of income (entrepreneurship, freelancing, startup). It promotes the active implementation of innovative business planning practices, the development of creative and startup projects.

To a certain extent, the “deferred self-determination strategy” seems promising for the development of innovative potential, implying flexible orientations of young people toward continuing their education, a wide range of options for professional plans, and associated with such types of innovative activity as conducting scientific research, business planning, and creating software products.

The remaining strategies – the “professional employment strategy” and the “strategy of emigration and uncertainty” – are adaptive rather than innovative and are less associated with students' active innovative activity. Although they are not widely practiced by students, they can nevertheless pose a certain problem, since it will be more difficult for these groups of students to integrate into the modern economic process and meet the demand for specialists in the new “knowledge economy”. In addition, the dissemination of these strategies reduces the potential contribution of students to the innovative component of the Russian economy.

The analysis of students' innovative behavior strategies allows us to formulate some practical recommendations on targeted impact on them. First of all, it is necessary to comprehensively develop the innovative potential of the student youth in the regions, providing opportunities for the implementation of innovative practices both at

the level of receptivity (the introduction of ready-made solutions), and at the level of creativity and the development of their own projects. This will optimize students' innovative development and their contribution to the innovative urban economy. Second, special attention should be paid to increasing student engagement in a wide range of innovative practices, from participation in scientific conferences and competitions to the development of start-ups and business projects. Third, it is necessary to create conditions for students to develop professional strategies that are most favorable in terms of innovation, such as “independent entrepreneurial strategy” and “academic career strategy”. Their support will make it possible to maximize the innovative potential of students. Fourth, targeted solutions are needed for students who adhere to strategies with weak innovation potential, in particular, strategies of “emigration and uncertainty” and “professional employment”. It is necessary to provide such students with assistance in professional orientation and the development of their innovative readiness. Intensifying measures in the framework of these areas will have a positive impact on the comprehensive development of students' innovative potential, increasing the involvement of young people in various types of innovative activities, as well as stimulating the most productive professional innovative strategies.

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# MONITORING OF PUBLIC OPINION

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## Public Opinion Monitoring of the State of the Russian Society

As in the previous issues, we publish the results of the monitoring of public opinion concerning the state of the Russian society. The monitoring is conducted by VoIRC RAS in the Vologda Region<sup>1</sup>.

The following tables and graphs show the dynamics of several parameters of social well-being and socio-political sentiment of the region's population according to the results of the latest round of the monitoring (December 2024) and for the period from December 2023 to December 2024 (the last seven surveys, that is, almost a year).

We compare the results of the surveys with the average annual data for 2000 (the first year of Vladimir Putin's first presidential term), 2007 (the last year of Vladimir Putin's second presidential term, when the assessment of the President's work was the highest), 2011 (the last year of Dmitry Medvedev's presidency), and 2012 (the first year of Vladimir Putin's third presidential term).

We also present the annual dynamics of the data for 2020–2024<sup>2</sup>.

In December 2024 the President's approval rating remained at the level of October 2024 and amounted to 67%; the proportion of negative assessments was 19%<sup>3</sup>.

Over the past 12 months (from December 2023 to December 2024) the President's approval rating increased from 62 to 67% (by 5 percentage points); in general, in 2024, compared with the average annual data of 2023, there was also an increase in support for the work of the head of state (by 6 percentage points, from 61 to 67%).

<sup>1</sup> The surveys are held six times a year in the cities of Vologda and Cherepovets, in Babayevsky, Velikoustyugsky, Vozhegodsky, Gryazovetsky, Tarnogsky Kirillovsky, Nikolsky municipal okrugs, and in Sheksninsky Municipal District. The method of the survey is a questionnaire poll by place of residence of respondents. The volume of a sample population is 1,500 people 18 years of age and older. The sample is purposeful and quoted. The representativeness of the sample is ensured by the observance of the proportions between the urban and rural population, the proportions between the inhabitants of settlements of various types (rural communities, small and medium-sized cities), age and sex structure of the Region's adult population. Sampling error does not exceed 3%.

More information on the results of VoIRC RAS surveys is available at <http://www.vscs.ac.ru/>.

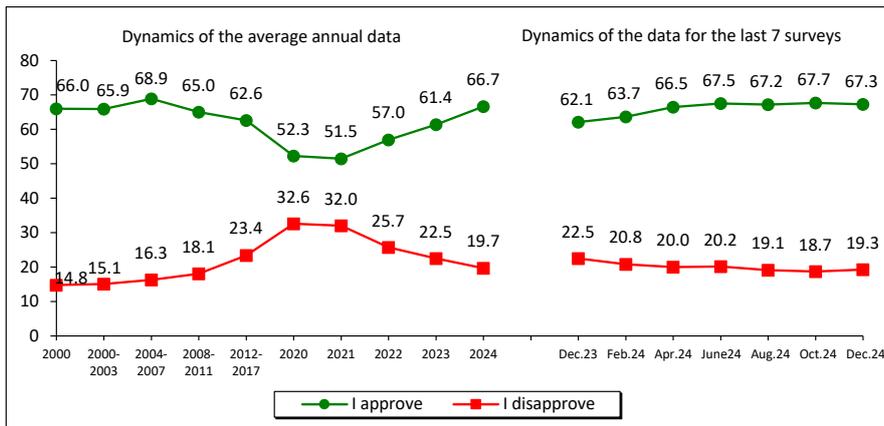
<sup>2</sup> In 2020, four rounds of the monitoring were conducted. Surveys in April and June 2020 were not conducted due to quarantine restrictions during the spread of COVID-19.

<sup>3</sup> Here and elsewhere, in all tables and in the text, positive changes are highlighted in green, negative changes are highlighted in red, and no changes – in blue. Due to the fact that the changes of +/- 3 p.p. fall within the limits of sampling error, they are considered insignificant and are marked in blue.

How would you assess the current work of...? (% of respondents)

Response	Dynamics of the average annual data										Dynamics of the data for the last 7 surveys							Dynamics (+/-), Dec. 2024 to	
	2000	2007	2011	2012	2020	2021	2022	2023	2024	Dec. 2023	Feb. 2024	Apr. 2024	June 2024	Aug. 2024	Oct. 2024	Dec. 2024	Dec. 2023	Oct. 2024	
<b>RF President</b>																			
I approve	66.0	75.3	58.7	51.7	52.3	51.5	57.0	61.4	66.7	62.1	63.7	66.5	67.5	67.2	67.7	67.3	+5	0	
I disapprove	14.8	11.5	25.5	32.6	32.6	32.0	25.7	22.5	19.7	22.5	20.8	20.0	20.2	19.1	18.7	19.3	-3	+1	
<b>Chairman of the RF Government</b>																			
I approve	-	-	59.3	49.6	38.7	39.9	45.4	50.1	54.1	51.9	52.7	53.7	53.5	55.3	53.7	55.6	+4	+2	
I disapprove	-	-	24.7	33.3	40.4	37.6	32.0	27.6	24.8	27.9	26.2	24.3	23.4	24.1	25.5	25.3	-3	0	
<b>Governor</b>																			
I approve	56.1	55.8	45.7	41.9	35.0	36.7	40.9	48.1	51.7	49.1	50.8	51.7	51.6	53.4	51.9	50.8	+2	-1	
I disapprove	19.3	22.2	30.5	33.3	42.5	40.5	35.8	30.9	28.4	29.9	27.5	30.1	28.0	26.7	28.0	29.8	0	+2	
Wording of the question: "How would you assess the current work of ...?"																			

How would you assess the way that the RF President is handling his job? (% of respondents, VolRC RAS data)\*



Dynamics (+/-), Dec. 2024 to		
Response	Dec. 2023	Oct. 2024
I approve	+5	0
I disapprove	-3	+1

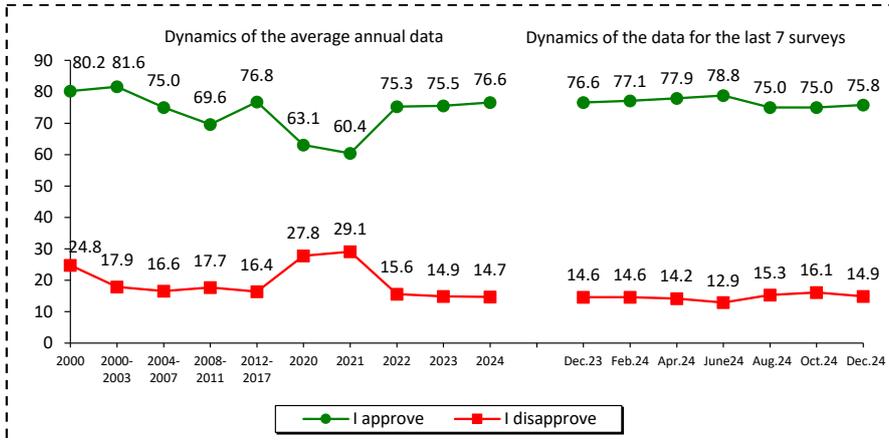
\* Here and elsewhere, all graphs show the average annual data for 2000, 2020, 2021, 2022, 2023, 2024, as well as the average annual data for the periods 2000–2003, 2004–2007, 2008–2011, 2012–2017 that correspond to presidential terms.

**For reference:**

According to VCIOM, the President's approval rating in October – first half of December 2024 was 75–76%, the proportion of negative assessments was 15–16%.

The President's approval rating in December 2024 remained the same as in October 2024 (75–76%), while on average in 2024, Russians' support for the work of the head of state remained at a high level and is comparable to the average annual data for 2023.

Do you approve or disapprove of the way that the RF President is handling his job?  
(% of respondents; VCIOM data)



Response	Dec. 2023	Oct. 2024
I approve	-1	+1
I disapprove	0	-1

Wording of the question: "In general, do you approve or disapprove of the way that the Russian President is handling his job?"  
Data as of December 2024 reflect an average for three surveys: as of December 1, 2024, December 8, 2024 and December 15, 2024.

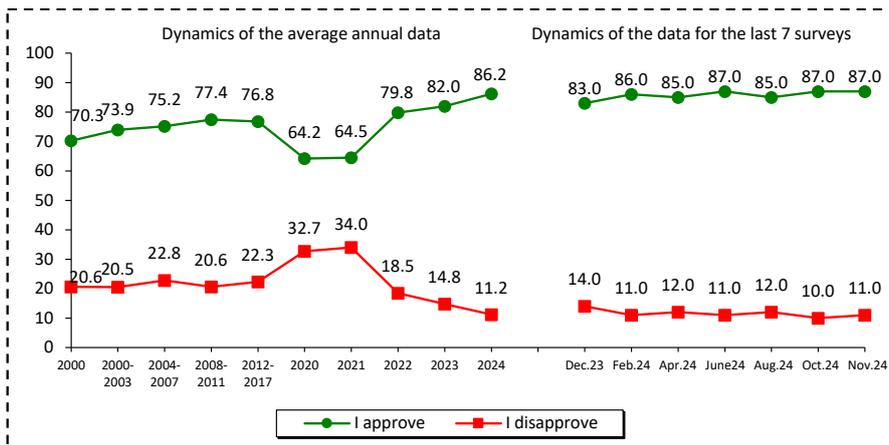
Source: VCIOM. Available at: <https://wciom.ru/>

According to Levada-Center\*, the share of positive assessments of the President's work in October – November 2024 amounted to 87%; the proportion of negative judgments was 10–11%. The estimates have not changed in the last two months.

However, from December 2023 to November 2024, the proportion of positive opinions about the RF President's work increased by 4 percentage points, from 83 to 87%.

According to the annual average, approval rating of the head of state has increased from 82% in 2023 to 86% in 2024 (by 4 percentage points).

In general, do you approve or disapprove of the way that Vladimir Putin is handling his job as President of Russia? (% of respondents; Levada-Center\* data)



Response	Dec. 2023	Oct. 2024
I approve	+4	0
I disapprove	-3	+1

Source: Levada-Center\*. Available at: <https://www.levada.ru/>

Wording of the question: "In general, do you approve or disapprove of the way that Vladimir Putin is handling his job as President of Russia?"

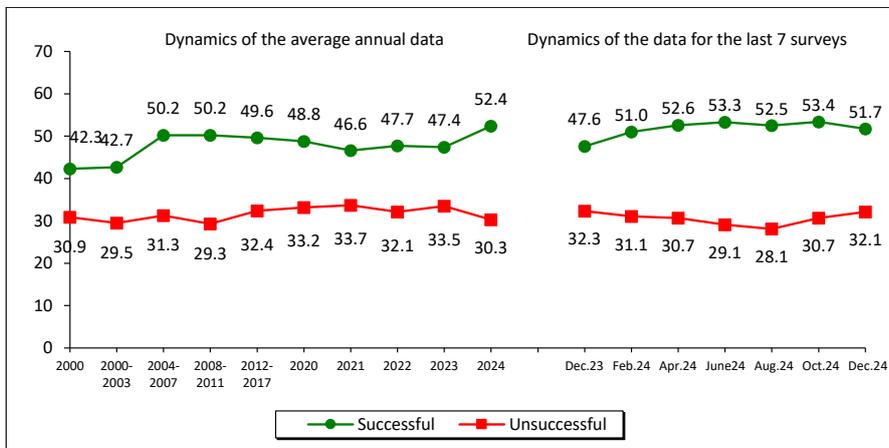
\* Included in the register of foreign agents.

In October – December 2024 the share of those who consider the President’s actions to strengthen Russia’s international positions successful amounted to 52–53%. The proportion of those who hold the opposite point of view is considerably lower (32%).

There have been positive changes in the dynamics of population assessments over the past 12 months and on average for 2023–2024: from December 2023 to December 2024, an increase from 48 to 52% (by 4 percentage points), according to the annual average data, an increase in approving judgments regarding the activities of the head of state to strengthen international positions from 47% in 2023 to 52% in 2024 (by 5 percentage points).

In your opinion, how successful is the RF President in handling challenging issues?  
(% of respondents; VoIRC RAS data)

**Strengthening Russia’s international position**

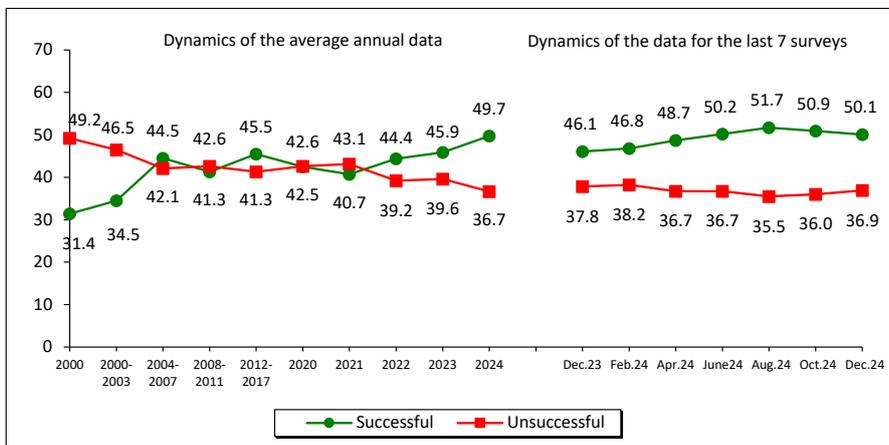


Dynamics (+/-), Dec. 2024 to		
Response	Dec. 2023	Oct. 2024
Successful	+4	-2
Unsuccessful	0	+1

Over the past two months, the opinion of Vologda Region residents about the activities of the head of state to restore order in the country has remained the same: the share of positive judgments was 50–51%, negative ones – 36–37%.

Over the past 12 months, positive changes have been recorded in the dynamics of population assessments: the proportion of residents who believe that the RF President is successfully managing to restore order in the country has increased from 46% to 50% (by 4 percentage points); the share of approving responses has also increased on average in 2023–2024.

**Imposing order in the country**

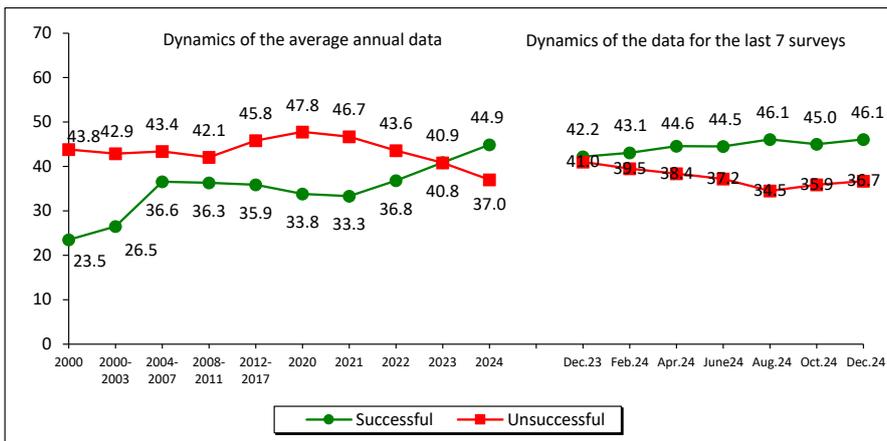


Dynamics (+/-), Dec. 2024 to		
Response	Dec. 2023	Oct. 2024
Successful	+4	-1
Unsuccessful	-1	+1

In October – December 2024, the share of positive assessments of the President’s work to protect democracy and strengthen citizens’ freedoms was 45–46%; the proportion of opposite opinions was 36–37%.

In December 2024, compared with December 2023, the proportion of positive characteristics increased from 42 to 46% (by 4 percentage points). Positive changes are also observed on average in 2024 compared to 2023: an increase in the proportion of positive judgments from 41 to 45% (by 4 percentage points), with a decrease in the share of negative ones from 41 to 37% (by 4 percentage points).

Protecting democracy and strengthening citizens’ freedoms

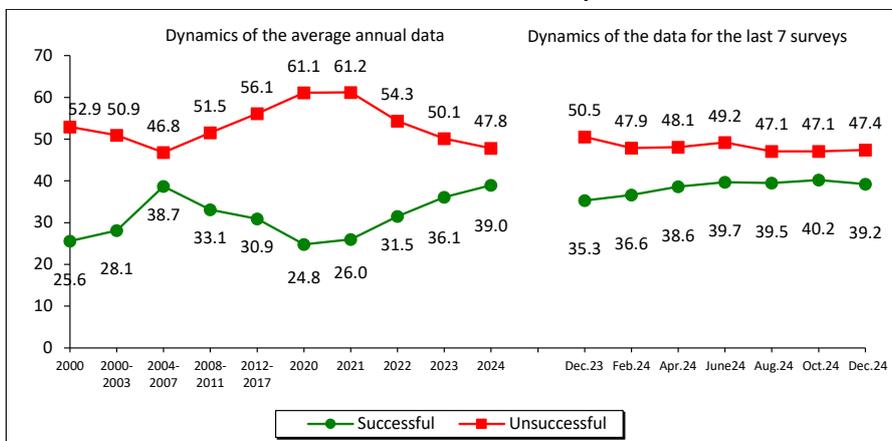


Dynamics (+/-), Dec. 2024 to		
Response	Dec. 2023	Oct. 2024
Successful	+4	+1
Unsuccessful	-4	+1

Over the past two months the share of positive assessments of the way the Russian President handles the problem of economic recovery and growth of citizens’ welfare was 39–40%. The proportion of negative judgments was 47%.

During the period from December 2023 to December 2024, the share of positive public assessments of the head of state’s activities to boost the economy and increase the welfare of citizens increased from 35 to 39% (by 4 percentage points). On average, positive trends were noted in 2024 compared to 2023.

Economic recovery, increase in citizens’ welfare



Dynamics (+/-), Dec. 2024 to		
Response	Dec. 2023	Oct. 2024
Successful	+4	-1
Unsuccessful	-3	0

The political preferences of Vologda Region inhabitants in October – December 2024 remained stable: the share of people whose interests are expressed by the United Russia party was 42%, the Communist Party – 9%, the Liberal Democratic Party – 8–9%, the Just Russia – 4%, the New People – 2%.

The political preferences of the region’s residents did not change in 12 months. **On average, in 2024, compared with 2023, support for the United Russia party increased from 39 to 43% (by 4 percentage points).**

Which party expresses your interests?  
(% of respondents; VoIRC RAS data)

Party	Dynamics of the average annual data													Dynamics of the data for the last 7 surveys							Dynamics (+/-), Dec. 2024 to	
	2000	2007	2011	Election to the RF State Duma 2011, fact	2012	2016	Election to the RF State Duma 2016, fact	2020	Election to the RF State Duma 2020, fact	2021	2022	2023	2024	Dec. 2023	Feb. 2024	Apr. 2024	June 2024	Aug. 2024	Oct. 2024	Dec. 2024	Dec. 2023	Oct. 2024
United Russia	18.5	30.2	31.1	33.4	29.1	35.4	38.0	31.5	49.8	31.7	35.2	39.5	42.9	41.7	42.7	44.5	43.7	42.5	41.8	42.3	+1	+1
KPRF	11.5	7.0	10.3	16.8	10.6	8.3	14.2	8.4	18.9	9.3	10.1	9.6	8.9	9.8	9.0	8.5	8.2	9.7	8.7	9.1	-1	0
LDPR	4.8	7.5	7.8	15.4	7.8	10.4	21.9	9.5	7.6	9.9	7.3	7.0	7.1	6.5	6.6	6.5	7.1	6.1	7.5	8.8	+2	+1
Just Russia – Patriots for the Truth	-	7.8	5.6	27.2	6.6	4.2	10.8	4.7	7.5	4.7	4.9	4.4	3.5	3.5	3.6	2.8	2.7	3.5	4.2	4.4	+1	0
New People*	-	-	-	-	-	-	-	-	5.3	2.3	1.5	1.9	2.0	1.9	1.4	1.9	2.3	1.6	2.3	2.3	0	0
Other	0.9	1.8	1.9	-	2.1	0.3	-	0.5	-	0.2	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.0	0.3	0.3	0	0
None	29.6	17.8	29.4	-	31.3	29.4	-	34.2	-	33.9	30.6	26.5	25.2	26.6	25.2	24.2	26.1	25.1	24.1	26.3	0	+2
Difficult to answer	20.3	21.2	13.2	-	11.7	12.0	-	11.1	-	10.0	10.1	11.1	10.3	9.9	11.4	11.4	9.8	11.5	11.0	6.5	-3	-5

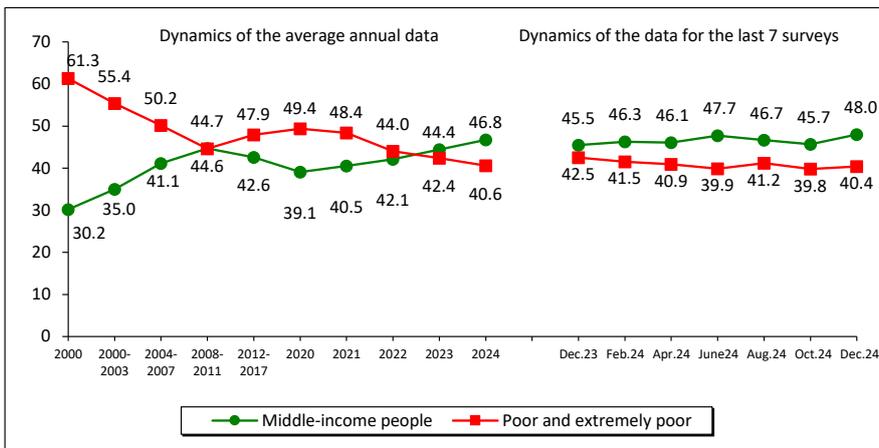
\* The New People party was elected to the State Duma of the Russian Federation for the first time following the results of the election held on September 17–19, 2021.

Estimation of social condition (% of respondents; VoIRC RAS data)

Over the past two months, the share of positive assessments of social mood was 70–72%; the share of negative characteristics was 25–26%.

Over the past 12 months, the proportion of people who describe their mood as “normal, fine” remained consistently high and changed slightly, as well as in 2023–2024. according to the annual average data.

Social mood

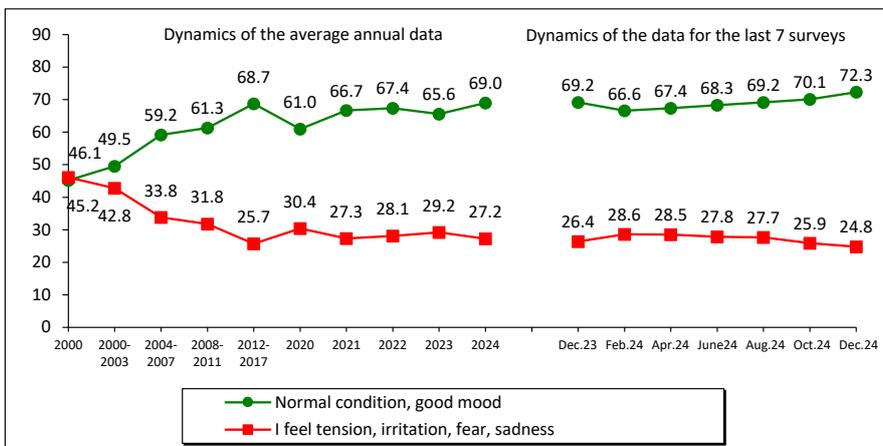


Response	Dec. 2023	Oct. 2024
Normal condition, good mood	+3	+2
I feel tension, irritation, fear, sadness	-2	-1

In October – December 2024, the stock of patience remains at a high level: 81% of Vologda Region residents noted that “everything is not so bad and life is livable”. The proportion of those who believe that “it is impossible to bear such plight” amounted to 12–14%.

Over the past 12 months, the stock of patience increased from 77% to 81% (by 4 percentage points). At the same time, according to the average annual data for 2023 and 2024, the estimates remained stable.

Stock of patience

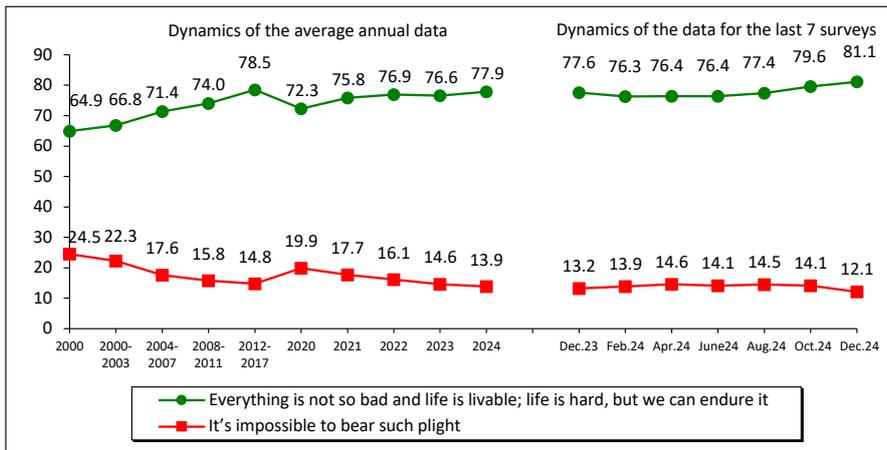


Response	Dec. 2023	Oct. 2024
Everything is not so bad and life is livable; life is hard, but we can endure it	+4	+2
It's impossible to bear such plight	-1	-2

As in October, in December 2024, the share of Vologda Region residents subjectively classifying themselves as “middle-income” people was 46–48%. The proportion of the “poor and extremely poor” did not change as well (40%).

Over the past 12 months, the share of “middle-income” people increased from 45 to 48% (by 3 percentage points). On average, in 2024, compared with 2023, it increased from 44 to 47% (by 3 percentage points).

**Social self-identification**



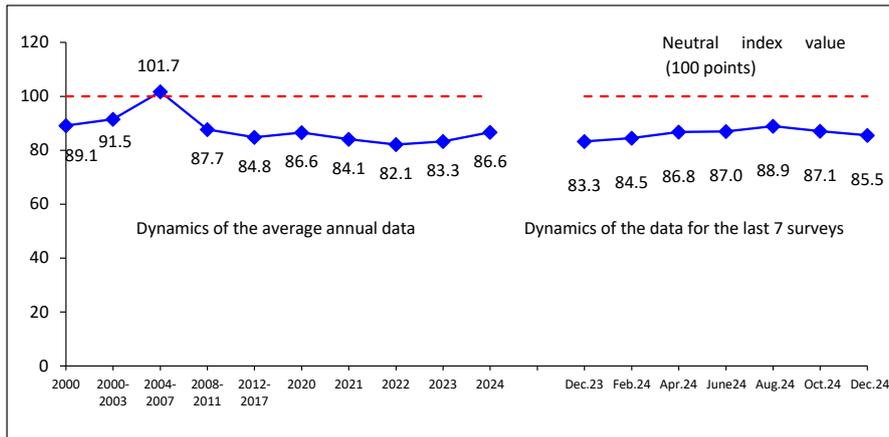
Dynamics (+/-), Dec. 2024 to		
Response	Dec. 2023	Oct. 2024
Middle-income people	+3	+2
Poor and extremely poor	-2	+1

Wording of the question: “What category do you belong to, in your opinion?”

The value of the Consumer Sentiment Index in December 2024 remained at the level of December 2023 with a slight decrease from 87 to 85 points (by 2 percentage points).

In December 2024, the value of the CSI is comparable to the data of December 2023 and amounts to 83–85 points. However, on average for 2023–2024, there are positive changes in the dynamics of the CSI: an increase from 83 to 87 points (by 4 percentage points).

Consumer Sentiment Index (CSI, points; VoIRC RAS data for the Vologda Region)



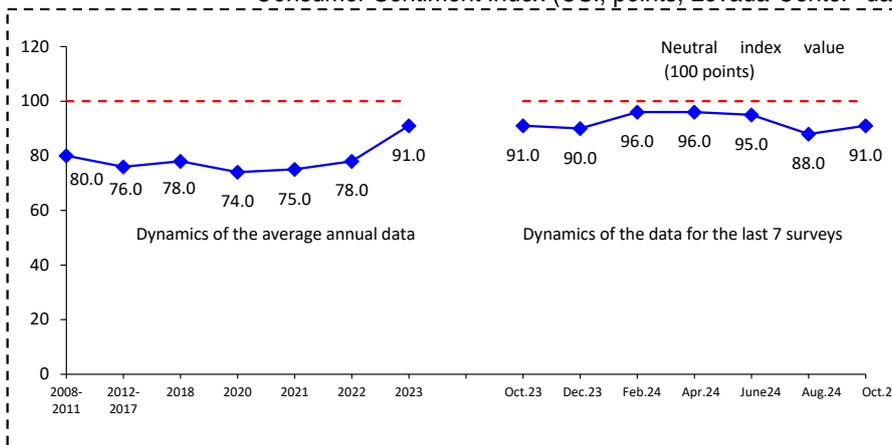
Dynamics (+/-), Dec. 2024 to		
CSI	Dec. 2023	Oct. 2024
Index value, points	+2	-2

**For reference:**

According to the latest data from the all-Russian surveys by Levada-Center\* (for the period from October to December 2024), the Consumer Sentiment Index was 88–91 points.

There were no significant changes in the value of the CSI over the past 12 months. At the same time, on average, significant positive changes are observed over the period from 2023 to 2024: an increase in the CSI by 13 points, from 78 to 91 points.

Consumer Sentiment Index (CSI, points; Levada-Center\* data for Russia)



Dynamics (+/-), Oct. 2024 to		
CSI	Oct. 2023	Aug. 2024
Index value, points	0	+3

\* The index is calculated since 2008. The latest data are as of October 2024.

Source: Levada-Center\*. Available at: <https://www.levada.ru/indikatory/sotsialno-ekonomicheskie-indikatory/>

\* Included in the register of foreign agents.

In October – December 2024 there were no significant changes in the dynamics of the share of positive assessments of social mood in most of the main socio-demographic groups. An increase in the proportion of those who positively characterize their daily emotional state is observed among men (from 65 to 70%).

From December 2023 to December 2024, the share of positive assessments of social mood increased in 5 of the 14 main socio-demographic groups, especially among women (by 6 percentage points, from 69 to 75%); people aged over 55 (by 6 percentage points, from 62 to 68%); people with secondary vocational education (by 7 percentage points, from 69 to 76%); 20% of the group of the most affluent (by 5 percentage points, from 76 to 81%), and residents of Vologda (by 5 percentage points, from 65 to 70%). There are no significant changes in other socio-demographic groups.

Social mood in different social groups (response: “Wonderful mood, normal, stable condition”, % of respondents; VolRC RAS data)

Population group	Dynamics of the average annual data									Dynamics of the data for the last 7 surveys							Dynamics (+/-), Dec. 2024 to	
	2000	2007	2011	2012	2020	2021	2022	2023	2024	Dec. 2023	Feb. 2024	Apr. 2024	June 2024	Aug. 2024	Oct. 2024	Dec. 2024	Dec. 2023	Oct. 2024
<b>Sex</b>																		
Men	50.1	65.9	64.5	69.1	60.8	65.7	66.8	65.5	66.5	69.6	66.5	67.7	63.5	67.1	65.2	69.2	0	+4
Women	43.3	61.7	62.0	65.8	61.2	67.4	67.9	65.7	70.9	68.9	66.5	67.1	72.1	70.9	74.0	74.7	+6	+1
<b>Age</b>																		
Under 30	59.1	71.3	70.0	72.3	67.6	73.5	77.6	75.0	76.6	78.0	75.1	77.5	71.8	76.1	78.0	81.3	+3	+3
30–55	44.2	64.8	62.5	67.9	61.8	69.5	69.4	68.8	71.3	72.3	69.9	70.0	71.8	72.8	69.8	73.2	+1	+3
Over 55	37.4	54.8	58.3	62.1	57.4	60.5	61.1	58.2	63.3	62.0	59.2	60.7	62.7	62.1	67.4	67.8	+6	0
<b>Education</b>																		
Secondary and incomplete secondary	41.7	58.4	57.4	57.2	56.1	62.1	64.6	62.0	64.6	65.5	63.9	64.7	65.5	65.3	62.5	65.5	0	+3
Secondary vocational	46.4	64.6	63.6	66.7	63.5	66.7	68.3	66.1	70.3	69.1	66.0	67.9	65.2	70.7	75.2	76.5	+7	+1
Higher and incomplete higher	53.3	68.6	68.3	77.0	63.3	71.5	69.5	68.8	72.3	72.8	69.4	69.8	76.0	72.1	72.3	74.2	+1	+2
<b>Income group</b>																		
Bottom 20%	28.4	51.6	45.3	51.5	43.4	54.6	57.0	50.1	53.5	54.2	52.2	53.0	51.3	53.7	54.8	55.7	+2	+1
Middle 60%	45.5	62.9	65.3	68.7	62.6	67.3	68.1	67.4	70.7	73.1	66.9	68.5	70.0	71.0	73.6	74.2	+1	+1
Top 20%	64.6	74.9	75.3	81.1	75.6	79.9	78.3	73.9	77.6	75.9	74.4	77.5	78.5	75.9	78.4	80.6	+5	+2
<b>Territory</b>																		
Vologda	49.2	63.1	67.1	73.6	60.9	60.3	59.8	59.6	66.0	64.8	62.5	64.2	65.2	66.4	67.9	69.6	+5	+2
Cherepovets	50.8	68.1	71.2	76.2	60.4	71.0	71.2	68.1	69.8	70.6	67.2	68.2	69.4	70.2	70.7	73.0	+2	+2
Districts	42.2	61.6	57.1	59.8	61.4	67.8	69.5	67.7	70.2	70.9	68.5	68.8	69.4	70.3	71.0	73.4	+3	+2
Region	46.2	63.6	63.1	67.3	61.0	66.6	67.4	65.6	69.0	69.2	66.5	67.4	68.3	69.2	70.1	72.3	+3	+2

## SUMMING UP

The results of six rounds of public opinion monitoring conducted in 2024 allow us to summarize the results of the year and assess how Vologda Region inhabitants assess key events that took place in the country and the region.

The external factors determining changes in the condition of society, of course, remain the ongoing special military operation and the resulting escalation of threats to Russia's national security from NATO countries. In the context of comprehensive threats to national sovereignty (including threats of an informational and cultural-value nature), the country's leadership has actively taken and is taking managerial decisions aimed at strengthening the economic, political, and cultural sovereignty of the Russian state.

The main internal event was the election of the President of the Russian Federation. More than 87% voted for Vladimir Putin; turnout was 77%; trust in the results of the election was 83% – all this set a historical record for modern Russia<sup>4</sup>. The support for Vladimir Putin by the majority of voters determined the country's political course for the coming years and demonstrated the consolidation of society and government in difficult modern realities.

Despite external pressure, the state has maintained all social obligations; moreover, new development goals have been set<sup>5</sup>. In 2024, a number of significant social initiatives were implemented within the framework of the Year of the Family announced by the president: the amount of maternity capital was increased, new benefits and allowances were introduced, as well as special titles for large families (“Heroine Mother”, “Parental Glory”). In his Address to the Federal Assembly of the Russian Federation, the Russian President announced the launch of five new national projects<sup>6</sup>. In addition, as Vladimir Putin noted during the “direct line” on December 19, 2024, “in two years, the Russian economy has grown by about 8%, and the situation remains stable”<sup>7</sup>.

In the Vologda Region, in September 2024, gubernatorial election was held, according to the results of which Georgy Filimonov (United Russia) won, gaining 273,380 votes (62.3%).

Public opinion monitoring data indicate that the noted events and changes in some sense “compensated” for public concern about external threats coming from the NATO countries. In our opinion, this is largely why the trends in public sentiment are mainly positive for 2024 compared to the average annual data for 2023.

**1. The share of positive assessments of the work of the head of state increased by 6 percentage points, from 61 to 67%, which indicates that the majority of the population understands and supports the political course implemented by the President.**

**2. There has been an increase in approval of the head of state's activities to strengthen international positions by 5 percentage points, from 47 to 52%; to restore order in the country by 4 percentage points, from 46 to 50%; to protect democracy and strengthen citizens' freedoms by 4 percentage points, from 41 to 45%; to raise economic growth and the growth of the welfare of citizens by 3 percentage points, from 36 to 39%.**

<sup>4</sup> EISI experts named the main political events of 2024. Available at: <https://rg.ru/2024/12/18/eksperty-eisi-nazvali-glavnye-politicheskie-sobytiia-2024-goda.html>

<sup>5</sup> On the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036: Presidential Decree 309, dated May 7, 2024.

<sup>6</sup> Putin: In two years, the Russian economy has grown by about 8 percent. Available at: <https://rg.ru/2024/12/19/putin-zadva-goda-rost-ekonomiki-rossii-sostavil-okolo-8-procentov.html>

<sup>7</sup> Putin announced the launch of new national projects in Russia. Available at: <https://iz.ru/1657779/2024-02-29/putin-soobshchil-o-zapuske-novykh-natsionalnykh-proektov-v-rossii>

3. The proportion of people who believe that their interests are reflected by the party in power (United Russia) has increased by 4 percentage points (from 39 to 43%).

4. The background of psychological well-being of the population remains stable. The share of Vologda Region residents who describe their daily emotional state as “normal, fine” is 66–69%, with positive ratings increasing by 3 percentage points in 2024 compared to 2023.

5. The stock of patience has increased over the past 12 months from 77 to 81% (by 4 percentage points). At the same time, according to the average annual data for 2023 and 2024, the estimates remained stable.

6. Over the past year, there were no significant changes in the dynamics of assessments by residents of the region of their financial situation and the economic situation in the country. The share of those who consider themselves “poor and extremely poor” has been gradually decreasing since 2020 (from 2020 to 2024 – by 8 percentage points, from 49 to 41%); the proportion of “middle-income” people has also increased by 8 percentage points over the past 5 years, from 39 to 47%.

7. On average, in 2023–2024, we observe positive changes in the dynamics of the CSI, an increase from 83 to 87 points (by 4 percentage points).

Thus, the results of the public opinion monitoring in the Vologda Region in 2024 confirm the steady dynamics of positive sentiments among the population. Public support for the president and the country’s political course continues to grow, which indicates the consolidation of society in the face of external challenges and internal changes.

In a sense, this correlates with the recent words of the head of state that “Russia should not return to the path it followed before 2022”<sup>8</sup>. However, we should bear in mind that the new stage of history, which began for our country almost three years ago, is still very far from its completion. The new Russia is still being built, and the international political situation around our country is still full of dangers and threats that can, among other things, have a significant negative impact on the nature of public sentiment.

The results of the next round of the VolRC RAS monitoring will show in which direction changes in public opinion of the residents of the region will develop in the near future.

Prepared by K.E. Kosygina and I.M. Bakhvalova

<sup>8</sup> A direct quote from the President of the Russian Federation, delivered at the plenary session of the Valdai International Discussion Club on November 7, 2024 in Sochi: “I would not like Russia to return to the path it followed before 2022 ... it was a path that was associated with such a hidden, veiled intervention against our country”.

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