

FEDERAL STATE BUDGETARY INSTITUTION OF SCIENCE
VOLOGDA RESEARCH CENTER OF THE RUSSIAN ACADEMY OF SCIENCES



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

Volume 15, Issue 5, 2022

The journal was founded in 2008

Publication frequency: bimonthly

According to the Decision of the Ministry of Education and Science of the Russian Federation, the journal *Economic and Social Changes: Facts, Trends, Forecast* is on the List of peer-reviewed scientific journals and editions that are authorized to publish principal research findings of doctoral (candidate's) dissertations in scientific specialties:

08.00.00 – economic sciences;

22.00.00 – sociological sciences.

The journal is included in the following abstract and full text databases:

Web of Science (ESCI),

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Ulrich's Periodicals Directory,

VINITI RAS,

Russian Science Citation Index (RSCI).

All research articles submitted to the journal are subject to mandatory peer-review.

Opinions presented in the articles can differ from those of the editor. Authors of the articles are responsible for the material selected and stated.

ISSN 2307-0331 (Print)

ISSN 2312-9824 (Online)

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Internet address: <http://esc.volinc.ru>

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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Federal State Budgetary Institution of Science Vologda Research Center of the Russian Academy of Sciences (VoIRC RAS) is the only unit of the Academy on the territory of the Vologda Oblast. The history of the Center started in 1990 from a Department of the Institute for Economic Studies of the Kola Science Centre of RAS on studying the problems of socio-economic development of the Vologda Oblast. Since then the Center has undergone manifold transformations. In 1993 it became an independent subdivision – the Vologda Scientific Coordinating Center of RAS. In 2009 it transformed into the Institute of Socio-Economic Development of Territories of RAS (ISED T RAS).

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).

MAIN RESEARCH DIRECTIONS

In accordance with the Charter, the Vologda Research Center carries out fundamental, exploratory and applied research in the following fields:

- problems of economic growth, scientific basis of regional policy, sustainable development of territories and municipalities, and transformations of socio-economic space;
- regional integration into global economic and political processes, problems of economic security and competitiveness of territorial socio-economic systems;
- 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;
- development of new breeding methods, methods and programs for improving breeding work with cattle;
- development of scientifically based feed production systems, norms, rations and feeding systems for cattle in the conditions of the North-Western region of Russia;

- development of zonal technologies for the cultivation of agricultural crops;
- development of technologies for the creation, improvement and rational use of hayfields and pastures in the conditions of the North-Western region of Russia;
- 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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VoIRC RAS is actively developing its international activities. It is involved in joint international grant projects and regularly holds international conferences and workshops. The Center has Cooperation agreements and Memoranda of understanding with research organizations:

2007 – Cooperation agreement is signed with the Institute of Sociology of the National Academy of Sciences of Belarus, Center for Sociological and Marketing Investigations at the “International Institute of Humanities and Economics” (Belarus, 2008).

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 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

DOI: 10.15838/esc.2022.5.83.1

UDC 354, LBC 66.03

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The Special Military Operation Reveals New Features of Civil Society



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Abstract. Eight months have passed since the RF President announced the launch of a special military operation on the territory of Ukraine (February 24, 2022); thus, currently Russia is facing a global political situation that has become more turbulent. Difficulties on the front line, frequent terrorist attacks, military aid to the Kiev regime from NATO countries – all this urged the Supreme Commander-in-Chief of the RF Armed Forces to make tough but necessary decisions that could not but affect the majority of Russian society. The paper analyzes key events related to the special military operation, as well as the decisions promptly taken by the President in accordance with the requirements of the time and the situation on the front line. We focus on some of the President’s decisions, such as the announcement of partial military mobilization (September 21, 2022); amendments to the RF Criminal Code aimed to strengthen discipline in the army and society during martial law and wartime (September 24, 2022); accession of new territories to Russia – the Donetsk People’s Republic, the Lugansk People’s Republic, the Kherson and

For citation: Ilyin V.A., Morev M.V. (2022). The special military operation reveals new features of civil society. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 9–32. DOI: 10.15838/esc.2022.5.83.1

Zaporozhye oblasts (October 5, 2022); large-scale precision missile strikes on Ukrainian infrastructure, military communications and command posts (October 10, 2022); introduction of martial law in the new constituent entities of the Russian Federation and the establishment of special measures to ensure security of all regions of the Russian Federation (19 October 2022). We analyze public opinion trends and the results of the Single Voting Day (September 11, 2022), which are considered as indicators of public sentiment in the hard times that our country is facing. On the whole, our research has shown that the alarming political situation on the global arena, as well as the tough decisions adopted by the head of state in recent months, revealed new features in Russian civil society, provoked changes in the people's internal awareness of the scale of threats to national security. This, in particular, was expressed in the following: many Russians are participating in the special military operation as volunteers; volunteer aid is increasing; in society, there is strong condemnation of those who left Russia after the start of the special operation; all the social strata are consolidating around the RF President; the above trends are observed in the dynamics of public opinion assessments. All these factors can play an important role in Russia's crossing its internal Rubicon in the form of the reorientation of broad strata of Russian society, and above all its elite groups, from the Western development dogmas imposed during the 30th anniversary of the market transformation toward nationally oriented goals and values.

Key words: special military operation, partial mobilization, RF President, public administration system, civil society, elections, public opinion.

The special military operation, the beginning of which was announced by the RF President on February 24, 2022, “drew an invisible but indelible line in the history of the country”, marking the end of Russia's history as a “quasi-colony” of the

West and the starting point of its new history as a sovereign state and one of the centers of a multipolar world.

However, for a long time after the outbreak of hostilities on the territory of Ukraine, experts have raised a question of how much Russian society, and above all its elite, is aware and ready to accept the **scale and irreversibility** of the changes taking place in the country? **“We have irrevocably and radically broken up with the West. But this has not yet been comprehended”**, the Russian philosopher A. Dugin wrote in July 2022². The elite “has no worldview for the last decisive battle with the West. **Moreover, its whole system of long-term interests is protesting against something like this**”³. “It is useless to pretend that the current elites will easily rebuild in a new way. It doesn't happen that way ...”⁴

“Russia's special military operation in Ukraine, which began on February 24, 2022, **drew an invisible but indelible line in the history of the country...** It was the SMO that marked the rise of a new political movement in the country, which can be described as **liberation from colonial restrictions**. Thus, the watershed of the events of 2022 is marked very clearly: the history of Russia as a quasi-colony from 1991 to February 24, 2022; **the latest history of sovereign Russia after this date**”¹.

¹ Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. *Journal of Institutional Studies*, 14(3), p. 75.

² Dugin A.G. Integral sovereignty. Official website of the Izborsk Club. July 4, 2022. Available at: <https://izborsk-club.ru/23057>

³ Kurginyan S.E. In order not to collapse into the abyss. *Sut' vremeni*. June 30, 2022. Available at: <https://eot.su/node/23743>

⁴ Averyanov V.V. There will be a battle for the renewal of the state. Official website of the Izborsk Club. July 16, 2022. Available at: <https://izborsk-club.ru/23090>

In many respects, the events that began after six months of the special military operation and led to a series of important decisions made by Russian President Vladimir Putin became a kind of answer to these quite reasonable doubts voiced by experts.

Since mid-August 2022, the situation in and around Russia has become significantly more complicated. The continuing growth of international political tension (loud statements in the public rhetoric of the international political establishment and the world media; the “pumping” of Ukraine with weapons, mercenaries, instructors; economic sanctions, etc.) was aggravated by a **difficult situation on the front line** (the counteroffensive of the Armed Forces of Ukraine on September 6–12, 2022, as a result of which Russian troops had to withdraw from their previous positions in the Kharkov region; withdrawal of allied forces from the city of Krasny Liman on October 1, 2022).

Due to active supplies of weapons from NATO countries, the Armed Forces of Ukraine continued regular shelling of the border territories; as a result, on **September 25**, a hotel was destroyed in the Kherson Oblast (among the dead was a well-known public figure **A. Zhuravko**⁵); On October 15, one of the tanks of a local oil depot was hit in the Belgorod Oblast...

In addition, since the second half of August, **major terrorist** attacks have been committed against Russia (both outside and on its territory); they have actually become regular:

✓ **August 15** – an attempted terrorist attack was prevented at an oil and gas complex facility in the Volgograd Oblast;

✓ **August 20** – murder of Dariya Dugina, Russian journalist, daughter of philosopher A. Dugin;

✓ **September 26** – explosions at the Nord Stream and Nord Stream-2 gas pipelines;

✓ **October 8** – a terrorist attack that contributed to the collapse of part of the Crimean Bridge (after which it was decided to strike with high-precision weapons at energy, military administration and communications facilities on the territory of Ukraine);

✓ **October 10** – an attempt to undermine one of the sections of the TurkStream gas transmission system was prevented;

✓ **October 11** – a terrorist attack on the Druzhba oil pipeline, the largest Russian pipeline supplying oil to Europe, was prevented.

Thus, the extremely tense situation required the Supreme Commander to take **decisive action**. As the President noted: “In the event of a threat to the territorial integrity of our country and to defend Russia and our people, we will certainly make use of **all weapon systems available to us**”⁶.

“Vladimir Putin makes all decisions with his eyes open, consciously. There is no doubt about it”⁷. In fact, from the very beginning of the special military operation, the President and the Government of the Russian Federation regularly take measures aimed both at the general strengthening of the spiritual and moral atmosphere and traditional values in Russian society and at addressing specific, priority tasks related to supporting the country’s economy and the standard of living under sanctions, with social protection of certain categories of citizens, with the strengthening of morale and

⁵ A.V. Zhuravko was a Ukrainian politician, member of the Party of Regions; former deputy of the Verkhovna Rada of Ukraine, member of the Party of Regions faction, Secretary of the Committee on the Rights of Disabled People and Veterans. After the change of power in Kiev in 2014, he was in opposition to the government of Ukraine. In 2015, he left Ukraine, moved to live in Russia and in 2022 returned to the Kherson Oblast. For his public activities, he was posthumously awarded the medal “For Bravery” by the Head of the Donetsk People’s Republic D. Pushilin.

⁶ Address of the President of the Russian Federation to Russians on September 21, 2022. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/69390>

⁷ What the Presidential decree is about. *Nezavisimaya gazeta*. September 22, 2022. Available at: https://www.ng.ru/editorial/2022-09-22/2_8547_editorial.html

discipline in the Russian army, with personnel changes in the system of public administration, in science and education, culture, media, etc.

The monitoring⁸ of the decisions taken by the RF President and the RF Government in the current difficult external and internal conditions for Russia, shows the most significant of them.

✓ **March 4, 2022, administrative liability was established for public actions aimed at discrediting the Russian Armed Forces⁹ and criminal liability for the public dissemination, under the guise of reliable reports, of deliberately false information containing data on the use of the Russian Armed Forces¹⁰.** V. Kolokoltsev, RF Minister of Internal Affairs, pointed out that “against the background of the special military operation, the Ministry of Internal Affairs stopped about 4.5 thousand administrative offenses related to the discrediting of the Armed Forces of the Russian Federation... more than 100 criminal cases were initiated”¹¹.

✓ **May 3, 2022, Presidential Decree 252 “On the application of retaliatory special economic measures in connection with the unfriendly actions of some foreign states and international organizations” was adopted¹².** It approved a list of companies with which (and controlled by which) Russian legal entities and individuals are prohibited from any financial transactions and the supply of goods. The list of organizations of unfriendly countries includes

31 enterprises. Experts noted that this decree became “a clear, tough and at the same time demonstratively deliberate response in the gas sphere, which is the most sensitive for the aggressor countries”¹³.

✓ **July 14, 2022, Federal Law 255 “On the control of the activities of persons under foreign influence” was adopted,** which, according to experts, acted as “a kind of code on foreign agents... Its essence lies in the placement of all categories of foreign agents in the unified register of the Ministry of Justice, the unification of various prohibitions and restrictions”¹⁴. It is worth noting that as of October 14, 2022, 193 foreign agents (individuals and legal entities, associations, mass media) appear in the official “Register of foreign mass media performing the functions of a foreign agent”, 75 of them (that is, almost 40%) are listed in the register in the period after the start of the special military operation on territory of Ukraine¹⁵.

✓ **July 31, 2022, the Naval Doctrine of the Russian Federation and the Naval Charter of the Navy were approved,** which clearly identify the main threats to national security (these include for the first time “the strategic course of the United States to dominate the oceans and its global influence on the development of international processes”) and with the help of which, according to experts, “Russia shows to the whole world that it will protect itself by all available means”¹⁶.

⁸ The first monitoring data are published 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), 29–32.

⁹ On amendments to the Code of Administrative Offences of the Russian Federation: Federal Law. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/67910>

¹⁰ On amendments to the Criminal Code of the Russian Federation and Articles 31 and 151 of the Criminal Procedure Code of the Russian Federation: Federal Law. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/67908>

¹¹ Report of the Minister of the Ministry of Internal Affairs of the Russian Federation V. Kolokoltsev in the State Duma on October 10, 2022. Official website of the RF State Duma. Available at: <http://duma.gov.ru/news/55541/>

¹² Official website of the RF President. May 3, 2022. Available at: <http://kremlin.ru/acts/news/68347>

¹³ Delyagin M. Mishustin’s government: Moving to the offensive. *Zavtra*. May 19, 2022. Available at: https://zavtra.ru/blogs/pravitelstvo_mishustina_perehodya_v_nastuplenie

¹⁴ Rodin I. Draconian laws will be applied not only to the opposition. *Nezavisimaya gazeta*. June 28, 2022.

¹⁵ Register of foreign mass media performing the functions of a foreign agent (data as of October 14, 2022). Official website of the RF Ministry of Justice. Available at: <https://minjust.gov.ru/ru/documents/7755/>

¹⁶ Russia’s Naval Doctrine is a response to U.S. ambitions in the Arctic. *Vzglyad*. July 31, 2022. Available at: <https://vz.ru/news/2022/7/31/1170278.html> (opinion of the Hero of the Russian Federation, Rear Admiral I. Kozlov).

In the context of frequent terrorist attacks and the difficult situation on the front line in August – October 2022, the head of state, the Government, the Federal Assembly continued the process of developing and taking priority measures to strengthen Russia's national sovereignty (the most important of them are presented in *Insert 1*).

August 5, 2022, the RF President signed a decree on the application of special economic measures in the financial and fuel and energy spheres in connection with the unfriendly actions of some foreign states and international organizations, continuing the process of regulating the international policy of the Russian Federation toward unfriendly countries.

“...the three components [of the Concept], which mean that Moscow has passed the point of no return in relations with the West:

The first point among the national interests of the Russian Federation in the humanitarian sphere abroad is called “**protection of traditional Russian spiritual and moral values**”...

The second component is consolidation of the concept of “Russian world” at the official level ...

The third component is the formulation... of the concept of Eurasianism. We are talking about the “synthesis of the European and the Asian principles”, which, in fact, is the essence of this ideology...

These provisions of the concept are the formulation of a **total ideological alternative on the part of Russia**. From now on, we are not integrated into the “Atlantic Community” and offer a conservative value alternative, challenging left-wing liberalism”¹⁷.

August 27, 2022, a decree was signed on temporary measures to regulate the legal status of citizens of the DPR, LPR and Ukraine in Russia, simplifying the possibility of living in Russia for citizens of these territories.

September 5, 2022, the Concept for Russia's Humanitarian Policy was adopted¹⁸, which, according to experts, became evidence that “Russia declared itself not only as a military-political alternative to the United States ... For the first time since 1985, it formulated its alternative value project to the West... Russia is now a value alternative to the American-centric project”¹⁹.

September 21, 2022, the decree “On the announcement of partial mobilization in the Russian Federation” was signed, according to which citizens called up for military service on mobilization receive the status of military personnel serving in the RF Armed Forces under a contract. According to the statement of the RF Minister of Defense Sergei Shoigu, 300 thousand reservists (primarily those with combat experience) will be mobilized to participate in the special military operation; they constitute about 1.1% of the total mobilization resource of the country²⁰.

September 24, 2022, the federal law “On amendments to the Criminal Code of the Russian Federation and Article 151 of the Criminal Procedure Code of the Russian Federation” was adopted, which established legal foundations for the amendments to the RF Criminal Code on punishments for actions related to military service and committed during periods of mobilization, martial law and wartime (in *Insert 1*, this decision

¹⁷ Fenenko A. Value confrontation. Russia has passed the point of no return in foreign policy. *Nezavisimaya gazeta*. September 12, 2022. Available at: https://www.ng.ru/kartblansh/2022-09-12/3_8537_kb.html

¹⁸ On the approval of the Concept for Russia's Humanitarian Policy abroad: Presidential Decree 611, dated September 5, 2022.

¹⁹ Fenenko A. Value confrontation. Russia has passed the point of no return in foreign policy. *Nezavisimaya gazeta*. September 12, 2022. Available at: https://www.ng.ru/kartblansh/2022-09-12/3_8537_kb.html

²⁰ Defense Minister Sergei Shoigu gave a number of explanations about the partial mobilization. Channel One. News. September 21, 2022. Available at: https://www.itv.ru/news/2022-09-21/438147-ministr_oborony_serгей_shoygu_dal_ryad_poyasneniy_naschet_chastichnoy_mobilizatsii

is highlighted in pink). The amendments clarify the terms “mobilization”, “martial law”, “wartime”, introduce new types of violations into the RF Criminal Code (“Voluntary surrender”, “Looting”), toughen penalties for leaving a unit or failing to appear on time for service, non-fulfillment by subordinates of their superior’s order, refusal to participate in military or combat operations, non-fulfillment of a state defense order, damage or destruction of military equipment (for all these crimes, penalties from 3 to 15 years in prison are provided). The Director General of the Institute of Political Studies S. Markov noted that “it was also necessary to strengthen discipline. Tougher penalties are aimed at solving this problem... After 30 years of looseness, relaxation, the time has come for testing, and it requires more strictness”²¹.

September 30, 2022, the RF President signed agreements on the admission of the DPR, LPR, Zaporozhye and Kherson oblasts to Russia. This is the most important event in the history of the country. In fact, the whole range of procedures²² related to the accession of new territories to the Russian Federation, starting with the referendums of September 23–27 and ending with the President

At the signing ceremony, the head of state noted: “Behind the choice of millions of residents in the Donetsk and Lugansk people’s republics, in the Zaporozhye and Kherson regions, is **our common destiny and thousand-year history...** I want the Kiev authorities and their true handlers in the West to hear me now, and I want everyone to remember this: **the people living in Lugansk and Donetsk, in Kherson and Zaporozhye have become our citizens, forever**”²³.

signing the relevant federal constitutional laws on October 5, 2022 **summed up the first eight months of the special military operation on the territory of Ukraine:** simultaneously with the signing of agreements on the accession of four new constituent entities to Russia, **the country moved on “to the next round of its historical existence”, at which it entered into a tough confrontation with NATO countries,** including “almost all dimensions – geopolitical, civilizational, economic, cultural, military... Everything that we only guessed, assumed and hoped for is now called by its own names... Now it is obvious to everyone that Moscow has essentially come to question the Belovezha Accords ..., which

²¹ “Mobilization is a ‘just in case’ option”: Political scientists have revealed the meaning of the amendments to the Criminal Code (opinion of S. Markov, Director General of the Institute of Political Studies). MK.ru. September 20, 2022. Available at: <https://www.mk.ru/politics/2022/09/20/mobilizaciya-opciya-na-vsyakiy-sluchay-politologi-raskryli-smysl-popravok-uk.html>

²² September 23–27, 2022, referendums on joining the Russian Federation were held on the territory of the DPR, LPR, Kherson and Zaporozhye oblasts. According to their results, 99.23% of residents of the Donetsk People’s Republic voted for joining Russia; 98.42% of residents of the Lugansk People’s Republic; 93.11% of residents of the Zaporozhye Oblast; 87.05% of residents of the Kherson Oblast (source: <https://vz.ru/news/2022/9/30/1180132.html>).

September 29, 2022, Vladimir Putin signed the decrees recognizing the independence of the Zaporozhye and Kherson oblasts (decrees 685, 686).

September 30, 2022, the ceremony of signing the agreements on the accession of the Donetsk People’s Republic, the Lugansk People’s Republic, the Zaporozhye Oblast and the Kherson Oblast to Russia and the formation of new constituent entities of the Russian Federation took place.

October 2, 2022, the Constitutional Court approved the package of documents on the accession of the Donetsk and Lugansk people’s republics, the Kherson and Zaporozhye oblasts to Russia.

October 3, 2022, deputies of the State Duma of the Russian Federation unanimously ratified the relevant treaties on the admission of four new territories to Russia.

October 4, 2022, the Federation Council ratified the agreements on the adoption of the DPR, LPR, Kherson and Zaporozhye regions.

On October 5, 2022, the President of the Russian Federation signed federal constitutional laws on the admission to the Russian Federation and the formation of new constituent entities within the Russian Federation – the Donetsk People’s Republic, the Lugansk People’s Republic, the Zaporozhye Oblast, the Kherson Oblast.

²³ Vladimir Putin’s speech at the ceremony of signing the agreements on the accession of the DPR, LPR, Zaporozhye and Kherson oblasts to Russia. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/69465>

means that we are going to revise the entire post-Soviet history of Russia and, accordingly, the world”²⁴.

October 10, 2022, after the terrorist attack on the Crimean Bridge, speaking at a meeting with permanent members of the RF Security Council, Vladimir Putin announced the decision to resume (after such actions started on February 24–25, 2022) “massive strikes with high-precision long-range air, sea and land-based weapons on energy, military administration and communications facilities of Ukraine”.

October 19, 2022, Vladimir Putin signed a decree on the introduction of martial law in the territories of the DPR, LPR, Zaporozhye and Kherson oblasts, as well as the Decree “On measures implemented in constituent entities of the Russian Federation in connection with Presidential Decree 756, dated October 19, 2022”.

The fundamental importance of these decrees lies in the fact that in this way (as some experts note) the President “ponders the contours of the system of public administration that would correspond to martial law”²⁵. In addition to the actual introduction of martial law in the new Russian territories, **all RF constituent entities** were classified as territories with the “maximum”, “average”, “increased” and “basic” response levels; **all governors were given additional powers; a special Coordinating Council was created**, which included vice-premiers, representatives of law enforcement agencies, the

socio-economic block of the Government, the Presidential Administration, as well as the State Council. Its goal is “to continue work on improving the coordination of activities to solve the tasks of the special military operation”²⁶. The head of the faction, State Duma deputy S. Mironov noted that the Coordinating Council “will become a key body that will address all the tasks related to the SMO. **And these tasks, of course, are broader than purely military measures carried out by law enforcement agencies**”²⁷.

Thus, in a difficult foreign policy situation, the head of state is forced to carry out “modernization of the public administration system for the tasks of the special operation and its consequences”²⁸, **and this actually opens up real prospects for gradually bringing the quality of the ruling elites in line with national interests within the framework of this process**, given the fact that many of these elites have formed, existed and are still under the “long-term hypnotic influence of the liberal-capitalist development paradigm”²⁹.

In particular, this type of modernization of the public administration system, according to some experts, could help “**for the entire period of economic mobilization**” to limit the export of national capital, which, as experts say, currently flows freely from the country and thus “**objectively turns itself into a resource for the development of other societies that involuntarily compete with Russia or are directly hostile to it**”³⁰.

²⁴ Dugin A. Putin has proclaimed the Russian idea. *Zavtra*. October 4, 2022. Available at: https://zavtra.ru/blogs/putin_provozglasil_russkuyu_ideyu

²⁵ Rodin I. Putin conducts a special operation in the field of national governance. *Nezavisimaya gazeta*. October 20, 2022. Available at: https://www.ng.ru/politics/2022-10-20/1_3_8571_decree.html

²⁶ Vladimir Putin’s speech at the meeting of the Security Council on October 19, 2022. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/69636>

²⁷ Official website of S. Mironov. October 20, 2022. Available at: <https://mironov.ru/moya-pozitsiya/nado-privlech-k-rabote-koordinatsionnogo-soveta-svo-deputatov-gosdumy/>

²⁸ Rodin I. Putin conducts a special operation in the field of national governance. *Nezavisimaya gazeta*. October 20, 2022. Available at: https://www.ng.ru/politics/2022-10-20/1_3_8571_decree.html

²⁹ Ilyin V.A., Morev M.V. (2022). On the way toward crossing the inner Rubicon. *Economic and Social Changes: Facts, Trends, Forecast*, 15(4), 9–31.

³⁰ Delyagin M. Locking up the creative energy of capital in Russia. *Zavtra*. October 21, 2022. Available at: https://zavtra.ru/blogs/zapiranie_v_rossii_tvorcheskoj_energii_kapitala

**Monitoring of the actions of federal state authorities to strengthen
the internal foundations of national sovereignty³¹**

August 5 – Decree on the application of special economic measures in the financial and fuel and energy spheres in connection with the unfriendly actions of some foreign states and international organizations. “According to the new rules, transactions with shares owned by companies of unfriendly states are prohibited until the end of 2022³², in strategic enterprises and their “offsprings”... at the same time, operations that are prohibited by the document can be carried out on the basis of the President special permission”³³.

August 12 – amendments were made to the decree on additional social guarantees for border guards and their family members. Russian border guards in the area of the special operation received new benefits (to count the completion of missions in the length of service for the appointment of a pension on preferential terms: one day of performing missions for the protection of the state border of the Russian Federation is counted as two days; for border guards injured in areas adjacent to the areas of the special operation, a month of being cured in case of injury will be counted for two months of the service”). Moreover, the new benefits also apply to those who have been guarding the border in these areas since February 24, 2022³⁴.

August 27 – Decree on temporary measures to regulate the legal status of citizens of the DPR, LPR and Ukraine in Russia. The decree grants the right to citizens of the DPR, LPR and Ukraine to stay in the Russian Federation without time limits, provided that they have undergone fingerprinting, photo and medical examination.

September 5 – Presidential Decree 611 “On approval of the Concept for Russia’s Humanitarian Policy abroad”. The Concept reflects Russia’s national interests in the humanitarian sphere, and also prescribes the main goals, objectives, principles and directions of humanitarian policy abroad. It touches upon the importance of promoting Russian science and education abroad, as well as supporting and popularizing the Russian language as a means of international communication. The task is to increase the competitiveness of domestic education, research and development. The need for proper coverage of the role of Russian scientists in the development of world science and support of bilateral ties with foreign universities, in particular in the development of international cooperation through UNESCO educational networks, is noted.³⁵ “The goals of the humanitarian policy of the Russian Federation abroad are to form and strengthen an objective perception of our country in the world, to promote understanding of the historical path, the role and place of Russia in world history and culture, and to expand contacts between people”³⁶.

³¹ In the Insert, we continue the monitoring of management decisions of the authorities, which we started in the previous article (Ilyin V.A., Morev M.V. (2022). A difficult road after the Rubicon. *Economic and Social Changes: Facts, Trends, Forecast*, 15(3), 29–32).

³² The list of unfriendly countries was created in accordance with Presidential Decree “On the temporary procedure for fulfilling obligations to certain foreign creditors”, dated March 5, 2022. The list includes 49 unfriendly countries, among them – 27 EU states.

³³ Putin signed a decree on retaliatory measures in the areas of fuel and energy and finance. *RIA-novosti*. August 6, 2022. Available at: <https://ria.ru/20220806/ukaz-1807681096.html>

³⁴ Putin granted new privileges to border guards in special operation areas. *RBK*. August 12, 2022. Available at: <https://www.rbc.ru/politics/12/08/2022/62f651fc9a794759cfc0352a>

³⁵ Vladimir Putin approved the Concept for Russia’s Humanitarian Policy abroad. Press Center of the Ministry of Science and Higher Education of the Russian Federation. September 7, 2022. Available at: <https://minobrnauki.gov.ru/press-center/news/novosti-ministerstva/57537/>

³⁶ On the approval of the Concept for Russia’s Humanitarian Policy abroad: Presidential Decree 611, dated September 5, 2022. Official website of the RF President. Available at: <http://static.kremlin.ru/media/events/files/ru/G3CkAuMhZXio8AzNaweT3wTGTaEA16OU.pdf>

Continuation of Insert 1

September 21 – Decree “On the announcement of partial mobilization in the Russian Federation”. The law provides for the conscription of citizens of the Russian Federation for military service on mobilization into the Armed Forces of the Russian Federation, while citizens of the Russian Federation called up for military service on mobilization receive the status of military personnel undergoing military service in the Armed Forces of the Russian Federation under contract.

According to the statement of the RF Ministry of Defense, “privates and sergeants under the age of 35, junior officers – up to 50, seniors – up to 55 are subject to mobilization. Those who are needed to perform current tasks will be called up – these are shooters, tankers, gunners, drivers and driver mechanics. One of the key factors in conscription is the presence of combat experience”³⁷. As Russian Defense Minister Sergei Shoigu noted, “we have a huge mobilization resource, that is, the resource of those who had been enlisted, those who have combat experience, those who have a military specialty. We have almost 25 million of them. Thus, you can understand that this mobilization, partial mobilization, is 1% or slightly more, 1.1% of the total mobilization resource... this is 300 thousand reservists who will be mobilized”³⁸.

September 22 – RF Government Resolution 1677 “On the preservation of jobs for mobilized citizens”. According to the Resolution, “employment contracts with citizens called up for partial mobilization will be suspended, but not terminated” and “their jobs will be preserved”³⁹.

September 23 – Mikhail Mishustin gave instructions on the results of the strategic session on import substitution of software in industries.

The Chairman of the RF Government gave instructions to develop a draft law on the preferential use of domestic software, hardware and software complexes, telecommunications equipment and radio-electronic products by November 1. The RF Ministry of Digital Development, Communications and Mass Media is responsible for the preparation of the draft law.

September 24 – Federal Law “On amendments to the Criminal Code of the Russian Federation and Article 151 of the Criminal Procedure Code of the Russian Federation”.

The Law approves amendments to the RF Criminal Code introduced by the RF State Duma on September 20, 2022. The terms “mobilization”, “martial law” and “wartime” are introduced in the RF Criminal Code. Article 63 of the RF Criminal Code (“circumstances that aggravate punishment”) is supplemented with the terms “the period of mobilization and martial law” and “wartime”. In the corresponding periods, penalties are tightened: for damage or destruction of military equipment – up to five years in prison; for leaving a unit or failing to appear on time for service during mobilization and martial law – up to ten years in a colony; for non-fulfillment of the superior’s order by the subordinate, for refusal to participate in military or combat operations – up to three years of imprisonment (if such cases entailed grave consequences – from three to ten years). Also, new articles appeared in the RF Criminal Code: “Voluntary surrender” (Article 352.1; from three to ten years of imprisonment) and “Looting” (Article 356.1; up to fifteen years). A group of articles on violation of the terms of the state contract and non-fulfillment of the state defense order is introduced (Article 201.2, Article 201.3 285.6 of the RF Criminal Code)⁴⁰.

September 30 – Decree on the simplified procedure for granting citizenship of the Russian Federation to foreign citizens who have signed a contract for service in the Armed Forces of the Russian Federation. The procedure for obtaining citizenship is simplified for foreigners, as well as stateless persons who have signed a contract for military service in the Russian Armed Forces⁴¹.

³⁷ The RF Ministry of Defense explained the procedure for partial mobilization. *Rossiiskaya gazeta*. 22.09.22. Available at: <https://rg.ru/2022/09/22/minoborony-rf-dalo-raziasneniia-po-naibolee-chastym-voprosam-o-chastichnoj-mobilizacii.html>

³⁸ Defense Minister Sergei Shoigu gave a number of explanations about the partial mobilization. Channel One. News. September 21, 2022. Available at: https://www.ltv.ru/news/2022-09-21/438147-ministr_oborony_serгей_shoygu_dal_ryad_poyasneniy_naschet_chastichnoy_mobilizatsii

³⁹ The Government approved the preservation of jobs for the mobilized. *RBK*. September 22, 2022. Available at: <https://www.rbc.ru/politics/22/09/2022/632c9f649a79472f8fec02b4>

⁴⁰ Amendments to the Criminal Code regarding “mobilization” and “wartime”. What is important to know. *RBK*. September 20, 2022. Available at: <https://www.rbc.ru/politics/20/09/2022/6329a4059a794731c2e205f9>

⁴¹ Putin simplified the procedure for obtaining Russian citizenship for foreign contractors. *RBK*. September 30, 2022. Available at: <https://www.rbc.ru/politics/30/09/2022/6336fcfe9a7947f6f8308904>

End of Insert 1

October 5 – The President signed federal constitutional laws on the admission to the Russian Federation and the formation of new constituent entities within the Russian Federation – the Donetsk People’s Republic, the Lugansk People’s Republic, the Zaporozhye Oblast, the Kherson Oblast.

October 7 – amendments were made to the Labor Code aimed at regulating the relationship between an employer and an employee called up for military service on mobilization. The law establishes that during the period of mobilization, the validity of the employment contract concluded by the employee and the employer is suspended, but the period is counted as the employee’s work experience; the place of work (position) is retained for them, termination of the employment contract at the initiative of the employer is not allowed. The federal law also establishes additional labor guarantees for family members of persons called up for military service on mobilization or serving in the military under a contract.

October 8 – Defense Minister Sergei Shoigu appointed Army General S. Surovikin commander of the group of forces in the zone of the special military operation. Most experts call this appointment a landmark one, since previously the command of the group was conducted from Moscow, many decisions required long approvals, which undoubtedly influenced the course of its implementation⁴². Military expert A. Leonkov noted: “Army General Sergei Surovikin is one of the most authoritative military leaders in our army. He has extensive military experience (including in Syria). This will undoubtedly help to competently plan the course of the special military operation in Ukraine. As a matter of fact, Surovikin is always assigned to the places where it is necessary to act decisively and quickly... Now, when our grouping in Ukraine is seriously increasing, it should be headed by an experienced military leader who has undoubted authority in the troops. Surovikin is a perfect choice in this regard”⁴³.

October 10 – at a meeting with permanent members of the Security Council, the President announced the first “massive strike with high-precision long-range air, sea and land-based weapons against energy, military administration and communications facilities of Ukraine”⁴⁴. The head of state pointed out that “in the event of more attempts to stage terrorist attacks on our territory, Russia’s response will be harsh and commensurate with the threats posed to the Russian Federation. Nobody should have any doubts about that”⁴⁵.

October 19 – Decree on the introduction of martial law in the territories of the DPR, LPR, Zaporozhye and Kherson oblasts; Decree “On measures implemented in the constituent entities of the Russian Federation in connection with Presidential Decree 756, dated October 19, 2022”. According to the decrees, martial law will be introduced in four new constituent entities of the Russian Federation from October 20, 2022; the heads of all RF constituent entities will receive additional powers to make decisions on carrying out certain measures for territorial defense and civil defense, measures to protect the population and territories from natural and man-made emergencies, and powers to implement measures to meet the needs of the Armed Forces. All RF constituent entities are divided into territories with a “maximum”, “average”, “enhanced” and “basic” level of response with corresponding differences in the powers of the heads of regions. As some experts noted, “the introduction of martial law was used to put the country on a mobilization track...”, while strengthening the powers of the governors, the President actually “repeats the scheme of division of responsibility used in the fight against COVID”⁴⁶.

⁴² Stepanov A. Sergei Surovikin has been appointed Commander of the Russian joint troops in Ukraine. *Rossiiskaya gazeta*. October 9, 2022. Available at: <https://rg.ru/2022/10/09/general-bystrogo-reagirovaniia.html>

⁴³ Ibidem.

⁴⁴ Vladimir Putin’s speech at a meeting with permanent members of the Security Council. October 10, 2022. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/69568>

⁴⁵ Ibidem.

⁴⁶ Rodin I. Putin introduces Russia into a paramilitary situation. *Nezavisimaya gazeta*. October 19, 2022. Available at: https://www.ng.ru/politics/2022-10-19/3_8569_securitycouncil.html

One of the most important and difficult steps taken by the RF Supreme Commander was the decision to conduct partial mobilization adopted on September 21, 2022. According to a number of experts, with this step, Vladimir Putin “actually informed society that **the situation, though not an emergency, is difficult and requires full mobilization of all the forces of society**”⁴⁷.

“...the idea that only professional military personnel were involved in the fighting calmed society... but even those who fully supported and are supporting the special operation are worried about their loved ones who may be mobilized”⁴⁸.

Partial mobilization has become one of the most “sensitive topics for society”⁴⁹. It turned out to be “**an actual challenge to the current power vertical**”⁵⁰. At the initial stage of organizing partial mobilization a significant number of problems arose, related to informing citizens about the course and criteria of mobilization, placement of mobilized military personnel, supply of their uniforms and weapons, increase in prices for necessary equipment, returning

home of the mobilized citizens who do not meet the criteria for the priority of conscription, etc.⁵¹

Largely because of the cases of confusion, partial mobilization caused increased anxiety in society. In the first days after the announcement of partial mobilization in the media (with reference to official sources of foreign countries) reports began to appear about the second wave of emigration from Russia after February 24, 2022⁵². In some regions of the country, protests against mobilization took place, during which more than 1,000 protesters were detained⁵³.

Nevertheless, according to the official representative of the RF Ministry of Internal Affairs I. Volk, the number of participants in the protests was “insignificant”⁵⁴, this corresponds to the opinion some experts who characterized those actions as “**spontaneous outbreaks** to which the authorities promptly respond... Organized protest as a form of political reaction is hardly feasible in the current situation”⁵⁵.

The results of monitoring sociological studies conducted both at the federal (VCIOM) and regional (VolRC RAS) levels also indicate that,

⁴⁷ What the Presidential decree is about. *Nezavisimaya gazeta*. September 22, 2022. Available at: https://www.ng.ru/editorial/2022-09-22/2_8547_editorial.html

⁴⁸ About the reaction of society to the partial mobilization. *Nezavisimaya gazeta*. October 3, 2022. Available at: https://www.ng.ru/editorial/2022-10-03/2_8555_editorial.html

⁴⁹ *Argumenty nedeli*. September 27, 2022. Available at: <https://argumenti.ru/society/2022/09/791413> (V.A. Fadeev – from October 21, 2019, Advisor to the President of the Russian Federation, Chairman of the Presidential Council for the Development of Civil Society and Human Rights).

⁵⁰ Garmonenko D. Mobilization as a test for the vertical of power (opinion of A. Mukhin, Director General of the Center for Political Information). *Nezavisimaya gazeta*. September 21, 2022. Available at: https://www.ng.ru/politics/2022-09-21/1_8545_vertical.html

⁵¹ See, for example: Garmonenko D. The struggle for the truth about the special operation and mobilization unfolded within the government. *Nezavisimaya gazeta*. October 6, 2022. Available at: https://www.ng.ru/politics/2022-10-06/1_8559_administration.html

⁵² A. Atalykov (Acting Chairman of the Migration Service Committee of the Ministry of Internal Affairs of the Republic of Kazakhstan): “About 98 thousand Russians have come to Kazakhstan since September 21; 64,234 Russians have left” (source: *RBK*. September 27, 2022. Available at: <https://www.rbc.ru/politics/27/09/2022/6332a8b29a794720fabf3450>)

A. Darakhvelidze (Deputy Minister of Internal Affairs of Georgia): “In recent days, about six thousand Russian citizens have been entering Georgia daily. At the end of September, this figure was ten thousand. I should note that the number of Russian citizens entering and leaving Georgia every day has almost equaled” (source: Interfax. October 3, 2022. Available at: <https://www.interfax.ru/world/866025>).

⁵³ There are no official data on the number of protesters; however, according to estimates of some human rights organizations, 1,312 protesters were detained in 38 cities, including 468 in Moscow, 490 in Saint Petersburg (source: <https://www.kommersant.ru/doc/5571951>).

⁵⁴ *Kommersant*. September 21, 2022. Available at: <https://www.kommersant.ru/doc/5571951>

⁵⁵ About the reaction of society to the partial mobilization. *Nezavisimaya gazeta*. October 3, 2022. Available at: https://www.ng.ru/editorial/2022-10-03/2_8555_editorial.html

despite the alarming events of August – October 2022, Russian society maintains a high level of support for the work of the head of state and, in general, a positive background of emotional state.

Thus, according to VCIOM, in October 2022, the share of Russians supporting the activities of the RF President amounted to 77%, while from February 2022 (when the start of the special military operation was announced) to October 2022, the share of positive assessments of the activities of the head of state increased by 12 percentage points (from 65 to 77; *Tab. 1*).

According to the public opinion monitoring carried out by VoIRC RAS in the Vologda Oblast, over the past 12 months (from October 2021 to October 2022), the share of people who support the activities of the RF President has increased by 7 percentage points (from 52 to 59%), and since February 2022 – by 11 percentage points (from 48

to 59%; *Tab. 2, Insert 2*), and negative changes are not observed in any of the main socio-demographic groups (*Insert 2*). However, over the past 2 months (from August to October 2022), the share of positive judgments about the work of the head of state has decreased slightly (by 2 percentage points, from 61 to 59%; *Tab. 2, Insert 2*) in most (11 out of 14) socio-demographic groups (*Insert 2*).

As for the dynamics of the social mood for the period from August to October 2022, the proportion of people experiencing predominantly positive emotions decreased by 6 percentage points (from 70 to 64%; *Tab. 3, Insert 3*); however, for the entire previous period of the special operation (February – August 2022), the proportion of residents characterizing their mood as “normal, fine” remained stable (69–70%) in the majority (8 out of 14) of the main socio-demographic groups (*Insert 3*).

Table 1. Dynamics of the assessment of the RF President's activity from February to October 2022, % of respondents

Answer option	February 2022	April 2022	June 2022	August 2022	September 2022	October 2022*	Dynamics (+/-), February – October 2022
Approval	65.4	78.7	78.5	78.2	77.0	76.5	+12
Disapproval	23.9	13.5	13.4	13.0	13.8	14.0	-10

*VCIOM data as of October represent the average for three polls (October 2, 9 and 16, 2022). In September 2022, polls were held September 4th, 11th, 18th and 25th (the table shows the average data for these four polls). The data are presented on the basis of the All-Russian telephone surveys “Sputnik”. The margin of error is 2.5%.
The wording of the question: “Do you generally approve or disapprove of the activities of the President of Russia?”
Source: VCIOM. Available at: <https://wciom.ru/ratings/dejatelnost-gosudarstvennykh-institutov/>

Table 2. Dynamics of the assessment of the RF President's activity* (VoIRC RAS data), % of respondents

Population assessments	Oct. 2021	Feb. 2022	Aug. 2022	Oct. 2022	Dynamics (+/-)		
					Oct. 2021 – Oct. 2022	Oct. – Feb. 2022	Oct. – Aug. 2022
Proportion of positive assessments of the President's activity	51.9	48.0	60.9	59.0	+7	+11	-2
Proportion of negative assessments of the President's activity	33.1	32.9	21.8	23.5	-10	-9	+2

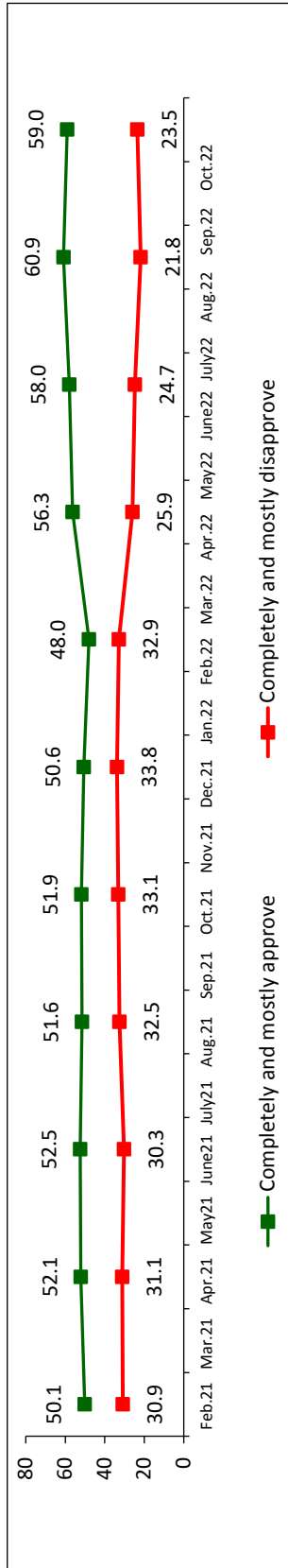
* Tables 2–3 show the changes during the survey periods, which allow us to see the dynamics of public opinion assessments for the entire period of the special military operation (February – October 2022), taking into account the events of recent months (August – October 2022). For reference, changes in public sentiment assessments over the past 12 months (October 2021 – October 2022), including four months before the special military operation on the territory of Ukraine.

Table 3. Dynamics of social mood assessments (VoIRC RAS data), % of respondents

Population assessments	Oct. 2021	Feb. 2022	Aug. 2022	Oct. 2022	Dynamics (+/-)		
					Oct. 2021 – Oct. 2022	Oct. – Feb. 2022	Oct. – Aug. 2022
Proportion of positive assessments of social mood	70.5	69.3	70.0	64.1	-6	-5	-6
Proportion of negative assessments of social mood	25.5	26.6	24.8	33.1	+8	+7	+8

Insert 2

Dynamics of assessments of the RF President's work (VoIRC RAS data), % of respondents



Proportion of positive assessments of the RF President's work by various socio-demographic groups, %

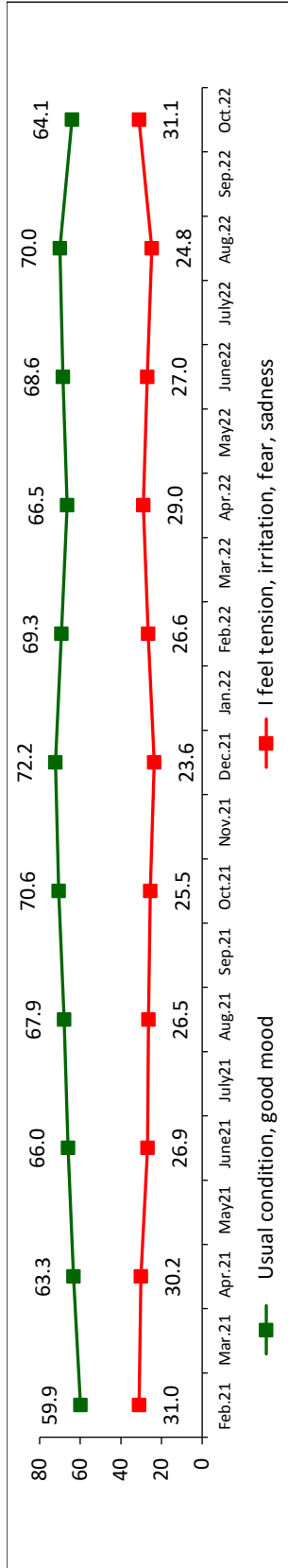
Population group	Feb. 2021	Oct. 2021	Feb. 2022	Apr. 2022	June 2022	Aug. 2022	Oct. 2022	Dynamics (+/-) for the period...	
								Feb. 2021 – Feb. 2022 (12 months)	Feb. – Aug. 2022 (7 months)
Sex									
Men	48.9	50.4	45.9	51.7	52.2	59.9	58.9	-3	+14
Women	51.0	53.2	49.7	60.1	62.7	61.8	59.1	-1	+12
Age									
Under 30	38.6	52.5	51.6	50.9	51.4	53.7	45.4	+2	+13
30–55	48.1	50.7	44.4	55.5	54.6	59.0	58.6	-4	+15
Over 55	56.9	53.2	51.0	59.4	64.6	66.2	64.6	-6	+15
Education									
Secondary and incomplete secondary	47.5	46.4	44.0	48.3	52.0	56.9	53.9	-4	+13
Secondary vocational	50.2	51.7	48.5	59.2	60.0	59.5	59.4	-2	+11
Higher and incomplete higher	52.7	57.7	54.2	63.8	62.6	67.4	64.3	+2	+13
Income group									
Bottom 20%	38.5	40.7	37.0	41.1	39.3	43.1	42.6	-2	+6
Middle 60%	53.1	52.2	50.4	57.6	61.0	64.0	63.4	-3	+14
Top 20%	63.7	65.9	56.5	63.4	67.8	63.2	63.6	-7	+7
Territory									
Vologda	44.4	42.5	38.8	48.1	49.6	52.4	50.6	-6	+14
Cherepovets	55.0	58.1	53.3	62.0	64.2	67.4	66.4	-2	+14
Districts	50.4	53.8	50.1	57.7	59.2	62.0	59.5	0	+12
Oblast	50.1	51.9	48.0	56.3	58.0	60.9	59.0	-2	+13
Total number of positive and negative changes in 14 socio-demographic groups								2 / 11	14 / 0

In February – August 2022, the level of support for the President's work increased in all socio-demographic groups, especially among people aged 30–55 (by 15 percentage points, from 44 to 59%) and over 55 (by 15 percentage points, from 51 to 66%).

In August – October 2022, in most socio-demographic groups (in 11 out of 14), there was a slight decrease in the level support for the work of the head of state, especially among people under the age of 30 (by 8 percentage points, from 53 to 45%).

Insert 3

Dynamics of social mood (VoIRC RAS data), % of respondents



Dynamics of positive assessments of social mood in various socio-demographic groups, %

Population group	Feb. 2021	Oct. 2021	Feb. 2022	Apr. 2022	June 2022	Aug. 2022	Oct. 2022	Dynamics (+/-) for the period...		
								Feb. 2021 – Feb. 2022 (12 months)	Feb. – Aug. 2022 (7 months)	Aug. – Oct. 2022 (2 months)
Sex										
Men	60.8	70.0	65.6	68.3	67.4	69.9	65.0	+5	+4	-5
Women	59.2	70.9	72.3	65.1	69.7	70.2	63.3	+13	-2	-7
Age										
Under 30	60.9	75.3	75.3	81.8	77.3	77.8	74.5	+14	+3	-3
30–55	64.4	70.8	70.7	71.1	68.8	72.0	65.2	+6	+1	-7
Over 55	54.1	68.3	65.3	55.2	65.3	64.6	58.7	+11	-1	-6
Education										
Secondary and incomplete secondary	56.2	64.1	68.7	63.0	65.8	68.5	58.9	+13	0	-10
Secondary vocational	60.9	70.4	68.3	69.8	70.5	71.0	65.8	+7	+3	-5
Higher and incomplete higher	62.7	77.1	71.5	66.9	69.7	70.8	67.5	+9	-1	-3
Income group										
Bottom 20%	44.3	60.4	60.5	61.5	58.4	55.4	50.7	+16	-5	-5
Middle 60%	60.1	70.9	68.8	64.2	70.3	73.2	65.9	+9	+4	-7
Top 20%	76.0	84.2	81.5	81.9	75.7	77.0	78.7	+6	-5	+2
Territory										
Vologda	55.8	64.0	63.2	60.2	61.0	61.5	55.7	+7	-2	-6
Cherepovets	64.4	72.6	70.8	70.1	72.8	74.6	67.9	+8	+2	-7
Districts	59.7	71.5	70.8	68.1	70.6	72.3	66.6	+11	+2	-6
Oblast	59.9	70.5	69.3	66.5	68.7	70.1	64.1	+9	+1	-6
Total number of positive and negative changes in 14 socio-demographic groups								14 / 0	7 / 6	1 / 13
Question: "What could you say about your mood in recent days?"										
Source: VoIRC RAS public opinion monitoring.										

In February – August 2022, the share of positive assessments of social mood in the Vologda Oblast as a whole remained stable (69–70%). Negative changes were noted primarily among people who, according to self-estimates of income, belong to the bottom 20% (by 5 percentage points, from 60 to 55%) and top 20% (by 5 percentage points, from 82 to 77%) residents of the oblast.

Over the past two months (August – October 2022), a decrease in the share of positive assessments of social mood has been observed in all major socio-demographic groups, except for the top 20%, especially among people with secondary and incomplete secondary education (by 10 percentage points, from 69 to 59%), women (by 7 percentage points from 70 to 63%), persons aged 30–55 (by 7 percentage points, from 72 to 65%), 60% of the middle-income strata (by 7 percentage points, from 73 to 67%), as well as among residents of Cherepovets (by 7 percentage points, from 75 to 68%).

Thus, sociological assessments help to monitor the “temperature” of society and the dynamics of social attitudes in various segments of the population. Studies conducted by Vologda Research Center of the Russian Academy of Sciences show that even despite slight fluctuations in the assessments of the President’s activities and the psychological well-being of people in August – October 2022, **since the beginning of the special operation there has been a stable emotional background** (more than 50% of positive judgments in all socio-demographic groups) **and a high level of support for the head of the state** (the share of positive assessments in 12 of the 14 main socio-demographic groups ranges from 50 to 65%).

We should also emphasize that after the partial mobilization, in conditions when society is increasingly aware that during the special military operation, Russia is opposed not by Ukraine, but by all NATO countries, and, accordingly, due to a more obvious and acute awareness of the threats to national security hanging over the country, **New features of civil society have begun to form in the Russian Federation**. And this manifests itself not just in good intentions or, as they say, “on paper”, but in the concrete deeds and actions of ordinary citizens, representatives of nonprofit organizations, businesses, and authorities.

Russian Defense Minister Sergei Shoigu noted that “a large number of volunteers come to military enlistment centers”⁵⁶. In the first days of the partial mobilization, branches of the All-Russian Popular Front for the protection of the rights of citizens called up for military service were opened in all regions of Russia. Official information channels that explain to the public any issues related to this topic have been launched (round-the-clock hotlines (“122”), official websites (“Объясняем.рф”). Public and volunteer associations have become

more active, carrying out various humanitarian actions to support Russian servicemen participating in the special military operation. Charitable organizations have promptly established round-the-clock telephone lines for psychological and legal assistance to mobilized citizens and their relatives.

The leading mass media took on an important mission. Regular coverage of events in the news, expert assessments in analytical programs, reports of war correspondents directly from the front line – all this is aimed not just at informing the population about the course of the special operation. Due to its wide representation (on TV channels, on radio, on the Internet) the media, first, create patriotically oriented psychological climate in the country, explain to the broad strata of Russian society the deep goals of both the special operation itself and the general civilizational conflict between Russia and the Collective West; second, they serve as an effective means of communication between civil society, the army and the authorities. They openly talk about the problems that arise during the conduct of hostilities, during the partial mobilization; they focus on the most urgent needs of military personnel; inform the population about guarantees and existing tools for supporting family members of mobilized citizens.

The consolidated condemnation by the Russian society of citizens (first of all, those who were previously considered to be representatives of cultural, political and entrepreneurial elites) who left the country after February 24, 2022, the low probability of mass protests, despite the difficult time, is largely the result of the activities of the media and, in particular, such political and cultural programs as “Time will show” and “Big game” (Channel One), “60 minutes” and “Evening with V. Solovyov” (“Russia 1”), Nikita Mikhalkov’s program “Besogon TV” (“Russia 1”, “Russia 24”,

⁵⁶ *RIA-novosti*. October 4, 2022. Available at: <https://ria.ru/20221004/shoygu-1821393672.html>

“Spas”), whose audience from March to October 2022 increased from about 10 to 12 million people⁵⁷.

In the tense conditions associated with the continuation of hostilities in Ukraine, the partial mobilization and the growing tension in relations with the Collective West, one of the important markers reflecting the attitude of the population toward the activities of the authorities is also the election results and voter turnout. Over the past years, based on official data from the RF Central Election Commission, we have been monitoring⁵⁸ and analyzing the results of the main federal, regional and municipal elections, while paying special attention to the turnout at the polling stations, which, in fact, reflects the attitude of people toward the elections themselves as a legitimate and democratic way of expressing the will of the people.

From September 9 to 11, 2022, against the background of the ongoing special operation on

the territory of Ukraine, another Single Voting Day took place in Russia, in which 19 RF constituent entities and 12 regional centers representing almost all federal districts of the country participated⁵⁹.

The main result of the last elections is the popular support of the United Russia party of power. Thus, at the elections of the heads of RF constituent entities, “in all 14 regions, the current governors and acting governors, representatives of United Russia or self-nominated candidates supported by this party were re-elected”⁶⁰.

“The governors who confirmed their powers showed better results than last time. And this is the result of the consensus around the president”⁶¹.

Nevertheless, we should note that voter turnout has decreased in many regions and regional centers in comparison with the previous similar elections (that is, for the period from 2017 to 2022)⁶².

⁵⁷ Source: official website of the Besogon TV project. Episode 202 “The snow will come down, and we’ll see who’s been making a mess and where” (March 18, 2022), Episode 212 “Out of the brackets” (October 7, 2022). Available at: <https://besogontv.ru/videos/>

⁵⁸ The analysis of the results of elections and referendums at various levels according to official data of the RF Central Election Commission is presented in our editorials since 2016. The monitoring analyzed the results of the RF presidential elections for 2000–2018; the elections to the State Duma of the 3rd–8th convocations (1999–2020); the results of the all-Russian vote on amendments to the Constitution (2020), as well as regional and municipal elections that were held during the Single Voting Day in 2012–2022.

⁵⁹ Elections of senior officials of RF constituent entities were held in 15 regions of Russia (in the Republic of Adygea, the head of the RF constituent entity was elected by deputies of the State Council – Khase at the suggestion of the President of the Russian Federation; therefore, this territory was not considered in our study).

Elections of deputies of legislative bodies of RF constituent entities were held in six regions.

Elections of deputies of representative bodies of municipalities of administrative centers of RF constituent entities were held in 12 regions.

Elections of deputies of representative bodies of local self-government in 125 municipal districts of Moscow were also held.

In general, the elections were held in all federal districts of Russia, except for the Crimean Federal District. Our research considered all the elections held on September 11, except for the elections in Moscow.

Remote electronic voting was provided for in eight territories: elections of heads of the Kaliningrad, Novgorod, Tomsk, Yaroslavl oblasts; elections of deputies of legislative bodies in Kursk and Pskov oblasts; elections of deputies of representative bodies of local self-government in Moscow and by-elections of the deputy of the Kaluga City Duma of the 7th convocation in single-mandate constituency number 7 (source: RF Central Election Commission. Available at: <http://www.cikrf.ru/analogue/ediny-den-golosovaniya-2022/distantionoe-elektronoe-golosovanie/>).

⁶⁰ Skorobogaty P. (2022). New consolidation: Results of the Single Voting Day. *Ekspert*, 38, p. 50.

⁶¹ Experts on the election results: The political system has successfully passed the SVD. *Rossiiskaya gazeta*. September 12, 2022. Available at: <https://rg.ru/2022/09/12/eksperty-ob-itogah-vyborov-politicheskaia-sistema-uspeshno-sdala-edg.html> (opinion of E. Sokolova, Head of the Department of Strategic Research and Forecasting at the Expert Institute of Social Research).

⁶² Here we should note that in 16 of the 18 regions, as well as in 13 of the 26 municipalities for which the election results were analyzed, the population and, among other things, voter turnout decreased during the period from 2017 to 2022. We also should not forget about the negative impact of the COVID-19 pandemic, which Russia faced mainly in 2020–2021 and which largely influenced the overall decline in the country’s population (according to official Rosstat data, the population of Russia as of January 1, 2019 and 2020 was 146.8 million people, as of January 1, 2021 – 146.2 million people, as of January 1, 2022 – 145.6 million; source: EMISS. Permanent population as of January 1. Available at: <https://showdata.gks.ru/report/278928/>).

So, in the elections of the heads of RF constituent entities, voter turnout⁶³ for the period from 2017 to 2022 decreased by an average of 2.58 percentage points in regions (from 39.29 to 36.71%, or from 6.2 to 5.5 million people; *Tab. 4, Insert 4*), by 3.27 percentage points in regional centers (from 30.47 to 27.20%, or from 1.7 to 1.5 million people; *Tab. 5, Insert 4*). Moreover, a decrease in voter turnout is noted in the majority of RF constituent entities (in 10 out of 14) and their regional centers (in 9 out of 14).

A similar trend was observed in the elections of deputies of representative bodies of municipalities: voter turnout for the period from 2017 to 2022 decreased by 3.11 percentage points (from 29.35 to 26.24%, or from 931 to 753 thousand people; *Tab. 6, Insert 5*). Moreover, voter turnout decreased in 9 out of 12 regional centers.

The decrease in turnout in the 2022 regional elections urges us pay attention to the warnings of experts, according to whom a low turnout may indicate that “the authorities have problems or do not have enough confidence”⁶⁴. However, we should note that the lower turnout at the regional-level elections, compared with the federal-level elections, is, in fact, quite a common phenomenon. Thus, in recent years, voter turnout for the Presidential election, as well as for the all-Russian vote on amendments to the Constitution in the whole country averaged 67%; for the election of deputies

Table 4. Dynamics of turnout for the elections of the heads of RF constituent entities for the period from 2017 to 2022, % of voters*

Amount of RF constituent entities in which...		Average turnout in RF constituent entities		Dynamics (+/-), 2017–2022
turnout declined	turnout increased	2017	2022	
10	4	39.29	36.71	-2.58

* More detailed data on the turnout for the 2017–2022 elections are presented in *Insert 4*.

Table 5. Dynamics of turnout for the elections of the heads of RF constituent entities in regional centers for 2017–2022, % of voters*

Amount of regional centers in which...		Average turnout in 14 regional centers		Dynamics (+/-), 2017–2022
turnout declined	turnout increased	2017	2022	
9	5	30.47	27.20	-3.27

* More detailed data on the turnout for the 2017–2022 elections are presented in *Insert 4*.

Table 6. Dynamics of turnout for the elections of deputies of representative bodies of municipalities of administrative centers of RF constituent entities for 2017–2022, % of voters*

Amount of regional centers in which...		Average turnout in 14 regional centers		Dynamics (+/-), 2017–2022
turnout declined	turnout increased	2017	2022	
9	3	29.35	26.24	-3.11

* More detailed data on the turnout for the 2017–2022 elections are presented in *Insert 4*.

of the RF State Duma – 57%, and for the election of the regional level – 42% (*Tab. 7*).

Table 7. Dynamics of turnout for the main federal and regional elections, % of voters

Election of the President of the Russian Federation / voting on amendments to the Constitution of the Russian Federation	year	2000	2004	2008	2012	2018	2020	Average for 2000–2020
	data		68.74	64.39	69.81	65.34	67.54	67.97
RF State Duma elections	year	1999	2003	2007	2011	2016	2021	Average for 1999–2021
	data		61.85	55.67	63.78	60.21	47.88	51.72
Elections of heads of RF constituent entities	year	2013	2014	2017	2018	2019	2022	Average for 2013–2022
	data		44.79	43.97	40.54	42.95	44.58	36.71

⁶³ The turnout indicator was calculated according to official data of the RF Central Election Commission as the sum of the number of “ballots issued to voters who voted early”; “the number of ballots issued to voters in the voting room” and “the number of ballots issued to voters who voted outside the voting room” as a percentage of the “number of voters”. The indicator “Number of voters” denotes “the number of voters included in the list at the end of the voting”.

⁶⁴ Garmonenko D. The government continues to win regardless of the number of voters. *Nezavisimaya gazeta*. September 11, 2022. Available at: https://www.ng.ru/politics/2022-09-11/1_8536_elections.html

Insert 4

Elections of heads of RF constituent entities (2017, 2022; results broken down by region and regional center*)

		2017				2022				Dynamics (+/-), 2022 to 2017			
Number (persons)		Turnout		Number (persons)		Turnout		Number (persons)		Turnout			
population	voters	persons	% of population	population	voters	persons	% of population	population	voters	persons	% of population	persons	% of voters
CENTRAL FEDERAL DISTRICT (TOTAL FOR 4 CONSTITUENT ENTITIES OF THE DISTRICT)													
4782475	3919678	1655602	34.62	4617178	3779071	1430286	30.98	-165297	-140607	-225316	-3.64	-225316	-4.39
TOTAL FOR 4 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT													
1794865	1410573	434451	24.21	1759429	1370785	360812	20.51	-5436	-39788	-73639	-3.70	-73639	-4.48
1. RYAZAN OBLAST													
1126739	928667	335721	29.80	1085152	884553	379726	34.99	-41587	-44114	+44005	+5.19	+44005	+6.78
RYAZAN													
537622	421460	92181	17.15	529401	416971	110873	20.94	-8221	-4489	+18692	+3.79	+18692	+4.72
2. TAMBOV OBLAST (the previous elections were held in 2020)													
1007000	835095	539500	53.57	980984	809704	468656	47.77	-26016	-25391	-70844	-5.8	-70844	-6.72
TAMBOV													
292140	245289	82703	28.31	287407	242987	78208	27.21	-4733	-2302	-4495	-1.1	-4495	-1.53
3. YAROSLAVL OBLAST													
1270736	1021588	346097	27.24	1227383	993990	264999	21.59	-43353	-27598	-81098	-5.65	-81098	-7.22
YAROSLAVL													
608079	466703	147843	24.31	593958	438043	91553	15.41	-14121	-28660	-56290	-8.9	-56290	-10.78
4. VLADIMIR OBLAST (previous elections were held in 2018; results of the 2nd round are presented)													
1378000	1134328	434284	31.52	1323659	1090824	316905	23.94	-54341	-43504	-117379	-7.58	-117379	-9.24
VLADIMIR													
357024	277121	111724	31.29	348663	272784	80178	23.00	-8681	-4337	-31546	-8.29	-31546	-10.93
VOLGA FEDERAL DISTRICT (TOTAL FOR 4 CONSTITUENT ENTITIES OF THE DISTRICT)													
5972454	4765114	2164483	36.24	5751654	4553187	1964081	34.15	-220800	-211927	-200402	-2.09	-200402	-2.29
TOTAL FOR 4 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT													
2259720	1784306	645925	28.58	2266508	1819940	591465	26.10	+6788	+35634	-54460	-2.49	-54460	-3.70
5. KIROV OBLAST													
1291684	1076750	327207	25.33	1234780	1016583	338993	27.45	-56904	-60167	+11786	+2.12	+11786	+2.96
KIROV													
501468	410024	95618	19.07	523543	419669	102739	19.62	+22075	+9645	+7121	+0.55	+7121	+1.16

Continuation of Insert 4

2017				2022				Dynamics (+/-), 2022 to 2017			
Number (persons)		Turnout		Number (persons)		Turnout		Number (persons)		Turnout	
population	voters	persons	% of population	population	voters	persons	% of population	population	voters	persons	% of voters
6. UDMURT REPUBLIC											
1516826	1208494	520795	34.33	1484460	1166781	464298	31.28	-32366	-41713	-56497	-3.05
IZHEVSK											
646277	493261	131327	20.32	645183	492230	152014	23.56	-1094	-1031	+20687	+3.24
7. SARATOV OBLAST											
2479260	1930142	1057605	42.66	2360959	1839804	988939	41.89	-118301	-90338	-68666	-0.77
SARATOV											
845300	675894	349446	41.34	818383	702831	289712	35.40	-26917	+26937	-59734	-5.94
8. REPUBLIC OF MARIJ EL											
684684	549728	258876	37.81	671455	530019	171851	25.59	-13229	-19709	-87025	-12.22
YOSHKAR-OLA											
266675	205127	69534	26.07	279399	205210	47000	16.82	+12724	+83	-22534	-9.25
NORTHWESTERN FEDERAL DISTRICT (TOTAL FOR 3 CONSTITUENT ENTITIES OF THE DISTRICT)											
2225866	1840778	615026	27.63	2216874	1821816	621012	28.01	-8992	-18962	+5986	+0.68
TOTAL FOR 3 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT											
988434	780001	221741	22.90	1004011	795311	198812	19.80	+35577	+15310	-22929	-3.10
9. NOVGOROD OBLAST											
612522	505412	143313	23.40	586129	477158	156559	26.71	-26393	-28254	+13246	+3.31
NOVGOROD											
222594	178425	43892	19.72	224861	169050	44556	19.81	+2267	-9375	+664	+0.09
10. KALININGRAD OBLAST											
986261	801351	315337	31.97	1027678	839700	323347	31.46	+41417	+38349	+8010	-0.51
KALININGRAD											
467289	390076	113302	24.25	498260	414900	99814	20.03	+30971	+24824	-13488	-4.22
11. REPUBLIC OF KARELIA											
627083	534015	156376	24.94	603067	504958	141106	23.40	-24016	-29057	-15270	-1.54
PETROZAVODSK											
278551	211500	64547	23.17	280890	211361	54442	19.38	+2339	-139	-10105	-3.79

End of Insert 4

2017				2022				Dynamics (+/-), 2022 to 2017						
Number (persons)		Turnout		Number (persons)		Turnout		Number (persons)		Turnout				
population	voters	persons	% of population	population	voters	persons	% of population	population	voters	persons	% of population			
SIBERIAN FEDERAL DISTRICT (TOTAL FOR 2 CONSTITUENT ENTITIES OF THE DISTRICT)														
2063025	1485357	496383	24.06	33.42	2050933	1739408	507329	24.74	29.17	-12092	+254051	10946	0.68	-4.25
TOTAL FOR 2 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT														
1004662	668553	175567	17.48	26.26	1007182	648134	169208	16.80	26.11	+2520	-20419	-6359	-0.68	-0.15
12. TOMSK OBLAST														
1078891	771404	198892	18.43	25.78	1068304	756779	234192	21.92	30.95	-10587	-14625	+35300	+3.49	+5.17
TOMSK														
572740	373110	72162	12.60	19.34	570776	352127	84913	14.88	24.11	-1964	-20983	+12751	+2.28	+4.77
13. REPUBLIC OF BURYATIA														
984134	713953	297491	30.23	41.67	982629	982629	273137	27.80	39.44	-1505	+268676	-24354	-2.43	-2.23
ULAN-UDE														
431922	295443	103405	23.94	35.00	436406	296007	84295	19.32	28.48	+4484	+564	-19110	-4.62	-6.52
URAL FEDERAL DISTRICT														
14. SVERDLOVSK OBLAST														
4329341	3401744	1269560	29.32	37.32	4264340	3303323	940546	22.06	28.47	-65001	-98421	-329014	-7.26	-8.85
YEKATERINBURG														
1455514	1086603	271648	18.66	25.00	1493600	1125263	264050	17.68	23.47	+36086	+38660	-7598	-0.98	-1.53
TOTAL FOR 14 RF CONSTITUENT ENTITIES														
19373161	15412671	6201054	31.47	39.29	18900979	15198805	5463254	29.13	36.71	-472182	-215866	-737800	-2.34	-2.58
TOTAL FOR 14 REGIONAL CENTERS OF RF CONSTITUENT ENTITIES														
7483195	5730036	1749332	23.59	30.47	7530730	5759433	1584347	20.93	27.20	+47535	+29397	-164985	-2.66	-3.27

* Federal districts are ranked by the number of RF constituent entities in which elections were held in 2022. Within each federal district, RF constituent entities are ranked by the change in turnout for the period from 2017 to 2022 (persons).

Insert 5

Elections of deputies of representative bodies of municipalities of administrative centers of RF constituent entities*

2017				2022				Dynamics (+/-), 2022 to 2017				
Number (persons)		Turnout		Number (persons)		Turnout		Number (persons)		Turnout		
population	voters	persons	% of population	population	voters	persons	% of population	population	voters	persons	% of population	
1991970	1521756	345480	17.34	1941800	1515950	258346	13.30	17.04	-50170	-87134	-4.04	-5.66
SIBERIAN FEDERAL DISTRICT (TOTAL FOR 4 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT)												
1. Kyzyl, Republic of Tyva (previous elections were held in 2018)												
116983	67753	34854	29.79	123280	72760	38962	31.61	53.55	+6277	+5007	+1.82	+2.11
2. Gorno-Altaysk, Altai Republic												
63295	43067	13387	21.15	64558	43291	13648	21.14	31.53	+1263	+261	-0.01	+0.45
3. Barnaul, Altai Krai												
633301	510579	101644	16.05	627789	526789	77706	12.38	14.75	-5512	+16210	-3.67	-5.16
4. Omsk, Omsk Oblast												
1178391	900357	195595	16.60	1126193	873110	128030	11.37	14.66	-52198	-27247	-5.23	-7.06
CENTRAL FEDERAL DISTRICT (TOTAL FOR 3 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT)												
1476509	1143912	304847	20.65	1466257	1126811	232095	15.83	20.60	-10252	-17101	-4.82	-6.05
5. Kursk, Kursk Oblast												
449063	349037	91890	20.46	447387	344569	81810	18.29	23.74	-1676	-4468	-2.17	-2.59
6. Tver, Tver Oblast												
419367	328351	64835	15.46	424912	323347	41321	9.72	12.78	+5545	-5004	-5.74	-6.97
7. Yaroslavl, Yaroslavl Oblast												
608079	466524	148122	24.36	593958	458895	108964	18.35	23.74	-14121	-7629	-6.01	-8.01
FAR EASTERN FEDERAL DISTRICT (TOTAL FOR 2 REGIONAL CENTERS OF THE CONSTITUENT ENTITIES OF THE DISTRICT)												
787043	577880	86729	11.02	782563	566495	72325	9.24	12.77	-4480	-11385	-1.78	-2.24
8. Petropavlovsk-Kamchatsky, Kamchatka Krai												
180454	132712	21670	12.01	181293	129711	18769	10.35	14.47	+839	-3001	-1.66	-1.86
9. Vladivostok, Primorsky Krai												
606589	445168	65059	10.73	601270	436784	53556	8.91	12.26	-5319	-8384	-1.82	-2.35
NORTHWESTERN FEDERAL DISTRICT												
10. Pskov, Pskov Oblast												
209840	165067	37825	18.03	209073	157780	33349	15.95	21.14	-767	-7287	-2.08	-1.77
NORTH CAUCASIAN FEDERAL DISTRICT												
11. Cherkessk, Karachay-Cherkess Republic												
122478	84332	61770	50.43	122579	83512	56947	46.46	68.19	+101	-820	-3.97	-5.06
VOLGA FEDERAL DISTRICT												
12. Kirov, Kirov Oblast												
501468	408430	94357	18.82	523543	416846	100293	19.16	24.06	+22075	+8416	+0.34	+0.96
TOTAL FOR 12 REGIONAL CENTERS OF RF CONSTITUENT ENTITIES												
5089308	3901377	931008	21.16	5045815	3867394	753355	18.64	26.24	-43493	-33983	-2.52	-3.11

* Federal districts are ranked by the number of RF constituent entities in which elections were held in 2022. Within each federal district, RF constituent entities are ranked by the change in turnout for the period from 2017 to 2022 (persons).

Thus, the regional and municipal elections held during the special military operation, despite the downward trend in voter turnout over the past five years, demonstrated the consolidation of society around the RF President and the party in power, **and this is especially important in the difficult foreign policy context.**

The results of the vote, as well as the trends in public opinion noted by monitoring sociological studies, suggest that, despite all the anxiety of the internal and external political situation developing around Russia, **the people perceive the events with understanding and patience, assess the activities of the head of state with hope and expect him to take further steps aimed to protect the public and national interests of the country.**

In the eight months that have passed since the beginning of the special military operation on the territory of Ukraine, Russian society has changed its understanding of the scale of the implications of the ongoing hostilities, including the nature of threats to national security; it has come to understand that in the current confrontation between Russia and the Collective West, it is impossible to win by engaging only a limited number of people who are fighting “somewhere out there”. As the President said, it is necessary to “protect our land with all the forces and means available to us”⁶⁵.

However, we cannot but agree with experts who emphasize: **“From time to time we need to call a spade a spade ... in order to advance on the front lines, we must give a decisive battle inside”**⁶⁶. In this sense, a vivid marker of the state of affairs in

the country was the process of organizing partial mobilization, which exposed a lot of “nonsense” that had existed and accumulated over a long time.

“...Unfortunately, there is enough stupidity, in fact, as, unfortunately, I repeat once again, it often happens in other areas. **But if we had not started dealing with it the way we are doing it now, we would never have seen the problems that have been accumulating there and, apparently, have been accumulating for quite a long time.** This is a good opportunity for us to deal with all these issues”⁶⁷.

Moreover, the problems that have arisen during the partial mobilization are not the first case and far from the only case when it is under the pressure of external circumstances that long-term brewing problems begin to be revealed, recognized and only then solved.

“Today the main problem is in our power potential. **But its roots go into society, in the absence of ideology, into a decomposed comfortable lifestyle, into the reality that was imposed on us after our defeat and surrender in the 1990s. We are reaping the fruits of the paradigmatic mental occupation of Russia.** Putin has already given the signal to end this, but to whom did he give it? If not direct agents of influence, then the products of this long-term sabotage ... – to representatives of the elite that developed in the turbulent 1990s”⁶⁸.

⁶⁵ Vladimir Putin’s speech at the ceremony of signing the agreements on the accession of the DPR, LPR, Zaporozhye and Kherson oblasts to Russia. Official website of the RF President. Available at: <http://www.kremlin.ru/events/president/news/69465>

⁶⁶ Dugin A. The SMO and the change of the world order. Official website of the Izborsk Club. October 11, 2022. Available at: <https://izborsk-club.ru/23426>

⁶⁷ President’s speech at a meeting with the elected heads of regions. Official website of the RF President. October 10, 2022. Available at: <http://www.kremlin.ru/events/president/news/69567>

⁶⁸ Dugin A. The SMO and the change of the world order. Official website of the Izborsk Club. October 11, 2022. Available at: <https://izborsk-club.ru/23426>

Many experts still pay attention to the existence of “ordinary nomenclature rivalry” in power, that is, to the ongoing struggle of various groups of influence in the system of public administration, in the economy, culture, in the media and virtual communication (Internet, social media) and, ultimately, in almost all spheres of life... When such “nomenclature rivalry” slows down the implementation of national development goals or the realization of public expectations, it begins to arouse questions and confusion in society and ultimately negatively affects its psychological state. This is especially evident at the present time, when the country is facing real and common threats to national security for all population groups.

“In recent days, attention to the course of the special operation and mobilization has intensified among deputies and state propagandists. It seems that the struggle for the truth is already unfolding within the government itself... Of course, there is also an element of the **usual nomenclature rivalry** for positions and titles, that is, the attention of the president. But it cannot be ruled out that the struggle of the notorious Kremlin towers is already coming out”⁶⁹.

It is premature to say that there is an active “alignment of the value system of the ruling vertical (largely formed in the period of the country’s movement in the framework of the liberal-capitalist paradigm preceding the special operation) with the goals of national development, which are based on such concepts as “sovereignty”, “social state”, “social justice”, “traditional values”⁷⁰.

“Social differentiation in our country remains monstrous: 1% of families own 70% of market family assets. It’s not just about twice as much as in the U.S.: **this gap is tearing our society apart...**

In order to avoid a catastrophe and preserve statehood, it is necessary to reduce social differentiation, to bring the gap between the 10% of the richest and the poorest from the current official 16 times (in reality, it is, clearly, much more) to 5 times like it was in the Soviet era, not more than 7 times. **But the whole liberal policy that is returning our once most socially developed country in the world to not just wild capitalism, but wild feudalism and reviving class society, directly contradicts this**⁷¹.

This is a long process; it will probably take many years. “In order to adequately and qualitatively respond to challenges and pressure, Vladimir Putin needs to show the maximum ability to successfully search... the only right decisions. The fate of the country depends on it”⁷².

⁶⁹ Garmonenko D. The struggle for the truth about the special operation and mobilization unfolded within the government. *Nezavisimaya gazeta*. October 6, 2022. Available at: https://www.ng.ru/politics/2022-10-06/1_8559_administration.html

⁷⁰ Ilyin V.A., Morev M.V. (2022). On the way toward crossing the inner Rubicon. *Economic and Social Changes: Facts, Trends, Forecast*, 15(4), 9–31

⁷¹ Delyagin M. To reduce social differentiation! *Zavtra*. October 17, 2022. Available at: https://zavtra.ru/blogs/snizit_sotcial_nuyu_differentiatciyu

⁷² Putin under pressure. *Nezavisimaya gazeta*. September 18, 2022. Available at: https://www.ng.ru/editorial/2022-09-18/2_8542_editorial.html

Too many vital issues for the country (primarily related to the military operation in Ukraine) today still remain in “limbo”. The “poisonous dogmas of Western economics: about minimizing state participation in economic life; about the “invisible hand of the market” regulating everything by itself...; about the importance and even necessity of foreign investment for the development of the national economy; about competition as an engine

of the economy and others”⁷⁴ have been too deeply ingrained in the Russian elite and bureaucracy over the past 30 years.

However, many things (trends in public opinion reflected in the results of sociological assessments, specific actions of citizens, rapid response of the authorities to problems that arose during the mobilization, active involvement of representatives of public forces in this process, etc.) suggest that the whole country is capable of mobilization in a difficult moment, including the system of public administration, which finds the strength to see and admit its mistakes. This is extremely important, because **“you can win a battle only by taking part in it and fully realizing what is happening – risks, bets, resources, options for the development of events...”**⁷⁵

“Today, it is necessary to effectively understand whether, in principle, it is possible to professionally accurately arrange and effectively deal with difficult-to-structure categories and hyper-complex problems in a short time... **it should be about holistic program-targeted mobilization socio-economic and military-technological development...** In order to adequately confront a hostile globally designed organization, **we will have to design our own organization system of the same power class within the framework of the mobilization project**”⁷³.

The special military operation reveals and forms new features of civil society in Russia, and it is quite possible that this will be the beginning of a real movement of the country to overcome the internal Rubicon in the system of interests, values, goals of the ruling circles and the whole society, which is a necessary condition for Russia to achieve full national sovereignty.

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⁷³ Skripko V. System setup: Some aspects of the mobilization strategy. *Zavtra*. September 22, 2022. Available at: https://zavtra.ru/blogs/nastrojka_sistemi

⁷⁴ Katasonov V. Ideology of competition as an economic version of Social Darwinism. *Zavtra*. October 17, 2022. Available at: https://zavtra.ru/blogs/ideologiya_konkurentcii_kak_ekonomicheskaya_versiya_sotcial-darvinizma

⁷⁵ Dugin A. Putin has proclaimed the Russian idea. *Zavtra*. October 4, 2022. Available at: https://zavtra.ru/blogs/putin_provozglasil_russkuyu_ideyu

Russia in the Epicenter of Geopolitical Turbulence: Signs of Eventual Domination



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Abstract. The paper investigates a set of factors contributing to Russia's transformation into a new world capital accumulation center in the next two to three decades. The novelty of our approach lies in the fact that we consider the current phase of global geopolitical turbulence through the prism of the capital accumulation cycles theory in order to determine the vector of future development of the world economic system. We dig into the topic by forming a comprehensive picture of Russia's potential advantages that are quite versatile. Thus, we look into the following phenomena: geographical (ice decline in the Russian Arctic; Russia evolving from a land power into a sea power; natural resources endowment), philosophical (dialectical confrontation of homogeneity and heterogeneity of the world system), historical (syndrome of false contender for the role of a world capital accumulation center; passionarity of the ethnos), political (parade of sovereignties and imperial revanchists, diffusion of the nuclear syndrome, legitimization of the struggle against political and managerial opposition), political economy (cycles of capital accumulation; world capital accumulation center; Russia's economy joining the world system of capitalism), economic (effectiveness of international economic sanctions; general-purpose technologies; industry cycles; regulatory and technology triads), demographic (demographic curse), cultural (openness of the Russian Civilization to immigrants, its civilizing experience in relation to other peoples, high civilizational absorption), military (latent and active phases of hybrid warfare; hybrid warfare paradox), factors and management effects (autonomous and authoritarian management, hegemon and leader models). This helped us to reconstruct the system of checks and balances formed around the Russian Federation in

For citation: Balatsky E.V. (2022). Russia in the epicenter of geopolitical turbulence: Signs of eventual domination. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 33–54. DOI: 10.15838/esc.2022.5.83.2

the hybrid warfare between the West and the Non-West. We deepen the analysis by providing our own interpretation of sea states and land states. The main conclusion of the research is that Russia possesses unique geopolitical advantages that allow it to successfully counteract the Collective West and eventually become a new leader of the world economic system.

Key words: geopolitical turbulence, world capital accumulation center, competition, war, world economic system.

Acknowledgment

The article was prepared within the state assignment of the RF Government to the Financial University for 2022 on the topic “Socio-economic development in the era of fundamental transformation of systems”.

Introduction

The reformatting of the global geopolitical space (GGPS), which started in 2022 following the beginning of Russia’s special military operation (SMO) in Ukraine, is in full swing. As a result of this process, a new world capital accumulation center (WCAC) should emerge as a leader among the most powerful states of the present time. Earlier we provided a detailed substantiation of the idea that currently there are two actual contenders for this role, Russia and China (Balatsky, 2022). Moreover, out of the two, Russia has better chances to become leader due to a number of circumstances. We can argue that this very issue will be a major political intrigue of the decade. Thus, the goal set in the article is to provide a comprehensive insight into the factors and circumstances that allow us to consider Russia as a future WCAC and that provide it with the opportunity to stand at the helm of the Fifth Cycle of Capital Accumulation, which is going to replace the current one.

As it was shown earlier, the ongoing geopolitical confrontation between Russia and the Collective West implies their direct clash during the unfolding Fourth (hybrid) World War (Balatsky, 2022). In the paper, we will try and answer the question about its most likely outcome.

The novelty of our approach consists in the fact that we consider the current phase of global geopolitical turbulence through the prism of the

capital accumulation cycles theory in order to determine the vector of future development of the world economic system; we disclose the topic with the help of the knowledge provided by related sciences.

Genesis of a new potential world capital accumulation center

Russia’s capabilities as a new WCAC can be perceived only in the context of the outbreak of the Fourth World War of a hybrid type. However, let us first dwell upon how legitimate it is to talk about a new WCAC as represented by Russia. The fact arouses very strong doubts. For example, today it is already clear that China, which overtook the United States in terms of GDP (PPP) by 19% in 2021, is gaining the upper hand, while Russia, whose corresponding indicator is 5.7 times less than that of China, is rather an outsider than a future leader¹. However, in this case everything is somewhat more complicated than it seems at first glance.

Suffice it to recall the historical chronology of accumulation cycles according to G. Arrighi: the First Cycle, 1560–1740, Venetian-Genoese (lasted 180 years); the Second Cycle, 1740–1870, Dutch (130 years); the Third Cycle, 1870–1970, British (100 years); the Fourth Cycle, 1970 – present day, American (≈80–85 years) (Arrighi, 2006, pp. 42–49).

¹ See: https://databankfiles.worldbank.org/data/download/GDP_PPP.pdf

The chronology shows that the First Cycle was 1.4 times longer than the Second, and the Second was 1.3 times longer than the Third. If we assume that the reduction rate for an accumulation cycle remains constant, then we can expect that the Fourth Cycle will last 72–77 years, which means that the Fifth Accumulation Cycle will start approximately in 2042–2047. Given the scale of the recent geopolitical inversion, this period may shift to an even later date – beyond 2050. Thus, we have about 30 years ahead, quite a considerable timespan by historical standards. In this regard, without going into unnecessary details, let us recall a number of important historical facts in reverse chronology.

During the Third Accumulation Cycle (1870–1970), 30–50 years before the start of the Fourth Cycle, Germany was the main contender for the role of a new WCAC instead of Great Britain: having lost the struggle for colonies, Germany had its *technological perfectionism* to set against the British power (Arrighi, 2006). This strategy made Germany the world's leading industrial state and helped it to unleash first the First and then the Second World War; but its defeat in both of them put an end to these claims, and the possibilities of becoming a new leader opened up for the United States and the USSR. Fifteen years later, the Soviet Union lost the race that had started, and the United States became the fourth WCAC in the history of the capitalist formation.

During the Second Accumulation Cycle (1740–1870), the years 1796–1815 were marked by the Napoleonic Wars, when for a quarter of a century France, which briefly became a continental empire, was quite persistent in its claims to become a new WCAC. However, in the middle of the accumulation cycle, in 1815, it finally yielded its position to Great Britain.

In the middle of the First Accumulation Cycle (1560–1740), as part of the Eighty Years' War or the so-called Dutch Revolt (1566–1648), a fierce Anglo-Spanish war (1585–1604) was waged,

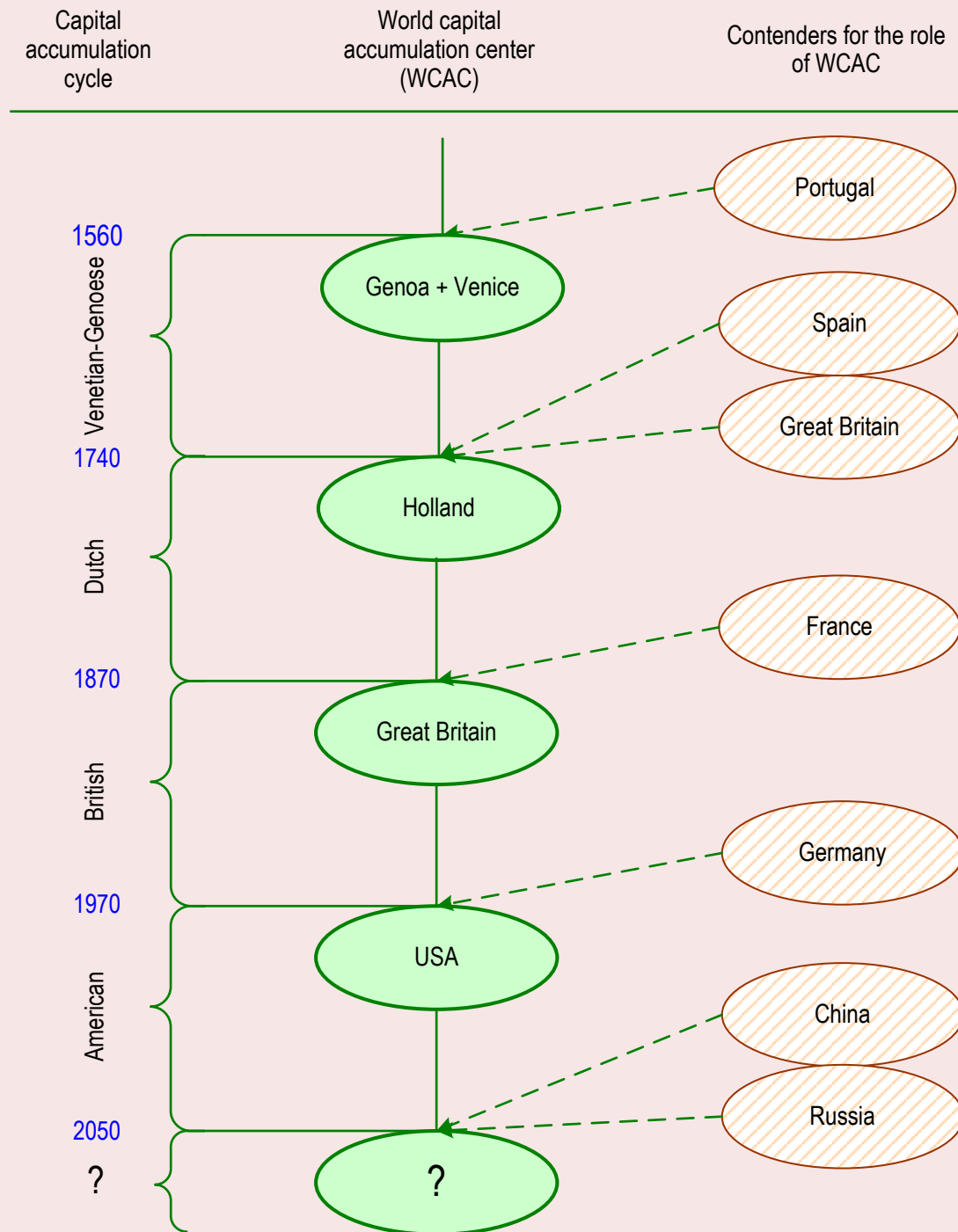
when Spain and Great Britain fought for the right to become a new WCAC. During this period, the Netherlands was under the protectorate of Spain and clearly did not claim to be at the forefront of the world system. It was only by the end of the First Accumulation Cycle that the Netherlands regained its independence, built a system of *warehouse capitalism* and created its own colonial empire with the subsequent displacement of Portugal from its overseas territories.

We can add that even Genoa and Venice, during the struggle for their hegemony, had a tough competition with Portugal, a country that in many ways surpassed these city-states. *Figure 1* shows a stylized chronology of the competition between different countries for becoming the WCAC in the world economic system.

These examples suggest an interesting pattern that can be called the *false contender syndrome*. Its essence consists in the emergence, approximately in the middle of an accumulation cycle, of a state claiming to be a new WCAC, but eventually losing its initial advantages and yielding a leading position to another country. The false contender syndrome requires a very careful approach when determining the global prospects of the world economic system. With regard to the current situation it means that 30 years before the start of the Fifth Accumulation Cycle it is premature to dismiss Russia and give the palm to China, because the situation may change dramatically over the next 20 years, as has already happened in the past. It is possible that China is a false contender today and will lose its leadership privilege in the future. Obviously, at the moment the question remains open.

We should emphasize that the false contender syndrome has a deep historical meaning and this effect itself is by no means accidental. The resulting desire of the social system to maintain an element of *secrecy* regarding the future leader is determined by the logic of intercountry competition. Thus, a contender state becomes the focus of attention

Figure 1. Stylized chart showing the competition of countries for the role of WCAC



for the current WCAC, which, using its gigantic administrative and resource capacities, is able to suppress the emerging political and economic activity in an external jurisdiction and thereby

prolong its own existence. That is why there is almost always some kind of false contender, which occupies the attention of the major players of the GGPS and thereby enables the true contender to

proceed with fewer risks and costs. At the same time, the very process of the emergence and crystallization of new players in the GGPS is largely spontaneous and unconscious: countries are fighting for their existence and are gradually enhancing their power to the level where they can claim a privileged position; the national elite becomes aware of their own global role, as a rule, only when crystallization of the new WCAC is completed.

The rise of Russia as a potential WCAC became obvious only in 2022 after the beginning of the second conflict with Ukraine; whereas in 2014, when the first conflict started, the possibility still seemed incredible. This fact confirms the position according to which the identification of a new WCAC in the context of geopolitical turbulence is a non-trivial task.

Now let us consider the logic of Russia's transformation from an outsider state that lost the Third World War (Balatsky, 2022) into a contender for the role of WCAC. The collapse of the USSR in 1991 led to the formation of a neocolonial political regime in the Russian Federation when the national government had no actual sovereignty. However, the Russian Federation retained its military potential, which still posed a threat of its political revenge. To prevent this, the United States set a strategic course for the final dismemberment of Russia, its demilitarization and transformation into a harmless raw material appendage. It must be said that the due to the desire of the United States to preserve its global hegemony the above strategy had no alternative, but the tactical mistakes made by American political circles led to precisely the opposite result.

For example, until 2014, Russia, being entirely under the patronage of the network of emissaries of the West and the United States, was steadily and very surely degenerating technologically, culturally and spiritually. We can reasonably argue that if the established trend were to continue, then by 2030 Russia would most likely either fall apart itself,

or completely lose all ability to resist American pressure from the outside. However, political architects from the United States decided to get the desired result more quickly; thus they moved on to expanding NATO eastward and unleashing military conflicts along Russia's borders. This was supposed to demand additional resources of Russia and finally weaken it. However, in their desire to achieve the goal the United States crossed the line, and in 2014 a virtually hopeless situation arose for the Russian Federation when its military base in Sevastopol was to be dismantled and a NATO (U.S.) base could be established there instead. Russia was cornered and reacted by integrating Crimea and supporting the population in the LPR and DPR. From this moment, there began the Fourth (hybrid) World War between the West, represented by the United States, and the "awakened" Russian Bear (Balatsky, 2022).

We note that modern hybrid warfare involves a *latent* and an *explicit* (active) phase. In 2014–2022, the latent phase of the war unfolded, when limited economic sanctions were imposed against Russia, and Ukraine was being prepared as a springboard for future clashes with it. At the same time, the Russian government was subjected to economic blackmail by the United States that threatened to impose "terrible" sanctions like disconnection from the international financial system and imposition of an embargo on the export of Russian energy resources. Despite this, Russia unfolded military and industrial mobilization, developed and tested new types of weapons. By February 2022, the situation in Ukraine had reached a boiling point, and Russia started a special military operation. From that moment on, the Fourth World War entered an active phase with hot spots in the LPR, the DPR and then throughout Ukraine. In response, the Collective West imposed eight packages of sanctions against Russia, the cumulative scale of which reached its historical maximum. In addition, the United States and European countries provided military aid to

Ukraine against Russia. At that time, Russia finally destroyed its system of neocolonial dependence on the West and turned into a kind of alternative civilization in the times of increased global geopolitical turbulence.

We recall that some political scientists believe, and not without reason, that the events of 2008 in Tskhinvali, followed by the recognition of the independence of South Ossetia and Abkhazia, triggered an open confrontation between Russia and the West (Dugin, 2009, p. 235). Back then, there was the first hot collision of the two poles of the GGPS. However, the point of no return had not yet been passed, as was proved by subsequent events when Russia still remained in the orbit of U.S. interests. Of course, there may be different dates of the beginning of the undeclared hybrid Fourth World War; hereinafter we will use the previously proposed date – 2014 (Balatsky, 2022). It was during this period that the reintegration of the Russian World began, and it served as the trigger for the world war. In 2014, Russia's territory extended due to the accession of Crimea, in 2022 – the Lugansk, Donetsk, Kherson and Zaporozhye oblasts; the latter circumstance finally exposes the process of *reintegration of the Russian World* and does not allow the West to accept this fact and let the matter rest.

Today we can say for sure that it was Russia and its SMO in Ukraine that launched the deglobalization of the world system, which allows us to talk about the Russia as a potential WCAC. At the same time, we emphasize once again that we are not implying any determinism. As we have shown above, in the coming years a new contender, who has not yet revealed itself as such, may emerge. Hypothetically, in 3–5 years Iran might join the club of nuclear powers and, possessing an impressive resource base, become the joker in the current MGPP. However, this scenario cannot yet be considered with a certain degree of objectivity, since it has not manifested itself sufficiently enough.

Prospects of the Fourth World War

In accordance with modern war doctrine, its goal is to rebuild the world order on the terms of the winner (Vladimirov, 2018). It is the winner in the world war that will become a new WCAC and the architect of a new global geopolitical configuration. In this regard, a reasonable question arises: is it possible for Russia to win the unfolding Fourth World War?

To answer this question, we should bear in mind that the current war is a war between the West and the Non-West. This is much broader than the confrontation between the United States and Russia. That is why the SMO triggered the formation of global coalitions – Western (USA, Australia, Canada, New Zealand, Japan, EU countries) and Non-Western (Russia, China, Iran, Turkey, Saudi Arabia, India, etc.). In this regard, from a *system-wide* perspective, the war also acquires the homogeneity/heterogeneity aspect, and therefore the victory of the West will mean the unification of the world according to the Western model, the building of a homogeneous world with the predominance of artificial rather than natural life imperatives. Such an outcome can be considered impossible due to system-wide and philosophical reasons: the world develops only in the context of heterogeneity and contradictions between different subsystems of the GGPS; otherwise, cultural and institutional unification threatens the world with total stagnation and degradation. This means that in the long run, the coalition led by Russia is likely to win. Apparently, it is only a matter of time. It is this aspect of the problem that pushes various countries to create relatively stable anti-American alliances such as Russia-Iran-China and Russia-Iran-Turkey.

The second, *resource-based*, aspect of the war is connected with the inability of the United States to control the whole world, whose dynamism is rapidly increasing – various regional conflicts are multiplying (Israel/Palestine, South Korea/North Korea, Catalonia/Spain, Scotland/England, Serbia/

Kosovo, Taiwan/China, Poland/Germany, etc.). At the same time, on the one hand, the number of participants in *the parade of sovereignties* – Russia, Iran, North Korea, India, China, Turkey, etc. – is growing; on the other hand, the same is taking place with *the parade of imperial revanchists* (Turkey as the former Ottoman Empire, Iran as the Achaemenid Empire, China as the Sinitic Empire, the Russian Federation as the former Russian Empire, Poland as the former Polish-Lithuanian Commonwealth, etc.). Almost all these processes unfold in the Eastern Hemisphere, in Eurasia. The United States and the Collective West do not have enough resources to effectively manage these movements; therefore, they will get out of control, which will mean the weakening of the anti-Russian coalition and the defeat of the United States in the current hybrid war. The multitude of issues all over the planet today, six months after the start of the SMO in Ukraine, leads to the waning of the interest of the world community in this event against the background of even more significant conflicts (for example, China/Taiwan).

The third, *intrasystem*, aspect of the war is related to Russia's geo-economic advantages over Western countries. Thus, the West's expectations of Russia's early defeat in Ukraine have failed, as well as their hopes regarding the growth of popular discontent in Russia and the subsequent overthrow of its supreme power. Russia is slowly but surely conducting offensive actions on the Ukrainian front; there has been an obvious popular consolidation inside the country; a significant part of the people are filled with patriotic sentiment; import substitution is expanding; the production that was previously abandoned is being restored, and the impact of trade sanctions on the population has turned out to be mostly insignificant. In the future, these processes may transform into Russia's technological and economic breakthrough, which will finally put to rest all the hopes of its possible defeat.

Moreover, the intrasystem factor has another important dimension: the SMO proved to be extremely helpful in the internal political struggle and is actively used to *mop up* the political and managerial *opposition*. Under ordinary, peaceful conditions, a harsh purge of managerial personnel can be looked upon as an undemocratic maneuver on the part of the authorities that has no ample grounds and may be disapproved by the people; whereas under military conditions, on the contrary, this purge is perceived positively at almost all levels of public life. Given that purges help dismantle the Western network of emissaries inside Russia and increase the effectiveness of economic administration, we can argue that the country is already gaining the upper hand in the hybrid war at this stage.

To what has been said, we can add one more point, which is not quite obvious: Russia does not need a quick victory in the SMO; this contradicts its strategic interests. The fact is that the main problem of the Russian Federation in the previous 32 years was the presence of a restraining effect of the economy on the part of the Western network of emissaries – the so-called *fifth column*. In this sense, the SMO screens and legitimizes the fight against this phenomenon, and since this struggle is of a long-term nature, military actions have to be long enough to have time to completely clean up hostile management networks inside the country before the struggle ends. In peacetime, it is difficult to find an excuse for personnel purges, and in any case this will not be welcomed by the broad strata of the population; martial law radically changes the situation. This is one of the modern *paradoxes of hybrid warfare* – the longer military clashes last, the more purifying is their effect in the internal economic space of the country. So far, the SMO is working in favor of Russia.

We cannot but mention another aspect of the events. The West is gradually raising the stakes in the Russian-Ukrainian conflict (supplying

increasingly heavy weapons to Ukraine; turning a blind eye on the bombing of nuclear power plants, etc.), while Russia does not respond to provocations and refrains from destructive military strikes.

Of course, all this does not mean a final verdict regarding Russia's victory in the SMO, even more so in the Fourth World War, and its transformation into the WCAC, but it makes the scenario under consideration very likely.

Prerequisites for the transformation of Russia into the Fifth World Capital Accumulation Center

Previously, some advantages of Russia, allowing it to claim the role of the WCAC, have already been considered (Balatsky, 2022); thus, we will now focus on relatively new facts and aspects of this problem. However, we note beforehand that here and further we substantiate the thesis of *the monocentricity of the GGPS* as opposed to the doctrine of *multipolarity*. The latter should be considered a false or at least outdated theoretical construction. A certain *semblance of multipolarity* arises only during periods of geopolitical turbulence, when the former WCAC weakens, and other states that have gained strength begin to claim this role for themselves. However, this is a kind of *transitional period* in the existence of the GGPS, which sooner or later ends with the emergence of a new WCAC. Given the scale of geopolitical processes, this transition period may last for several decades, but this does not change the essence of the monocentric model according to which the GGPS is organized.

When considering the factors contributing to the country's transformation into a WCAC, we emphasize that the growth rates of GDP and other national economic parameters in this context do not matter; they acquire a certain meaning only when the necessary conditions of *the scale and location* of the country are met.

The presence of passionarity. Using the shrewd terminology of L.N. Gumilyov, we can assert that in order for a country to transform into a new WCAC, its people must have a certain critical

amount of *passionarity* that is manifested in readiness to participate in hot conflicts in order to preserve their cultural identity and civilization (Gumilyov, 2016). The experience of the SMO shows that Russia is ready for the highest (human) sacrifices, while other potential centers have not yet shown themselves in this capacity. For example, on January 3, 2020, as a result of a U.S. missile strike on Baghdad, the commander of the Al-Quds special forces of the Islamic Revolutionary Guards Corps, General Qasem Soleimani, was killed; the strike was carried out by order of American President Donald Trump. Taking into account the fact that Qasem Suleimani was considered the second person in the military and political leadership of Iran, this U.S. action was an undisguised sabotage and political provocation. Although Iranian President Hassan Rouhani promised that "Iran and other countries in the region will take revenge on America", and Iran's Supreme Leader Ayatollah Ali Khamenei promised "severe revenge" in response to the murder of an Iranian commander², there was no retaliatory action on the part of Iran. Something similar took place when the Speaker of the U.S. House of Representatives Nancy Pelosi made a provocative visit to Taiwan on August 2, 2022. The PRC regarded this visit as a violation of its own sovereignty, Chinese Foreign Minister Wang Yi said that Beijing "will never leave room" for division and interference by external forces, regardless of how the United States "condones Taiwan's independence"; Chinese ambassador to Washington Qin Gang stressed that Beijing's response will be powerful and strong, the Chinese Foreign Ministry confirmed that "the United States will pay the price in case of damage to China's security interests", and the representative of the Chinese Ministry of Defense Tan Kefei promised that "the Chinese

² See: <https://www.rbc.ru/politics/03/01/2020/5e0ede4b9a7947639df8729c?>; <https://tass.ru/mezhdunarodnaya-panorama/7460997>; <https://rg.ru/2020/01/16/obratnaia-storona-operacii-likvidacii-pochemu-ssha-ubili-kasema-sulejmani.html>

military will never sit idly by and, of course, will take decisive measures to prevent any interference by external forces and separatist plots about “Taiwan independence”, and resolutely defend national sovereignty and territorial integrity”³. However, there were no retaliatory actions on the part of the PRC, apart from the subsequent demonstrative military exercises around Taiwan.

Consistency of economic systems. Earlier we noted (Balatsky, 2014) that already on the eve of the Second World War, the USSR was potentially an alternative WCAC, but its socialist system denied the very concept and existence of capital on its territory; therefore it could not fundamentally take on a mission of managing global capital flows. Today, Russia has capitalism, which allows it to operate on a global scale without fundamental institutional inconsistencies with other countries. In addition, commodity deficit and poverty that were typical of the USSR have been overcome in the Russian Federation today; besides, modern technology and climate warming allow it to use its entire territory with an unprecedented level of efficiency⁴. We can say that the institutional, economic, technological and climatic changes that have taken place since the middle of the 20th century act in favor of Russia and provide it with those advantages that are unprecedented by all historical standards. For example, currently Russia is engaged in full-fledged development of Siberia and Arctic regions; it is now that the agenda regarding Russian overland transit (the Great Silk Road) and the Northern Sea Route is coming to the fore once again. More and more such opportunities are opening up.

No less important is the fact that today Russia’s sovereign government can liquidate the “economy with a one-way hole” when there has been a negative

capital balance for 30 years. To understand the scale of the economic potential of this measure alone, we will illustrate it by providing some figures. According to available estimates, the total volume of Russia’s losses from the withdrawal of direct investments to Western countries for 2007–2020 alone is almost 600 billion US dollars (Gusev, Shiryayev, 2021). In 2020, the share of net gross fixed capital accumulation (net of its retirement) in the country amounted to 21.9%⁵. This means that the investment multiplier for the Russian economy during this period was 4.6. Consequently, according to rough calculations, the volume of investments Russia has lost over 14 years could produce an increase in Russian GDP equal to 2.7 trillion US dollars. If we take into account the exchange rate of the ruble at the end of 2020 (73.8 rubles/USD), we will get almost 200 trillion rubles of Russia’s “lost” GDP. In 2020, the volume of Russia’s GDP at current prices amounted to 106.6 trillion rubles, which is almost two times less than its lost volume. In other words, if Russia had managed to prevent the export of capital in the form of direct investments alone for 2007–2020, then its GDP would have been three times its current value⁶. World experience shows that export regulation policies have been successfully implemented in countries of late industrialization (for example, in South Korea). Thus, only stemming the outflow of capital from Russia will allow its natural accumulation to be restored and promote further dynamic development of the national economy.

⁵ See Rosstat data (<https://rosstat.gov.ru/>).

⁶ Let us explain that in this case, the total value of the “lost” GDP should not be translated into an average annual measurement by dividing it by 14 years. This is due to the fact that for simplicity of calculation, a simple summation of “lost” investments was carried out with their subsequent conversion into “lost” GDP, whereas in fact each annual portion of investments would have provided an increase in GDP over many years. In other words, in this case, the fact is taken into account that investments do not give a one-time effect of production growth during the year, but an annual and reproducible from year to year effect of stimulating production. A more accurate calculation provides even more impressive figures, but here the lower bound of the corresponding estimate is taken.

³ See: <https://www.rbc.ru/politics/03/08/2022/62e91a819a794747582ae47b>; https://lenta.ru/brief/2022/08/02/pelosi_taiwan/

⁴ Today, the reasons why the ice in the Russian part of the Arctic is melting faster than in the U.S. part have already been established. Available at: <https://ria.ru/20190424/1553012341.html>. For more details see: (Ivanov et al., 2019).

The 21st century will witness amazing changes in the world order, including the situation regarding different types of states. One of the traditional postulates of geopolitics is the division of all states and cultures into two types – land and sea. This is of primary importance, since sea civilizations based on navigation, as a rule, have a market-based economic system and tend to a liberal-democratic way in politics, whereas land-based, on the contrary, prefer a non-market (planned or partially planned) economy and undemocratic (authoritarian) forms of society (Dugin, 2010, p. 246). However, going back to Halford Mackinder, the division of all peoples into two types – nomads of the land (land robbers) and nomads of the sea (sea pirates) – is not operational (Mackinder, 1904). This is due to the lack of simple and well-verifiable criteria for attributing a state to one of two types of civilization; this can be determined only with a certain degree of conditionality based on qualitative characteristics. Nevertheless, according to this largely heuristic methodology, all known WCACs can be attributed to refined sea powers; this indicates the presence of advantages of the country's maritime orientation. However, now the situation is radically changing.

For example, China, which has been in the shadow of the developed Western states for several centuries, cannot be unambiguously attributed either to the sea or to the land type of cultures. This has become especially evident in the last decade,

when the PRC has demonstrated incredible success in creating and expanding its naval fleet, which allows the country to activate 40% of its external borders. Russia has also been primarily a land state throughout its previous history, but today, with the launch of the Northern Sea Route, it is turning into a sea power, especially if we take into account its unique (monopoly) position in the market of nuclear icebreakers. Thus, excluding access to the Arctic Ocean, the share of the country's sea borders is 31.5%, which is less than that of China, whereas with the use of this transport corridor, Russia will be ahead of the United States (*Tab. 1*).

Let us assume that if the share of the maritime border of a state is more than 50% of its entire length, it is considered a sea power; otherwise, it is a land power. Then the PRC still remains a land power, and the Russian Federation changes its status from land to sea power. In any case, if earlier sea transportation was the most profitable in economic terms, then with the development of high-speed railway lines, this advantage is being lost at an increasing rate. In this regard, the ongoing convergence of economic systems of different countries under the influence of technological and climatic changes removes land-sea contradictions and equalizes the chances of Russia and China in comparison with the United States and other Western countries to dominate in the GGPS; the potential of the Russian Federation is seen as the most impressive.

Table 1. Length of the state borders of the USA, Russia and China, km

Length of the state border	Country		
	USA*	China	Russia
Total	32141	36957	60932
Sea	19924	14500	38807
Land	12217	22457	22125
Share of the sea border in its total length, %	62.0	39.2	63.7

* Excluding Alaska, Hawaii and Puerto Rico.
 Compiled with the use of: <https://tourisminchina.ru/granitsa-kitaya/>; https://translated.turbopages.org/proxy_u/en-ru.ru.fe6ad038-6307758b-b081c5a6-74722d776562/https/web.archive.org/web/20170313051914/http://www.rosgranitsa.ru/node/2636; https://ru.wikipedia.org/wiki/%D0%93%D0%B5%D0%BE%D0%B3%D1%80%D0%B0%D1%84%D0%B8%D1%8F_%D0%A1%D0%A8%D0%90

Availability of natural resources. Today, the world is facing the depletion of natural resources, so we can argue that a new WCAC should have a huge resource potential. The trend toward globalization of the WCAC, described in (Balatsky, 2014), implies not only the enlargement of the territory of the leading country, but also its resource base. In this regard, Russia has an absolutely unique position. Thus, according to the portal *247wallst.com*, Russia tops the rating of the world's ten most resource-rich countries and is far ahead of them (*Tab. 2*); resources with a narrow application or low cost are not taken into account in the rating⁷.

Table 2 shows that in terms of its natural reserves, Russia is ahead of the next country in the rating, the United States, by 1.7 times, and the third state in the list, Saudi Arabia, by 2.2 times. This is exactly the advantage that the WCAC should have in the new geopolitical reality. Such large-scale natural resources that Russia possesses allow it to function successfully in self-sufficiency mode even under a complete blockade by the West.

We recall that the brewing global resource crisis has led to a rearrangement of basic economic values: the primacy of natural resources and the secondary

nature of technology have become obvious (Balatsky, 2022). Under these conditions, Russia's position in the context of the Fourth World War becomes, if not unambiguously advantageous, then quite competitive.

At one time Giovanni Arrighi noticed the alternation of *extensive* and *intensive* types of development of the world system during the formation of capital accumulation cycles. Thus, the expansion of the world economy was carried out under the Genoese-Venetian and British capital accumulation regimes, and its geographical consolidation – under the Dutch and American regimes (Arrighi, 2006, p. 41). According to this pattern, the next cycle should again become extensive, but the current stage of exhaustion of redistributive opportunities within the framework of the GGPS inevitably transforms the existing mechanism. Let us explain what has been said.

The coastal cities of Italy – Genoa and Venice – sought to subordinate *trade communications* to ensure their market monopoly. At that stage, the control of trade routes was quite enough to solve the task. However, Great Britain already had to intensify its market expansion by conquering raw

Table 2. The world's most resource-rich countries, 2021

Country	Resources, trillion USD	Relative to Russia, %
Russia	75.7	100.0
USA	45.0	59.4
Saudi Arabia	34.4	45.3
Canada	33.2	43.9
Iran	27.3	36.0
China	23.0	30.4
Brazil	21.8	28.9
Australia	19.9	26.3
Iraq	15.9	21.0
Venezuela	14.3	18.9
The West Coalition	98.1	129.6
(USA + Canada + Australia)	150.3	166.4
Non-West Coalition	95.3	125.8

Compiled according to: <https://247wallst.com/special-report/2012/04/18/the-worlds-most-resource-rich-countries/>

⁷ The above rating does not take into account the arable land and fresh water reserves of the countries due to the uncertainty of the price of these goods. Taking into account these resources, Russia will further improve its resource position.

material bases, which required control of overseas territories, which the Italian city-states did not do. Accordingly, Holland expanded and strengthened the trade network and its grip on it, while the United States did the same with regard to trade and information networks, sales markets, raw materials and production niches, including labor resources. In this regard, the question arises: what should be the dominance model of a new WCAC?

Apparently, the next cycle will be a mixture of extensive and intensive types of development, which is achievable only with the unique Russian potential. Currently Russia is reintegrating its former territories, which sooner or later will end with at least partial (under certain conditions) inclusion of Belarus, Ukraine and even Kazakhstan in its zone of interests; it can possibly involve Armenia and Georgia as well. In any case, as A.G. Dugin pointed out, “the CIS is the pit of the coming empire” (Dugin, 2009, p. 233). Regardless of the final configuration of the recreated empire, this will provide an additional scale effect required for the phase of extensive development of the WCAC; other countries do not have such an advantage. Moreover, Russia is already deploying global transport projects – the Northern Sea Route, the Great Silk Road, the Trans-Siberian Railway. Most likely, all future transport lines will be more dense and high-tech, which automatically ensures a phase of intensive development of the WCAC. No other country has such capabilities; this fact makes Russia’s position absolutely unique when the extensive and intensive components of the accumulation cycle are implemented mainly on the territory of the country itself and do not directly enter into antagonistic contradictions with the interests of other countries.

Already today, the parade of sovereignties in many African states led to the fact that European powers, mainly France, have lost important resource deposits. In the future, we can expect a strengthening of the emerging trend. This means that all countries

will have to rely on their own resource base to a greater extent than before, which again brings Russia to the forefront. If we compare the resource potential of the Non-West coalition represented by Russia, Iran and China, it is 1.3 times greater than the potential of the West coalition represented by the USA-Canada-Australia geopolitical arc (see Tab. 2). This confirms that in the new geopolitical configuration, the West coalition will be far from paramount importance. All this again makes the victory in the Fourth World War of the Non-West coalition, in which Russia plays a key role, much more likely than the victory of the West coalition.

Ineffectiveness of economic sanctions against Russia. As mentioned earlier, an attempt to “punish” Russia for its actions in Ukraine was expressed in the adoption of eight packages of sanctions, but their political effectiveness turned out to be zero, and the economic effectiveness remains doubtful. The 2014–2021 period of sanctions against Russia is now widely known as the “vegetarian stage”, and subsequent events – the “sanctions tsunami” (Timofeev, 2022). Nevertheless, Moscow managed to avoid the economic catastrophe that the Collective West was counting on. For example, the May forecast of the RF Ministry of Economic Development assumed a drop in production in 2022 by 7.8%, inflation rates of 17.5%, a drop in real incomes by 6.8%, and unemployment rate at 6.7%, while the August forecast predicted the following figures: 4.2, 13.4, 2.8 and 4.8%, respectively⁸. Regardless of how accurate these figures are, it is revealing that the expected sanctions shock is not increasing, but weakening over time; therefore, the Russian economy is still coping with unprecedented economic pressure from the West. Thus, we can argue that the resistance of the Russian economy to international sanctions and its resistance to external influences turned out to be quite high.

⁸ See: <https://www.vedomosti.ru/economics/articles/2022/08/16/936321-minek-prognoz-rublya>

At the same time, sanctions against Russia had a reverse vector – a negative impact on the well-being in Western countries. Thus, due to the SMO and its accompanying events, inflation pressure on the world economy has increased: problems with the supplies of grain, fertilizers and energy carriers have provoked a sharp increase in their prices. For example, in the United States, consumer prices increased by 9.1% on an average annual basis in June 2022, which was the highest in the last 40 years; food prices in the country rose by 10.4%, and gasoline prices – by almost 60%. In the EU at the same time, inflation reached 9.6% per annum, in the euro area – 8.6%. This is 4–5 times higher than the 2% target indicator set by the European Central Bank. At the same time, the growth of consumer prices in Germany according to the Eurostat methodology was 8.2%, in the UK – 9.4%, and in Lithuania and Estonia – 20.5 and 22%, respectively⁹. Against this background, by mid-May 2022, Moscow's oil revenues increased by 50% compared to the beginning of the year¹⁰.

These figures indicate that the unfolding economic war was not as terrible for Russia and not as painless for the West as originally envisaged. In the future, these assessments may change, but it is already quite clear that Russia and the West can exist without each other, but it is equally uncomfortable for both sides.

The impact of the cycle of general-purpose technologies. Today, the term *general-purpose technologies* (GPTs) has already become widely recognized; it denotes technologies that are applicable in many sectors of the national economy, have the ability to improve in different directions, have various usage options and possess technological

complementarity (Bresnahan, Trajtenberg, 1995). Revealing the specifics of dissemination of these technologies, S.A. Tolkachev and A.Yu. Teplyakov put forward the industry cycles concept (ICC) for GPTs (Tolkachev, Teplyakov, 2019a; Tolkachev, Teplyakov, 2019b; Tolkachev, Teplyakov, 2020; Tolkachev, Teplyakov, 2022), according to which GPTs follow the rules of the technology and regulatory triads “production – transport – information” and “protectionism – free trade – globalism”, which are largely synchronized in time.

Identification of industry cycles over a time interval of 250 years allowed us to establish that in 2010 their new round began in the form of a qualitatively new stage of production of means of production (production of equipment): industrial Internet, additive and nanobiotechnologies, nanoelectronics, nanophotonics, nanomaterials, virtual and augmented reality, etc. (Tolkachev, Teplyakov, 2022); this stage is accompanied by the transition of most countries to a policy of protectionism; the onset of the phase of advanced development of vehicle production is approximately in the 2040s. Indeed, recent years have been marked by trade wars between the United States and China, partly between the United States and the European Union; moreover, the West has tried to exclude a number of countries (Russia, Iran, North Korea, Venezuela, etc.) from the world trade market. However, it is precisely these circumstances that play in Russia's favor. The policy of protectionism is extremely beneficial for Russia, since it allows protecting the national producer, and the country's engineering sector needs to be recreated on a new basis. This line is gradually beginning to be implemented, and by 2030–2035, most likely, it will have reached its peak. However, as already mentioned, it is during this period that the contender countries for the role of WCAC will be on the home straight. And at this very time Russia should launch the second phase of the industry cycle in the form of widespread expansion of

⁹ See: <https://www.rbc.ru/economics/22/07/2022/62d84de39a79478f87860522>; <https://zaim.com/poleznye-sovety/sravnenie-stavok/inflyatsiya-v-rossii-i-v-mire-v-godu-demonstriruet/>; <https://www.rbc.ru/economics/22/07/2022/62d84de39a79478f87860522>

¹⁰ See: <https://inosmi.ru/20220614/eksport-254536396.html>

transport networks. It is then that we can expect the full-fledged establishment of the country's transport communications system and receive a colossal economic effect on this basis, which should be the final step toward the status of WCAC. During this period, protectionism will be replaced by free-trading, which will allow Russia to fully realize the advantages of its existing technological economies of scale¹¹ (Balatsky, Yurevich, 2020) and thereby turn into a global transport hub. In the future, the country will already build an advanced communications production sector with its subsequent expansion across its own territory and nearby areas. Although this process may begin in 2060–2065, it is at this time that Russia can be expected to trigger globalization of the world communication market¹². Thus, the technological and regulatory patterns in the development of the world economy are still in favor of the Russian Federation.

Summing up, we can say Russia has sufficient military potential (weapons, officers' tactical experience and soldiers' combat training) and moral and psychological readiness (passionarity) to protect its right to exist; today its national economy is ready to restrain the impact of international sanctions and continue moving forward; the availability of its own gigantic natural resources base and

¹¹ We recall that the presence of technological economies of scale suggests that the increase in the capital-to-weight ratio of national production should lead to an accelerated increase in labor productivity (Balatsky, Yurevich, 2020, p. 48). It is noteworthy that this effect is a rare phenomenon and not many countries rely on it. In Russia, it is expressed extremely vividly and acts as its major economic advantage.

¹² We should note that the ICC has not yet been brought to its mature state, and therefore its authors proceed from the approximate constancy of the duration of the industry cycle (Tolkachev, Teplyakov, 2022). At the same time, as has been repeatedly noted, the cycles of capital accumulation are decreasing over time. It is quite obvious that these two cycles should be synchronized and a certain compression ratio should also be typical of the industry cycles of GPTs. This problem is not difficult to solve: the complete congruence of the two types of cycles takes place for the British accumulation cycle; in the future, starting from 1970, their duration should be approximately equal.

institutional framework attracting global capital allows the country to successfully move toward its mature phase of development with subsequent transformation into the fifth WCAC. The beginning of the first phase of the new GPTs cycle with its inherent protectionist regulatory policy will contribute to the realization of the task of Russian dominance in the GGPS.

The struggle for the status of a new world capital accumulation center: Russia vs China

If we consider Russia's right to claim the status of a future WCAC to be sufficiently justified, then now is the time to compare its potential with the potential of China, another contender for the this position.

The main thing that needs to be understood in this matter is which country objectively has more chances to become a world leader. To do this, it is enough to consider the key advantages of Russia over China, leaving aside issues that are either already well known (Balatsky, 2014), or are of no fundamental importance. In this regard, we will focus on two aspects of the geopolitical competition between the two countries.

China's demographic curse. There is no doubt that China has become a leading country and, being an economic giant, seeks to strengthen its position. However, the country has very ancient specifics that hinder these ambitious plans. So, China has always been a country with a huge and population whose density is very high. Moreover, as already noted, the Celestial Empire is still the only country for the entire existence of mankind, which explicitly regulated the birth rate and restrained the demographic factor (Diamond, 2008, p. 496; Popov, 2002). However, today this practice has been discontinued and the demographic genie of the PRC has been let out of the bottle again. What does this mean in terms of the WCAC status?

China's huge population contributes to the fact that even at the current peak of its power the country's per capita GDP (PPP) for 2021 is 1.7

times less than that of Russia, and 3.6 times less than that of the United States¹³. It means that in order to achieve an average level of material well-being of its population comparable to Russia, China must increase its GDP by another 70%, and to achieve the level of the United States – by 260%. Formally, it is impossible, but the problem is that at the current stage of human development, the planet simply cannot withstand the 3–4-fold growth in Chinese GDP. But even without reaching this level, the PRC will not be able to become a WCAC, because it must provide its population with the most comfortable living conditions and thereby serve as a kind of standard for other countries. For example, for many decades, the high standard of living of the average U.S. citizen has made the American model of economy and politics the most advanced and worthy of imitation in the eyes of the whole world. China will no longer be able to achieve this result in the foreseeable future, and therefore its position as WCAC turns out to be largely illusory.

Regarding the difficulty of the growth of Chinese GDP by 3.5 times, it is sufficient to indicate some of the consequences of the country's rapid economic growth: between 1972 and 1997, the Yellow River dried up in the lower reaches 20 times, and the waterless period increased from ten days in 1988 to 230 days in 1997 (Diamond, 2008, pp. 502–503); in 1998, 240 million people suffered from flooding (Diamond, 2008, p. 504); the average level of lead in the blood of Chinese urban residents is almost twice the level considered dangerously high worldwide and poses a threat to the mental development of children (Diamond, 2008, p. 508); due to deforestation, soil erosion and drought caused by human industrial activity, dust storms occur more often: for example, from 300 BC to 1950 they hit northwest China on average once in 31 years, in 1950–1990 – once in 20 months, and after 1990 – annually (Diamond, 2008, p. 509).

¹³ See: <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>

But, as J. Diamond points out, China shares the same planet, oceans and atmosphere with the whole world (Diamond, 2008, p. 494); therefore, the environmental damage caused by China will be global and will affect everyone. It can be assumed that new technologies will significantly alleviate the man-induced impact of the PRC on nature and thereby reduce the degree of environmental problems, but this issue remains open.

It can be said that by planting a demographic time bomb under itself the Celestial Empire exhausted its economic opportunities long before its rise. Now the huge population of China prevents it from becoming a leader in the formation of an exemplary lifestyle. Russia does not have this problem – it needs to increase its current relatively small GDP by 2.1 times in order to reach the level of the United States. With the available reserves of natural resources, favorable circumstances and effective public administration, the Russian Federation can do this painlessly within 12–15 years.

Cultural closeness of China and openness of Russia. Russia and China form two opposite civilizations – open and closed. There are well-known cultural factors in relation to China: the complexity of the language and its fundamental difference from European languages; living together in crowded communities in a limited space; a strictly defined Mongoloid anthropological type of a representative of the Chinese ethnic group. It is not surprising that these properties of the Chinese civilization do not allow it to integrate heterogeneous masses of newcomers into its environment. As a result, there is a kind of civilizational *rejection effect*, when even a European who knows Mandarin, history, customs and culture of China perfectly well, who has lived in the country for many decades, still cannot become Chinese – regardless of the desire of the immigrant and the local population. This is fundamentally different from the integration capabilities of the United

States, naturalization in which requires a European to know a similar and relatively simple language, understandable history and similar logic of thinking. Already these circumstances call into question the possibility of China replacing the United States as the next WCAC.

Russia, on the contrary, is characterized by *high civilizational absorption*, when people of completely different nationalities and peoples, coming to Russia, on the one hand, voluntarily and quite easily get into the spirit of the Russian culture and begin to consider themselves Russians, and on the other hand, they are perceived as such by the local population. The whole history of the Russian civilization is full of similar examples. Today it is difficult to imagine Russia without a representative of the Negroid race, Abram Petrovich Hannibal, Alexander Pushkin's great-grandfather, who was a military engineer and taught military affairs in Russian military educational institutions; it is even more difficult to do this without Pushkin himself – although he retained the external ancestral signs of his great-grandfather, this did not prevent him from standing at the origins of Russian literature. It is impossible to imagine Russia without its great travelers – Vitus Jonassen Bering, a Dane by origin, Ivan Fedorovich Kruzenshtern, a sailor of Swedish-German origin, Nikolai Mikhailovich Przhevalsky, a geographer and naturalist of Polish origin, etc. It is impossible to imagine the country without the creator of the History of the Russian State Nikolai Mikhailovich Karamzin from the Tatar family of Kara-Murza, and without the poet Gavriil Romanovich Derzhavin with the same national roots as Karamzin. And such examples are numerous, because this is the very essence of the Russian civilization.

Nothing has fundamentally changed in Russia today. The national and confessional polymorphism of Russian civilization not only continues to be appealing to foreigners, but also strengthens this appeal. It is not surprising that the American film

actor Steven Seagal, who is a Buddhist, received Russian citizenship and sincerely considers himself Russian¹⁴, and his son Dominic Seagal is going to live in Russia on a permanent basis¹⁵. The American-Russian mixed martial arts fighter Jeffrey Monson went even further in this regard: he not only received Russian citizenship and moved to live in Russia, but also renounced American citizenship in order to fulfill the duties of a deputy of the Krasnogorsk City Duma¹⁶. And again, we can provide numerous similar examples.

Thus, when we compare Russian and Chinese cultural systems in terms of the possibilities of involving citizens of other countries and regions into their orbit, we can state their incompatibility: a Chinese can become a Russian, while a Russian cannot become a Chinese; most immigrants of different nationalities can become Russians, but not Chinese. This is an important obstacle to the transformation of the PRC into a WCAC.

In the context of what has been said, we cannot but touch upon the question of the time factor and the timeliness of certain events. For example, regarding China, we can say for sure that it joined the race for world leadership too late. If it had managed to launch unprecedented economic growth 30–40 years earlier (not in the 1980s, but, for example, in 1950), then it would have been able to lift its demographic curse (there were no physical restrictions on expanding production at that time) and provide itself with the necessary volume of GDP; now it is either impossible, or extremely difficult to implement. The same can be said about Russia: if it had entered into direct conflict with the West in the 2000s or even in the 2010s, it would have obviously lost; at that time, the situation inside the

¹⁴ See: https://tsargrad.tv/articles/neizvestnyj-stiven-sigal-evrej-mongol-drug-putina_33174

¹⁵ See: https://www.popcornnews.ru/news/hochu-pereehat-syn-stivena-sigala-vyskazalsya-o-rossii_id295579_a157

¹⁶ See: <https://24smi.org/celebrity/1767-dzheff-monson.html>

country had not yet “matured” either economically or psychologically, and the West was monolithic. It was only in 2020 that a fundamental split between the Democratic and Republican parties emerged within the United States, and the unity of the West began to weaken. Similarly, 20 years ago it was hard to imagine that successful residents of developed Western countries, including the United States, would take Russian citizenship and move to live in Russia. All these circumstances bring to the fore the *doctrine of the conquest of time*; according to this doctrine, history is the sum of waves of different periods, and the art of politics consists in the ability to take into account the order of events and the ability to catch the most convenient moment in time when constructing the future (Devyatov, 2020, p. 72). According to this doctrine, any process is a wave with three important aspects: *chronos* (wave amplitude), *cyclos* (frequency) and *kairos* (phase of the wave with maximum energy of realization) (Devyatov, 2020, p. 71). The ability to catch a moment of luck (*kairos*) allows you to enter the opening window of opportunity (Devyatov, 2020, p. 72). From this viewpoint, China has missed its *kairos*, while Russia is still quite successfully fitting into the opening window of new opportunities.

A new geopolitical configuration in the Fifth Accumulation Cycle

Discussing the possibilities of turning Russia into a WCAC, it is necessary to understand the specifics of the country’s dominance in the Fifth Accumulation Cycle. If we consider whether Russia can achieve the same level of hegemony in the upcoming accumulation cycle as the United States in the current one, the answer will be unequivocally negative. It is impossible!

Let us explain what has been said.

The current type of management of the world economic system by the United States can be characterized as purely authoritarian or even *autonomously authoritarian*. The current WCAC lives in its own world, completely ignores the interests of others and solves problems by pushing through its

own agenda. It seems unrealistic to recreate such a system of world governance in the new conditions. Resources are largely exhausted, and direct armed conflicts are becoming more and more disastrous for their participants. Therefore, the future WCAC will most likely already be based not so much on the *hegemon model* as on the *leader model*. And this option looks quite feasible for Russia.

Today, the contours of the future capitalist system are actively discussed in the scientific literature. In particular, over the past 20 years, the focus of discussions on competition between liberal and coordinated market economies has gradually shifted to analyzing “dependent market economies” and “market economies penetrated by the state” (Yakovlev, 2021a). At the same time, most analysts believe that the response to the challenges facing global capitalism is possible only through cooperation between leading states based on the ability of their elites to limit their claims (Yakovlev, 2021b).

A more in-depth analysis shows that among all countries there is a cluster of seven states (Denmark, Norway, Sweden, Finland, Iceland, Switzerland and the Netherlands) that top the life satisfaction index (happiness index) and at the same time are leaders in the integral index of the quality of life, civic culture and institutional effectiveness; At the same time, the U.S. lagging behind the Seven has been increasing over time (Polterovich, 2022a).

Today, economic systems are usually divided into *liberal* and *coordinated* markets, social systems – into institutions of *shareholder capitalism* and *stakeholder capitalism*, and political systems – into *majoritarian* and *consensus democracies*. In each pair, the first type of systems relies mainly on competitive mechanisms, and the second – on mechanisms of cooperation. A thorough analysis shows that the achievements of the Seven are based on collaborative advantages, which are understood as the dominance of cooperation mechanisms in the economic, social and political spheres (Polterovich, 2022b).

This clearly sets the starting point for the future of the WCAC. Its *dominance model* is likely to be based not on *the hegemon triangle* (Fig. 2), as was typical of the United States, but on *the leader triangle* (Fig. 3).

We should note that Zbigniew Brzeziński can be considered the ideologist of the need to move from the hegemon model to the leader model; he made very clear statements in this regard. In particular, he wrote: “Imperial stability has historically depended on skilled domination, superior military organization, and – ultimately most important – political passivity on the part of dominated peoples against their less numerous but more assertive dominators” (Brzeziński, 2007, p. 204). Today, the submissiveness of “third” countries is a thing of the past.

The hegemon triangle is based on the “power – monopoly – superprofits” chain, which assumes a closed circuit of three interrelated processes: ensuring *the power* of the hegemon state over the entire world economic system to maintain its *monopoly* in all the most important markets – economic and political; using monopoly to manage market imbalances, prices and, as a consequence, *the rate of profit*, which ultimately, helps to make *superprofits*; spending the received superprofits on preserving and strengthening its power over the world system. Today, the United States continues to act within the framework of this model: ignoring the political interests of other countries, total control over the market of high technology, drugs, weapons, etc.; financing any operations to preserve American

Figure 2. The hegemon triangle

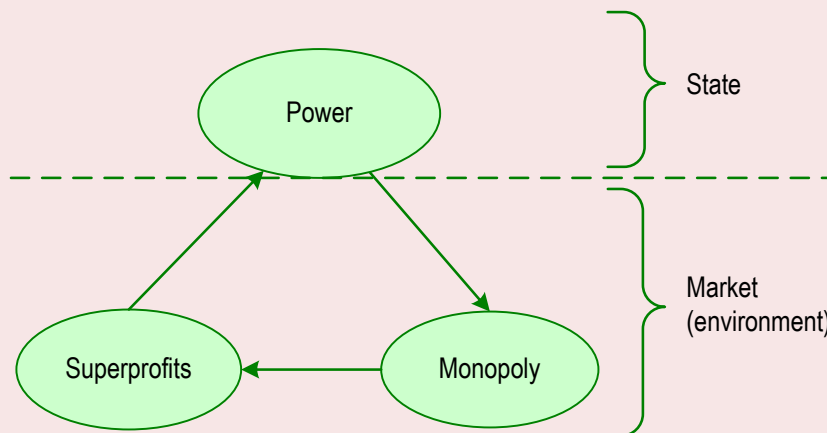
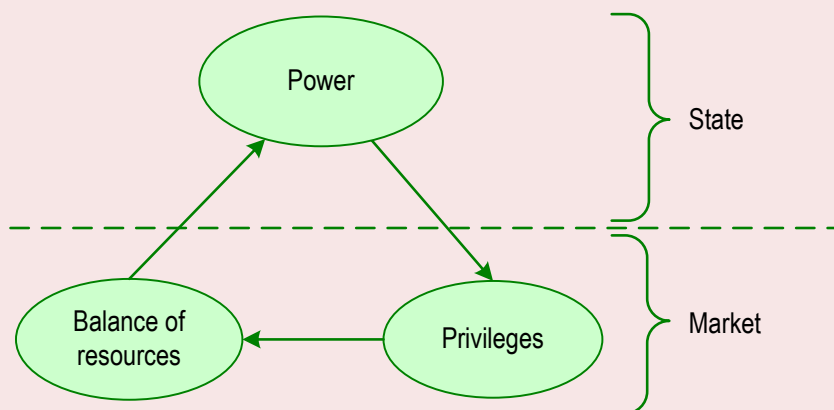


Figure 3. The leader triangle



political power on the territory of the entire planet. However, back in the first decade of the 21st century, Brzeziński expressed his concern about this: “Even the world’s paramount superpower can go badly astray and endanger its own primacy if its strategy is misguided and its understanding of the world is faulty” (Brzeziński, 2007, p. 12). He also emphasized the following truth: “No longer is military power, reinforced by economic prowess and exercised by superior elite pursuing a sophisticated strategy, sufficient to sustain imperial domination. In the past, power to control exceeded power to destroy. It took less effort and cost to govern a million people than to kill a million people. Today, the opposite is true: power to destroy exceeds the power to control” (Brzeziński, 2007, p. 214).

Today, the diffusion of the nuclear syndrome is unfolding in the world – the club of nuclear powers is at the start of a rapid expansion. Today, the United States, pursuing a strategy of Pacific confrontation with China, has included Australia in its orbit, which now is going to become the owner of a fleet with nuclear weapons produced on its territory. Thus, in 2021, the United States, the UK and Australia announced the establishment of a trilateral defense security alliance, known as AUKUS (an acronym formed from the names of its members: Australia, United Kingdom, United States), within which the Australian Navy will be able to build nuclear submarines for the first time¹⁷. Strengthening its position against China and North Korea, the United States is ready to agree that Japan and South Korea possess nuclear weapons¹⁸. As a response to this escalation of the situation, the President of Belarus A.G. Lukashenko announced the re-equipment of the country’s aircraft so that they could carry nuclear charges¹⁹; given that Belarus and Russia

are members of the Union State, such actions are considered completely legitimate. At the same time, not only Iran, but now Turkey and Saudi Arabia have joined the nuclear weapons race. As a response to the proposed expansion of NATO at the expense of Sweden and Finland²⁰, Russia intends to establish military bases in the Latin American triangle of Nicaragua – Cuba – Venezuela in close proximity to the United States²¹. All these events require different relations between the superpowers, their mutual respect and a different system of managing world economic processes.

In such circumstances, it is unlikely that the United States will be able to maintain its hegemony. “What once took centuries now takes a decade; what took a decade now happens in a single year. The paramountcy of any power will henceforth come under mounting pressure for adaptation, alteration and eventual abolition” (Brzeziński, 2007, p. 206). To avoid a senseless catastrophe, Brzeziński urged the U.S. leadership to switch to a leadership model: “... the only way to exercise leadership is through subtle indirection and consensual rule” (Brzeziński, 2007, p. 205).

The leader triangle is based on the chain “power – privileges – balance of resources”, which assumes a closed circuit of three interrelated processes: ensuring the *power* of the leader state over the world economic system to maintain its privileged position in all the most important markets – economic and political; the use of *privileges* to maintain the balance of resources, which ultimately allows the implementation of uninterrupted economic activity of the country; *balanced use of resources* is the basis for preserving and strengthening the power of the leading state over the world system. Privileges in the

¹⁷ See: <https://hightech.fm/2021/09/24/aucus>

¹⁸ See: <https://rg.ru/2017/09/10/ssha-prigrozili-kitaiuiadernym-vooruzheniem-iaponii-i-iuzhnoj-korei.html>

¹⁹ See: <https://www.rbc.ru/politics/26/08/2022/630894409a7947e9ee51723a>

²⁰ See: https://tass.ru/mezhdunarodnaya-panorama/15576669?utm_source=yandex.ru&utm_medium=organic&utm_campaign=yandex.ru&utm_referrer=yandex.ru

²¹ See: <https://ria.ru/20220204/nikaragua-1771098369.html>

market mean one of the leading (but not necessarily the first) places of the state in the market if there are other participants in it – unlike a monopoly, where all other participants are eliminated. The balance of resources means the sufficiency of vital natural and other resources for the successful (normal) operation of the leader economy, which is the key to the stability of its world power and influence. Ensuring the power of the leader is achieved not by purely forceful pressure on the participants of the GGPS, as in the hegemon triangle, but due to the objective geopolitical superiority of the country.

Brzeziński gave quite a sufficient description of the leader model: “To lead, America must not only be sensitive to global realities. It must also be socially attractive” (Brzeziński, 2007, p. 198). “Global leadership now must be accompanied by a social consciousness, a readiness to compromise regarding some aspects of one’s own sovereignty, a cultural appeal with more than just hedonistic content, and a genuine respect for the diversity of human traditions and values” (Brzeziński, 2007, p. 214).

If we proceed from the fact that the future WCAC should act within the framework of the model not of a hegemon, but of a leader, then Russia’s prospects in this capacity seem quite realistic: Russia will almost certainly not be able to create a hegemon triangle, but it could create a leader triangle. Considering that in the past the Russian Empire acted as “Europe’s gendarme”, we can assume its broader powers in the Fifth Cycle of Accumulation – as a world gendarme or, in modern terms, coordinator and peacemaker of the global political system.

Thus, according to all available signs, in the Fifth Cycle of Accumulation, *a more sparing regime* of world governance by the WCAC should be implemented, based on greater equality and respect for the participants of the GGPS, consensual restraint of economic growth by all countries, their more responsible demographic and environmental behavior. Russia is quite suitable for this role.

Conclusion

We have brought together heterogeneous factors that influence possible future dominance of the Russian Federation as the Fifth WCAC. These are *geographical* phenomena (ice decline in the Russian Arctic, Russia evolving from a land power into a sea power; natural resources endowment), *philosophical* (dialectical confrontation of homogeneity and heterogeneity of the world system), *historical* (syndrome of false contender for the role of a world capital accumulation center; passionarity of the ethnos), *political* (parade of sovereignties and imperial revanchists, diffusion of the nuclear syndrome, legitimization of the struggle against political and managerial opposition), *political economy* (cycles of capital accumulation; world capital accumulation center; Russia’s economy joining the world system of capitalism), *economic* (effectiveness of international economic sanctions; general-purpose technologies; industry cycles; regulatory and technology triads), *demographic* (demographic curse), *cultural* (openness of the Russian Civilization to immigrants, its civilizing experience in relation to other peoples, high civilizational absorption), *military* (latent and active phases of hybrid warfare; hybrid warfare paradox) factors and management effects (autonomous and authoritarian management, hegemon and leader models).

With such a set of global advantages, Russia not only has every chance of becoming the Fifth WCAC, but is almost “doomed” to take this place. At the same time, one should remember Brzeziński’s warning: “Leadership is partly a matter of character, partly intellect, partly organization, and partly what Machiavelli called “fortuna” – the mysterious interaction of fate and chance” (Brzeziński, 2007, p. 13). In this regard, there is no predetermination in the future of Russia and there cannot be – much will depend on the subjective factor (the capacity of the power elite, the readiness of the masses for a new role of the country, the timeliness of necessary actions, etc.).

Today, the SMO in Ukraine is going on extremely slowly, and there is practically no change in the governing personnel. The mistakes accumulated during this time, the indecision of the authorities, their lack of a clear idea of the image of a future Russia – all this causes a feeling of dissatisfaction and anxiety in the masses. However, here we can only say that only six months have passed since the beginning of Russia's existence as a sovereign state, starting from February 24, 2022; over such short period it is difficult to expect any miracles. Even with the assumption that in wartime one year is counted as three years, it is still too early to draw conclusions about Russia's readiness or unwillingness to become a new WCAC. The architecture and content of the Russian Civilization, which allow the country to realize its potencies of the new center of the world, are beyond the scope of this article.

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Received August 30, 2022.

FOREIGN EXPERIENCE

DOI: 10.15838/esc.2022.5.83.3
UDC 332.1(075.8), LBC 65.6(4Fra)
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The French Economy between the COVID-19 Pandemic and a New Geopolitical Situation: Relapsing into the Crisis or Overcoming It?



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Abstract. The French economy, while still recovering from the COVID-19 crisis, is currently dealing with special problems that have emerged due to the new geopolitical situation. Signs of weakness in the French economy at the beginning of the year may turn into an actual recession in 2023. The latest forecasts are particularly pessimistic in this regard. Since Russia has terminated its oil and gas deliveries after the sanctions imposed by the European Union, the French economy is at risk of serious inflation issues. Delivery interruptions can have significant negative consequences for France primarily due to their indirect impact resulting from the influence on its neighbor, Germany. The inflation that has hit the French economy and other economies of the European Unions is a kind of inflation caused by deficit rather than excessive demand. The French government, which spent considerable amount of money to protect people and businesses during the COVID-19 crisis, is faced with the need to provide significant assistance again. Both fiscal and monetary policy will be disrupted. A sharp increase in public debt is also expected. France has encountered an unprecedented economic situation, when the rules of a market economy seem powerless in the face of incoming problems. Economic planning, similar to the one that was used from 1946 to the end of the 1960s, probably represents the best opportunity for the French economy to adapt to the consequences of the new geopolitical situation.

Key words: inflation, shortage, growth, uncertainty, household expenses, administrative expenses, “at all costs” policy.

For citation: Sapir J. (2022). The French economy between the COVID-19 pandemic and a new geopolitical situation: Relapsing into the crisis or overcoming it? *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 55–76. DOI: 10.15838/esc.2022.5.83.3

Introduction

By the end of the first half of 2022, the French economy was at a crossroads. Moving toward recovery from the various shocks caused by COVID-19 and pandemic-related restrictions, it now faces the consequences of the situation in Ukraine and the interaction of sanctions and counter-sanctions, in other words, the economic consequences of restructuring international trade and what has been called globalization. The latter has already been the subject of much criticism (Sapir, 2009a). Today, however, globalization is seriously threatened by the formation of two opposing blocs in the world¹. In this context, the French economy is experiencing significant exogenous shocks in both its growth and inflation. They are already recognized at the highest level, for example by the Bank of France² or the National Institute of Statistics and Economic Studies (INSEE)³. Undoubtedly, these shocks have the potential to disrupt the French economy.

But beyond that, the French economy is still struggling with the aftermath of the 2008–2010 crisis (Streeck, 2018), after which it became crippled. The economy has never fully overcome the consequences (Sapir, 2009b). Thus, the problems it faces and will face even more by the end of 2022 cannot be attributed solely to external shocks.

But many economists and ministry officials in charge of economics and finance tend both to minimize the impact of these external shocks and to overlook that they are hitting the economy that has been changed due to the COVID-19 crisis. They tend to ignore that the problems caused by

the new geopolitical situation⁴ have also been part of the structural dynamics of the French economy in recent years. This explains, at least in part, the limited and incomplete nature of the answers that economists and officials intend to give to the problems facing the French economy. In a situation where production is partially limited by supply, the classical Keynesian answer, while necessary⁵, is insufficient. The inflation affecting the French economy, as well as all European Union economies, is a form of inflation caused by scarcity, rather than excess demand. Fighting this type of inflation requires a different type of policy than traditional monetary policy.

In a situation of uncertainty, it is also inappropriate to rely on the functioning of a market economy. Forms of planning along the lines of what was implemented in France from the late 1940s to the late 1960s would have been much more appropriate to the challenges facing the French economy.

Conditions for economic recovery after the recession caused by COVID-19

At the end of 2021, the French economy entered the path of a relatively rapid economic recovery after the recession caused by the COVID-19 pandemic⁶. However, there are important questions that remain unresolved. Thus, GDP growth slowed markedly (-0.2% in Q1 2022 vs +0.5% in Q4 2021) due to

¹ Lukyanov F.A. Why the West has failed to get the rest of the world on board to support its confrontation with Russia. Available at: <https://eng.globalaffairs.ru/articles/why-the-west-failed/>

² Available at: <https://publications.banque-france.fr/projections-macroeconomiques-juin-2022>

³ Available at: <https://www.insee.fr/fr/statistiques/6468527>

⁴ Kammer A., Azour J., Aemro Selassie A., Goldfajn I., Rhee C. Comment la guerre en Ukraine se répercute dans toutes les régions du monde. Available at: <https://www.imf.org/fr/Blogs/Articles/2022/03/15/blog-how-war-in-ukraine-is-reverberating-across-worlds-regions-031522>

⁵ Allègre G., Geerolf F., Timbeau X. Inflation en Europe: les conséquences sociales de la guerre en Ukraine. Available at: <https://www.ofce.sciences-po.fr/blog/inflation-en-europe-les-consequences-sociales-de-la-guerre-en-ukraine/>

⁶ A good approach to the methodology needed to analyze these exogenous shocks can be found in: Dauvin M., Sampognaro R. (2021). Le modèle “mixte”: un outil d'évaluation du choc de la Covid-19”. *Revue de l'OFCE*, 2(172), 219–241.

falling domestic demand: household consumption declined sharply (-1.3% after +0.6%), investment growth, in other words, gross fixed capital formation (GFCF) declined slightly (+0.2% after +0.3%). Thus, final domestic demand, not tied to stocks, fell -0.5% in the first quarter of 2021 after a change of +0.4% in the previous quarter⁷. This posed a problem, as France was hit harder by the COVID-19 recession than many of its neighbors (Sapir, 2021). The semiannual results, while showing a slight improvement, did not allay concerns about growth. The latter recovered in the second quarter of 2022 (+0.5%), but the forecast, which seems optimistic to us, should slow to +0.2% in the third quarter and 0.0% in the fourth quarter⁸.

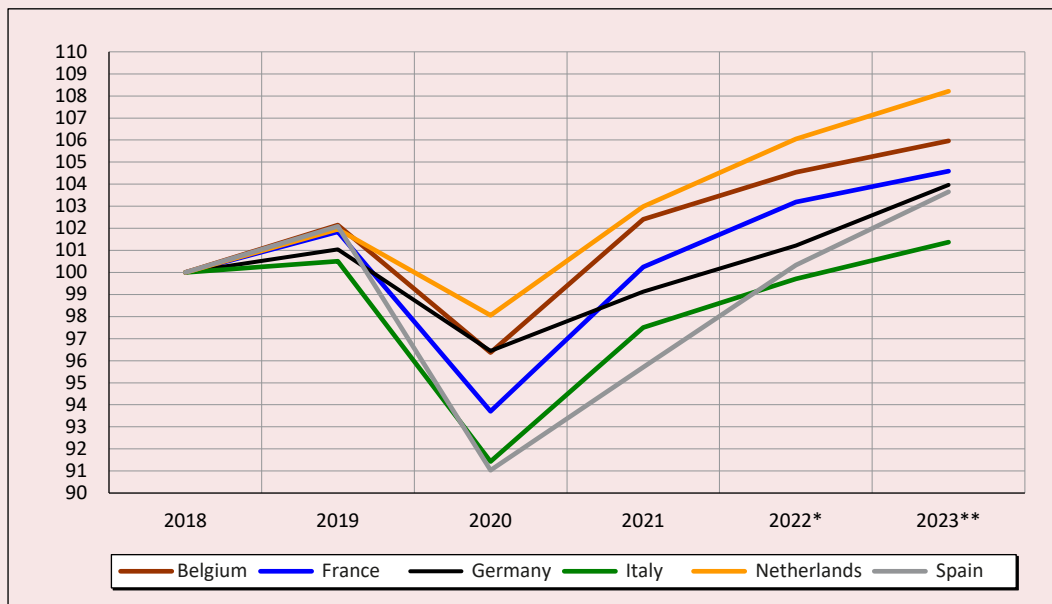
In 2020, France's economy was much more shaken than that of some neighboring countries. The depression caused by complete and partial isolation in 2020 and early 2021 was stronger

in France than in Germany, Belgium, or the Netherlands, but relatively weaker than in Spain and Italy (Fig. 1).

We should note that France lies between the countries hit hard by this depression, such as Italy and Spain, and the countries that are much less affected (Germany and the Netherlands). The measures taken by the government, in particular the "at all costs" principle, which favored mass support for workers, certainly made it possible for France to limit the negative impact of COVID-19 on the economy, but at a high cost to the state budget. Therefore, we should pay attention to two points:

- on the one hand, the total weight of debt in GDP is much higher than the EU average, even if it remains much lower than that of Italy;
- on the other hand, the support was provided mainly by non-monetary measures and not directly at the expense of the budget (Tab. 1).

Figure 1. Development of Europe's largest economies during the COVID-19 crisis, % (2018 – 100%)



Source: FMI, *World Economic Outlook*, April 2022.

* Forecasts

** Assessments

⁷ Available at: <https://www.insee.fr/fr/statistiques/6526900>

⁸ Available at: <https://www.insee.fr/fr/statistiques/6539677>

Table 1. Volume of state support in 2020, % of GDP

	Fiscal measures	Monetary measures	Overall effect	Fiscal measures, % of total
EU	3.8	6.8	10.6	35.9
France	7.7	15.8	23.5	32.9
Germany	11.0	27.8	38.9	28.4
Italy	6.8	35.5	42.3	16.1
Spain	4.1	14.4	18.6	22.2
Austria	8.6	2.4	11.0	78.0
Belgium	7.2	11.9	19.1	37.7
Finland	3.0	7.0	10.0	29.9
Non EU				
UK	16.3	16.1	32.4	50.2
USA	16.7	2.4	19.2	87.3

Source: IMF.

Table 2. Dynamics of expenses (broken down by quarter), %

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
GDP	-5.7	-13.7	19.4	-1.4	0.2	1.0	3.2	0.4	-0.2			
Household consumption expenditures	-5.5	-11.5	19.0	-5.6	0.2	1.2	5.8	0.3	-1.5			
Total government consumption	-3.5	-11.7	18.4	-0.6	-0.2	-0.1	3.3	0.4	0.2			

Source: INSEE.

The consequences of this mode of support became apparent in 2021 and early 2022. The indebtedness of small and medium-sized enterprises increased, which entailed new ways of support.

At the end of each period of self-isolation, especially in the third quarter of 2020, household consumption recovered. This was positively influenced by the economic measures taken by the government as part of the so-called “at all costs” policy (*Tab. 2*). At the end of 2021, the Minister of Public Accounts, working under the Minister of Finance, estimated the costs caused by COVID-19 at 170–200 billion euros⁹.

However, the decline in household consumption in the first quarter of 2022 (-1.5% after +0.3%) indicates an unsustainable recovery in activity. Gross disposable household income in current euros

declined in the first quarter of 2022 (-0.5% after +1.9%). An analysis of the sources of household income shows that, in particular, social payments fell sharply in the first quarter of 2022 (-1.5% after +2.7%). This is the result of a mechanical leeway of “inflation compensation” payments to households at the end of 2021.

The decrease in consumption was partially offset by the January 2021 increase in basic pensions and a sharp increase in sick leave due to the Omicron variant. In addition, fiscal charges increased sharply (+3.6% after -0.5%).

Wage growth for household members slowed slightly (+1.0% after +1.3%): wage employment continued to increase (+0.3% after +0.4%), but average per capita wages declined slightly (+0.7% after +0.9%) due, in part, to an increase in sick leave¹⁰.

⁹ Available at: <https://www.20minutes.fr/economie/3133535-20210926-crise-covid-19-coute-entre-170-200-milliards-euros-etat>

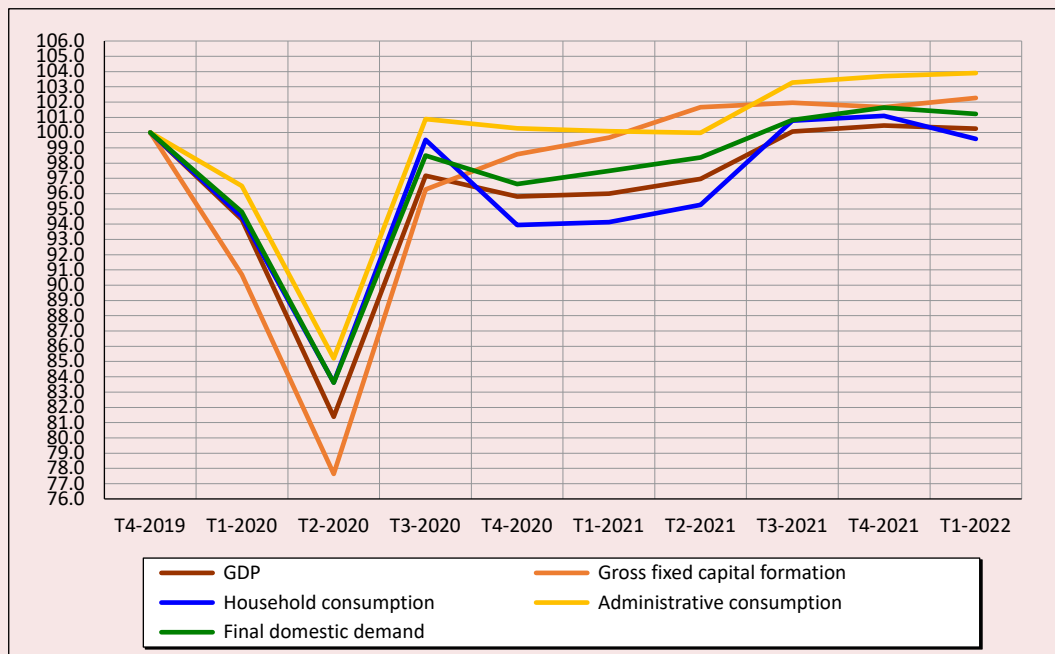
¹⁰ INSEE, *Informations Rapides*, 137, 31 mai 2022.

Thus, household consumption declined, especially for vehicles (-2.3% after -0.9%), other manufactured goods (-2.1% after -0.6%), and hotel and restaurant services (-3.9% after -0.9%). Consequently, household consumption in the first quarter of 2022 remained below the level it reached in the fourth quarter of 2019 (Fig. 2, Tab. 3). If final domestic demand exceeds the level of the fourth quarter of 2019, it will be due to the measures taken to prevent consumption from declining too much from the fall of 2020 to early summer of 2021.

However, it should be noted that support measures did not cover part of the population, especially people with the lowest incomes and the self-employed (private entrepreneurs). Assistance was mainly provided to the employed population.

It is worth noting that the slowdown in the recovery of investment growth is associated with both a decline in public investment and stagnation since the third quarter of 2021 of investment by households and non-financial companies (Fig. 3).

Figure 2. Macroeconomic indicators, % (the fourth quarter of 2019 – 100%)



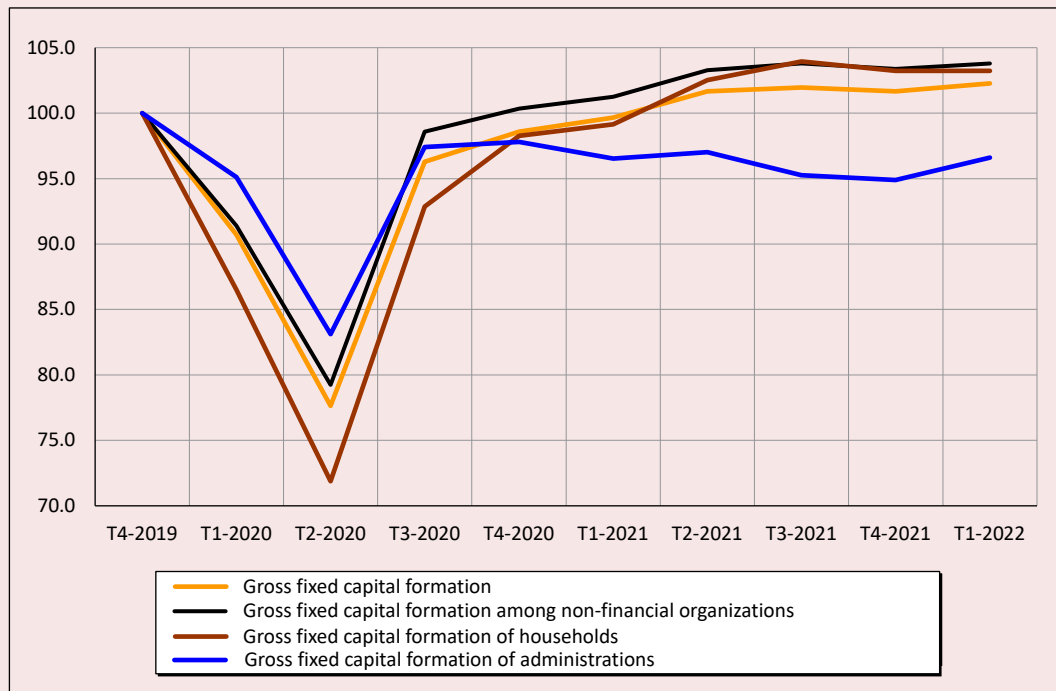
Source: INSEE and CEMI.

Table 3. Final demand components dynamics (the fourth quarter of 2019 – 100%)

	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022
GDP	100.0	94.3	81.4	97.2	95.8	96.0	97.0	100.1	100.5	100.3
Household consumption	100.0	94.5	83.6	99.5	93.9	94.1	95.3	100.8	101.1	99.6
Administrative consumption	100.0	96.5	85.2	100.9	100.3	100.1	100.0	103.3	103.7	103.9
Final domestic demand	100.0	94.8	83.6	98.5	96.6	97.5	98.4	100.8	101.6	101.2

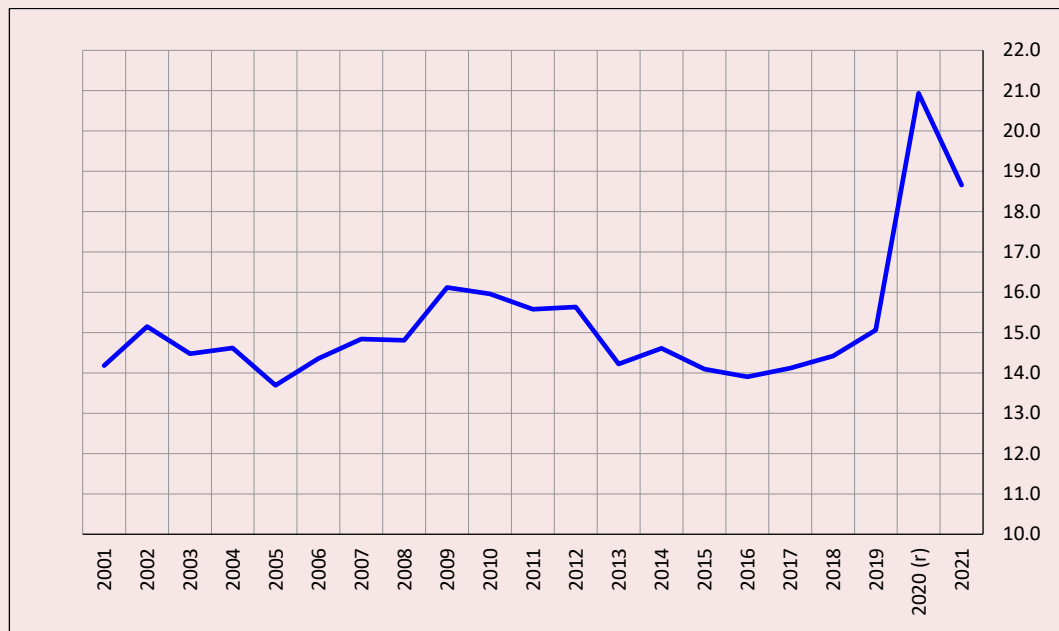
Source: INSEE.

Figure 3. Investment dynamics, % (the fourth quarter of 2019 – 100%)



Source: INSEE.

Figure 4. Savings rate of households, %



Source: INSEE.

Nevertheless, household savings increased dramatically during the quarantine in 2020 and early 2021. Most of the middle and upper middle class saved what they could no longer consume. Therefore, one would think that we faced a conjunctural phenomenon.

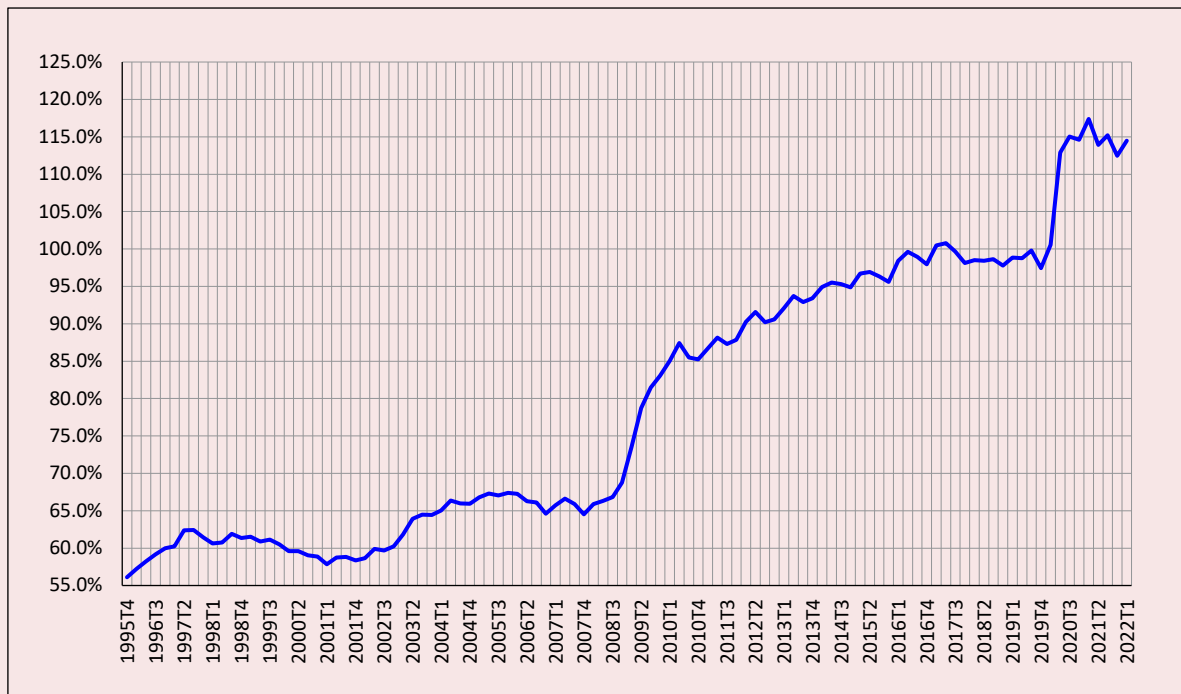
However, events in 2021 show that while the savings rate will decline slightly, it will not return to 2018–2019 levels (Fig. 4). Thus, the health care crisis seems to have served as a warning of global uncertainty. Thus, households faced with this uncertainty tend to increase their savings.

It should be noted that this applies only to the population from the fourth decile. The first deciles, that is, the population with the lowest incomes, actually lost their savings due to the health care crisis. Thus, the crisis led to an increase in income inequality.

The savings accumulated by part of the population remain largely passive. One reason for this situation is that the expectations of both entrepreneurs and households about the prospects of the French economy are not conducive to investment. We should also note that companies, whose debt levels have risen sharply because of the health care crisis, prefer to use their resources to reduce debt for fear of a significant increase in interest rates.

Weak investments by households and businesses could (and should) have been compensated by public investments. But the state is in the grip of a significant increase in social spending (due to the COVID-19 crisis and the need to protect the population from rising prices, which began to be felt in the summer of 2021) and the fear of not being able to service the sharply increased public debt.

Figure 5. Public debt, % of GDP



Source: INSEE.

In fact, the national debt, which reached 114.5% of GDP in the first quarter of 2022, has increased in two stages since 2000. *Figure 5* reflects that its increase is on a “ladder during crises”, whether it is the financial crisis of 2008–2010 or the COVID-19 crisis. Such increases are normal. The stages of debt growth correspond to periods of implementation of fiscal policies aimed at limiting the impact of these crises. However, we also see that it increased slowly but surely between 2010 and 2019.

Concerns about debt service (or its cost) arise because the European Central Bank, like other international central banks, raises key rates. Nevertheless, this could be expected from late 2020 or even early 2021. In this context, the French government has seen no other option than to keep social spending high and limit public investment, while demand is very high. Thus, this political choice is combined with “austerity” reflexes, resulting in a relatively low level of public investment, which has been holding back GDP growth since the third quarter of 2021.

With the onset of the COVID-19 crisis, labor productivity began to decline. There are many explanations for this decline, which has led to an increase in wage employment as production struggles to return to 2019 levels.

To some extent, it was influenced by the health measures adopted by companies. In particular, the mass shift to telecommuting in the spring of 2020, which was welcomed by company leaders, turned out to be negative in terms of working conditions over time (there were risks of employees working remotely more than two days a week) and had a detrimental effect on productivity.

We should also note that measures to support employees and companies have led to the

preservation of a certain number of organizations that would normally have to disappear. They are called “zombie companies”¹¹.

In addition, labor market imbalances associated with shortcomings in vocational training and skewed wage structures that rendered various productivity measures ineffective may have led to a situation in which productivity fell. Also, the supply disruptions that have characterized the French economy since late spring 2021 have certainly contributed to its decline. Overall, wages, employment, and productivity indicators have not returned to the level of 2019¹².

However, while the decline in productivity has a favorable effect on the unemployment situation, it affects the macroeconomic situation in two ways:

- contributes to an overall increase in prices;
- leads to a greater deterioration in the balance of trade than competitors.

This is confirmed by statistical data.

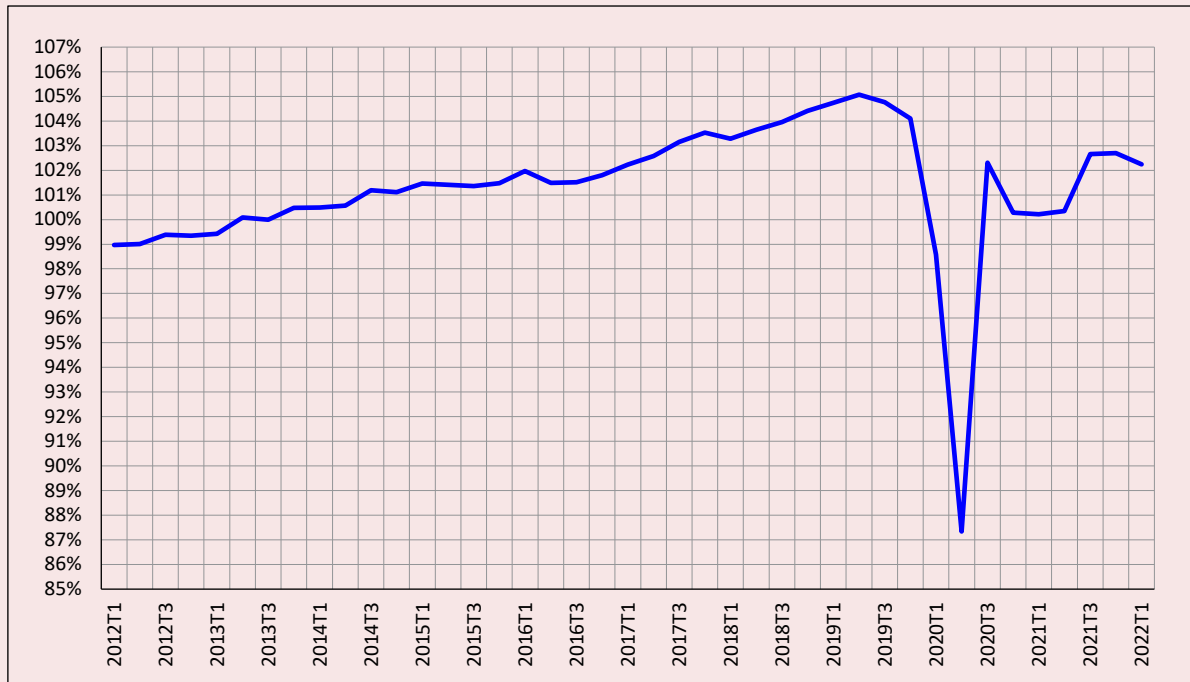
Indeed, one of the consequences of the COVID-19 crisis in France has been a greater reduction in exports than in imports. This can be understood when one considers that many businesses have had to suspend operations because of the quarantine and that the global demand for goods produced by French industry (in particular transport equipment) has dropped significantly. However, we see that the gap compared to the situation in 2019 persists in 2021, during the gradual recovery of the global economy from the crisis caused by COVID-19 (*Fig. 6, 7*).

Undoubtedly, the competitiveness of the French economy has deteriorated sharply due to the health care crisis. This could affect the competitiveness of the economy in the future and also creates risks of inflationary tensions.

¹¹ Benassy-Quéré A. L'année des Zombis? Available at: <https://www.tresor.economie.gouv.fr/Articles/2021/01/07/2021-l-annee-des-zombis>

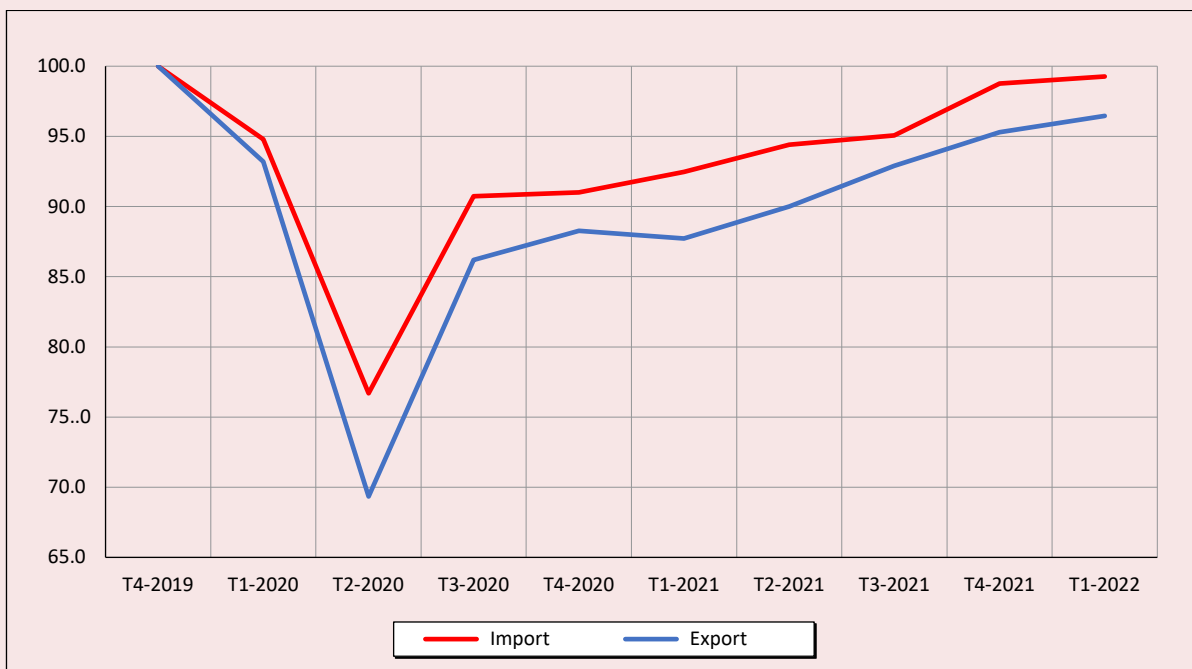
¹² Emploi, chômage, revenus du travail. Edition 2022. Available at: <https://www.insee.fr/fr/statistiques/6453776>

Figure 6. Apparent production productivity, % (the third quarter of 2013 – 100%)



Source: INSEE.

Figure 7. Foreign trade dynamics, % (the fourth quarter of 2019 – 100%)



Source: INSEE.

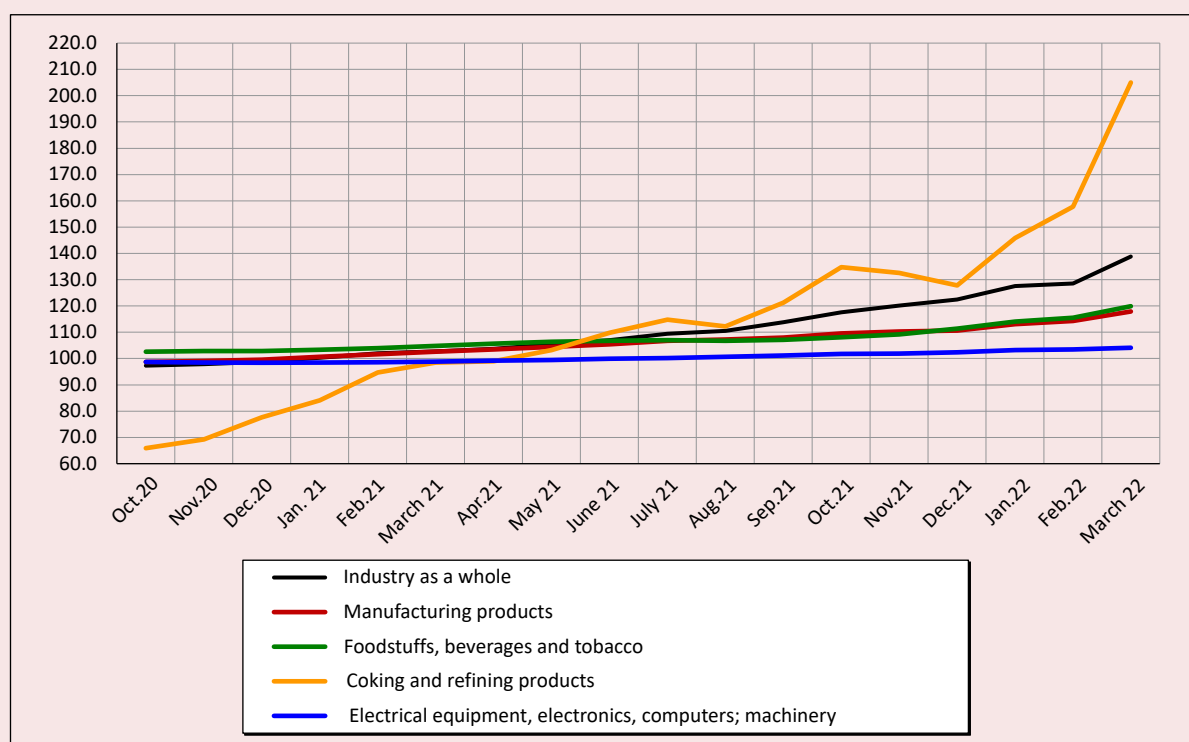
We should note the following regarding the above:

- France’s economy has not recovered despite the government’s considerable financial efforts during the crisis; after the rebound at the end of 2020, it remains in a phase of weak growth;
- foreign trade performance is below the 2018–2019 level, but the trade deficit tends to increase significantly, indicating a sharp deterioration in the country’s competitiveness;
- since June 2021, the manufacturing industry has been stagnating, while the “automotive” and “transport equipment” sectors have recorded a drop in production volumes, which clearly indicates the continuation of the cycle of deindustrialization.

The problems of “deficit” inflation in France

Inflation has been a serious problem for the French economy since the beginning of fall 2021. This is reflected in the rise in prices of some crucial commodities (fuel, microprocessors as well as food), which, in addition to their direct impact on the economy, lead to an increase in the prices of other products¹³. Thus, this is inflation of a special type, which is not due to excessive demand, but to a shortage of supply caused by certain conditions. The monetary dimension of this inflation seems weak. The French economy, like all European economies, actually faces a large change in relative prices, which requires specific measures (Aoki, 2001). Such inflation can spread because of the rigidities that exist in the production process and the

Figure 8. Growth of prices for imported products, % (2015 – 100%)



Source: INSEE.

¹³ INSEE, *Informations Rapides*, 139, 31 mai 2022.

inability to replace, at least in the short to medium term, certain products (Greenwald, Stiglitz, 1989; Stiglitz, 1989).

The turning point actually came at the end of spring 2021. It was then that it became possible to measure the gap between the recovery of demand, which was gradually returning to normal levels, and the difficulties of resuming supply. The latter was hampered by the long-term effects of COVID-19 in the manufacturing sectors (relatively slow resumption of certain activities), as well as in the transport and logistics sectors.

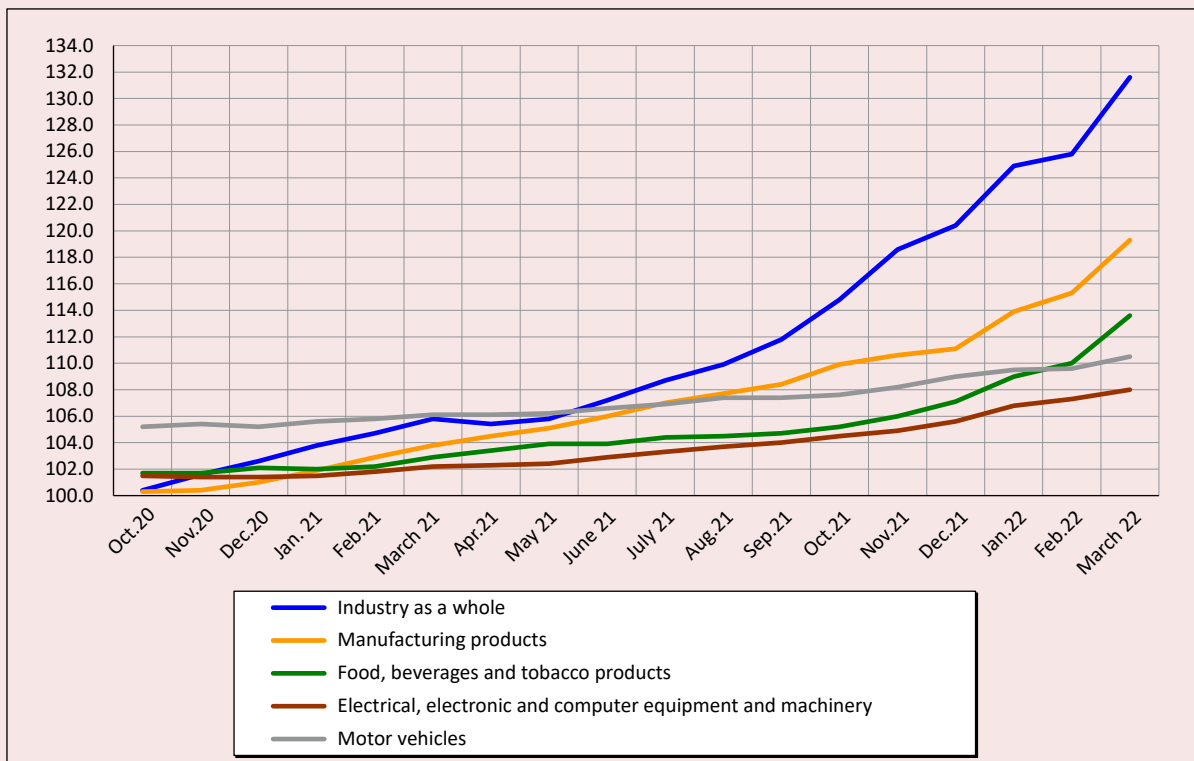
This explains why inflation was first felt at the level of imported products (Fig. 8). Then it gradually affected various industrial sectors in France, because of rising costs or a shortage of certain resources. This upturn gradually took on the features of a domestic upturn. To it is added the growth caused by

the contradiction between savings and investment. Thus, inflation is not the result of the situation in Ukraine or the Chinese isolation (although they have undoubtedly worsened the situation).

Over the year, according to INSEE’s preliminary estimate, consumer prices will rise 5.8% in June 2022 after rising 5.2% in May 2022 and +4.8% in April. The price increases are due to three main reasons: accelerating energy price increases, rising food prices, and increases in manufactured goods. However, the growth is uneven.

While consumer prices rose 0.6% for the month, compared to +0.4% in April, the difference is not significant. Energy prices are recovering along with the rise in prices for petroleum products, but, according to INSEE, the rise in food prices will be less noticeable than in April. Prices of services and manufactured goods will decline (Fig. 9).

Figure 9. Price growth, %



Source: INSEE.

Consequently, the price increase largely depends on the disruptions in production and logistics caused by the crisis related to the spread of COVID-19. It is not directly related to the situation in Ukraine. But, obviously, it can only accelerate the price increase. In the case of France, this is exacerbated by a decline in productivity, which has some inflationary consequences.

Price increases are mainly due to disruptions in the production process and supply chain. As mentioned above, the increase in product prices is mainly due to higher costs¹⁴. But it is important to remember that inflation always causes significant shifts of wealth in the economy (Varoudakis, 1995). This affects businesses differently. Small and medium-sized enterprises suffer more than large and very large ones, which has much to do with the ability of large companies to negotiate certain prices. Thus, the effect on the margin rate may be different depending on the size of companies. It is also obvious that the dynamics of this phenomenon will not be the same depending on the sectors of activity. Therefore, the specifics of each sector should be taken into account when setting prices (Mankiw, Reis, 2002). This conclusion then opens up a research agenda that differs from the standard one, emphasizes demand imbalances, and may be close to the research agenda of economists representing the French school of regulation, in particular because of the importance given to the notion of a production system composed of heterogeneous sectors (Aglietta, 1976; Boyer and Mistral, 1983; Mazier et al., 1984).

We should note that Germany seems to suffer from this phenomenon more than France because of its greater dependence on energy imports.

The decline in labor productivity, which we have already mentioned, also plays its part. From this point of view, given the size of its fall after the

COVID-19 crisis, it is not surprising that there is a sharp rise in prices.

In general, non-monetary inflation is clearly visible (Sapir, 2010). Today, the question of its sustainability is raised¹⁵.

Finally, it should be noted that price increases cannot be perceived equally by the population. Lifestyles are highly correlated with income levels, and the housing issue, including transportation costs, will determine how price increases will affect different segments of the population.

The fact that the main increase in prices is in energy and food indicates that the part of the population living outside of major metropolitan areas and having a low level of income (with a high share of food consumption) will be significantly more affected by this upward movement.

The impact of rising prices on the income balance of a great part of the population, that is, on what is left over for the household after basic expenses, is significant.

Thus, we can see that the upsurge in inflation will certainly continue, as its causes remain or even worsen due to the situation in Ukraine, the imposition of sanctions and counter-sanctions.

The monetary policy measures that the Central Bank plans to adopt will have little effect. Demand is not excessive, but external factors prevent the growth of supply.

What is important, however, is that inflation, which has been absent for almost thirty years, has returned as a main economic problem. It is also possible that in 2023 there will be another inflation, this time related to distributional problems. Inflation exacerbates social disparities, so it is urgent to recreate the “Conference on price and income policies” which operated in France from 1948 until the end of the 1960s.

¹⁴ Benassy-Quéré A. Coup de chaud sur les prix. Available at: <https://www.tresor.economie.gouv.fr/Articles/2021/10/18/coup-de-chaud-sur-les-prix>

¹⁵ Gaffard J.L. L'inflation, phénomène durable ou transitoire? Un aperçu historique pour comprendre. *Sciences-Pô – OFCE Working Paper 05/2022*. Available at: www.ofce.sciences-po.fr/pdf/dtravail/WP2022-05.pdf

Exacerbation of the problems of the French economy in the context of the situation in Ukraine

The situation in Ukraine, which has created a context with the different waves of sanctions adopted by the European Union and Russia's counter-sanctions, undermines international trade. This will inevitably have painful consequences for the French economy due to the impact of rising energy prices and possible energy shortages by the winter of 2022/2023, as well as the supply chain problem.

The dependence of the French economy on international trade is a serious problem. It is clear that playing the market alone will not solve it and a corresponding and active economic policy will be necessary. But the latter is still unlikely for political reasons.

The situation with Ukraine, through the mechanisms of sanctions and counter-sanctions, will have serious consequences for the French economy. Despite the fact that France is less dependent on hydrocarbon supplies from Russia than other European countries, the overall increase in energy prices will have a significant impact on it. The rise in energy prices will continue even if, due to a possible regional recession in Europe, it stabilizes over the summer. Sharp increases in energy prices are expected next winter¹⁶.

Note that the forecasts (*Tab. 4*) were made in June 2022. Since then, the oil and gas supply situation has further deteriorated. Thus, we can consider these forecasts to be very optimistic about the situation this winter and in 2023. Public debt is likely to exceed 112% of GDP and could reach 120% due to budgetary measures taken to compensate for the increase in the price of fuel. As for GDP growth, a recession forecast of about -1% does not seem realistic at present. If Germany's recession is -3.0 to -4%¹⁷, then France's is at least -2% or worse.

There is also the question of refined products (diesel) and products derived from hydrocarbons (fertilizers). The French economy depends relatively weakly on imports of Russian oil, but most of the consumed diesel fuel is bought in Russia. The share of fertilizers bought directly or indirectly from Russia is also significant, so the price increase will have an impact on agriculture in France.

In addition to the impact on industrial production and transportation services, there will be an impact on household consumption. The consequences of rising prices and shortages of certain goods could have a significant impact on economic growth in 2022 and 2023. However, this problem does not only affect France. In Germany, for example, growth may be only 1.7% instead of

Table 4. Comparison of the main scenario and the unfavorable scenario

	Main scenario			Unfavorable scenario		
	2022	2023	2024	2022	2023	2024
GDP	+2.3%	+1.2	+1.7%	+1.5%	-1.3%	+1.3%
Price index	5.6%	3.4%	1.9%	6.1%	7.0%	0.7%
Public debt (% of GDP)	112	109	109	113	114	117

Source: Banque de France, *Projections Macroéconomiques*, June 21, 2022. Available at: <https://publications.banque-france.fr/projections-macroeconomiques-juin-2022>.

¹⁶ Available at: <https://www.la Tribune.fr/entreprises-finance/industrie/energie-environnement/electricite-la-france-s-orienter-vers-des-prix-deux-a-trois-fois-plus-eleves-qu-ailleurs-en-europe-924199.html>

¹⁷ Available at: https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD000000000524884/Shipwrecked.pdf?undefined&reaload=EBk972~j44ueAbDDeho5nDAJ0UrRxXKaLtzeG23hN2zBXgqmDHPH5KECgPjfGCii

4.5% in 2022, and the recession will begin in 2023.

Given the high degree of uncertainty in the current situation, forecasters at the Bank of France have developed an unfavorable scenario for the economy in which additional risks materialize, including much more pronounced tensions over energy and food prices. The unfavorable scenario should be interpreted as a risk in relation to the main scenario, which at this stage is still considered the most probable. Under the unfavorable scenario, economic growth will slow significantly in 2022, GDP will decline by -1.3% in 2023, and will partially recover (to +1.3%) in 2024. Rising commodity prices will lead to inflation above 6% in 2022 (INSEE predicts 7% growth) and 2023, followed by a more pronounced decline in 2024.

Public debt would rise sharply in this scenario, even with unchanged fiscal policy. It should be noted that the projections do not include all the potential effects of a “second round” caused by the start of the recession in countries such as Germany, Italy, or Spain.

The total losses related to the situation in Ukraine, primarily due to the imposition of sanctions and counter-sanctions, for the French economy would amount to about 2 points of GDP over the period 2022–2024.

France’s dependence on imports makes it particularly vulnerable to future shocks. This was already noticed during the COVID-19 crisis.

The aftermath of the situation in Ukraine has exacerbated pre-existing supply tensions resulting from the COVID-19 crisis. These tensions have fueled high inflation through the significant contribution of energy prices tied to the price of oil. In addition, the price of refined diesel, which has already been increasing for 2021 during the recovery from the coronavirus pandemic, has risen sharply since February 2022. Indeed, the conflict in Ukraine has led to a significant reduction in

Russian diesel exports (France imports about 20% of its diesel from Russia), which has contributed to higher refining margins and is ultimately reflected in gas station prices.

The openness of the French economy (*Fig. 10*) has led to a dependence on shocks caused by the global economy. This situation is not unique to France¹⁸. While greater openness has contributed to faster economic growth, it has certainly increased susceptibility to external shocks.

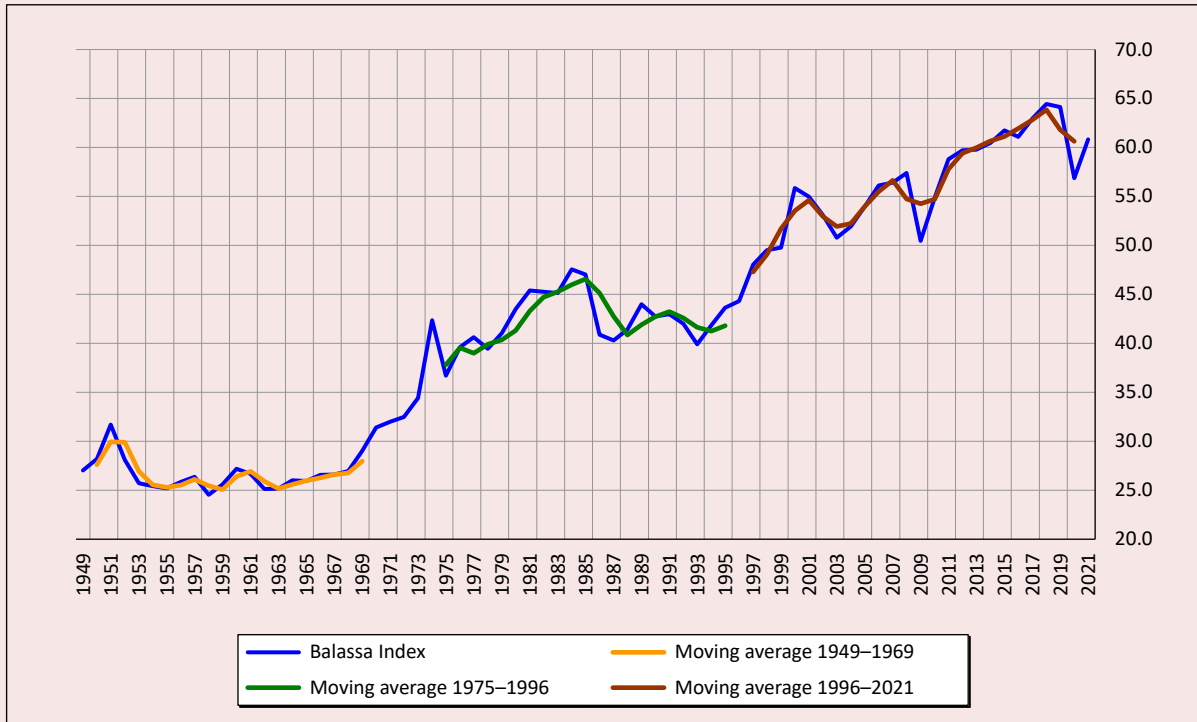
The French economy opened up gradually, in three stages. The first one is associated with the entry into force of the EEC (the forerunner of the EU) from 1965 to 1975. The second corresponds to the period of so-called “globalization”, the last years of the GATT and the introduction of the WTO (from 1991 to 2000). The third stage lasted from 2010 to 2019. It is worth examining the reasons for the third wave, as the situation in France at that time differed from that of other countries, whose Balassa index, by contrast, had fallen since 2012. In the case of France, the third wave also corresponds to the fall of the EU rate, which covers imports at the expense of exports, and the trend toward a worsening trade deficit.

Today, this openness of the economy in France has visibly transformed into dependence, as reflected in *Figure 11*. The deterioration of the coverage ratio appears to be structural and more prolonged than in previous episodes of deterioration.

With the continuation of the crisis and the imposition of sanctions and counter-sanctions, we should expect an increase in prices for all imported industrial resources, and the increase in tariffs, as already noted, will affect all types of production.

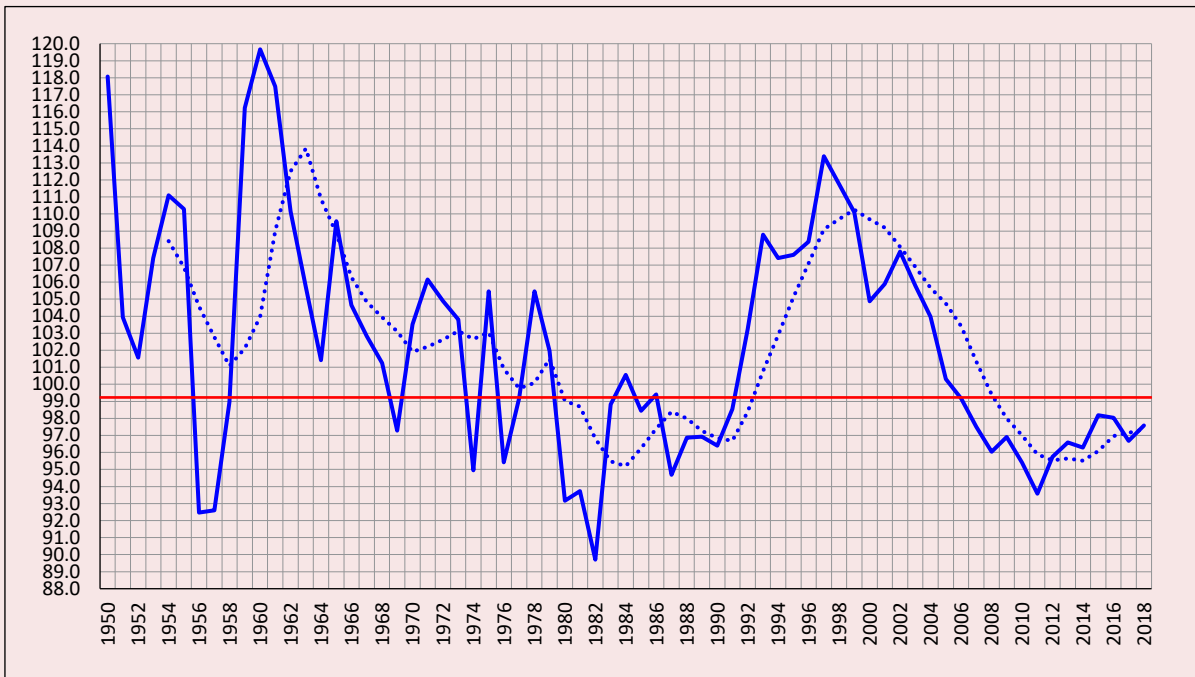
¹⁸ Clavin P. Turbulence and the lessons of history. Available at: <https://www.imf.org/en/Publications/fandd/issues/2022/06/turbulence-and-the-lessons-of-history-patricia-clavin>

Figure 10. The process of forming an open economy in France, %



Source: INSEE.

Figure 11. Coverage ratio, %



Source: INSEE.

Substitution policy is possible, but its implementation will be costly and labor-intensive. The willingness to move some types of production within the country will certainly take time. Thus, the excessive dependence of the French economy on international trade is a central issue today.

The growing trade deficit is now a serious problem. France's foreign trade performance has deteriorated, both because French industry products (aircraft construction) have been less in demand on the international market, and because of the limited specialization of the French economy¹⁹.

This brings us back to the problem of self-sufficiency, which was already raised during the COVID-19 crisis. In this regard, we should recall the President's statement at the opening of the exhibition "Made in France" on July 2, 2021: "*what is made in France is sovereignty, independence, that is, the ability, as many of you have done, to transfer know-how or part of production to French land*"²⁰. In his speech delivered on June 29 on the occasion of the presentation of the 2030 health care innovation strategy, the word "sovereignty" was mentioned four times²¹. It was also present in an address to the French people on November 24, 2020²².

On October 12, 2020, Emmanuel Macron named a number of challenges facing France²³. He recognizes the phenomenon of strong dependence: "*The second is our dependence on foreign countries.*

¹⁹ Ministère des Finance – Direction du Trésor, *Spécialisation à l'exportation de la France et de quatre grands pays de l'Union Européenne entre 1999 et 2009*, Lettre Trésor-Éco, n°98, février 2021.

²⁰ Available at: <https://www.elysee.fr/emmanuel-macron/2021/07/02/inauguration-de-la-grande-exposition-du-fabrique-en-france>

²¹ Available at: <https://www.elysee.fr/emmanuel-macron/2021/06/29/faire-de-la-france-la-1ere-nation-europeenne-innovante-et-souveraine-en-sante>

²² Available at: <https://www.elysee.fr/emmanuel-macron/2020/11/24/adresse-aux-francais-24-novembre>

²³ Available at: <https://www.elysee.fr/index.php/emmanuel-macron/2021/10/12/presentation-du-plan-france-2030>, pp. 1, 2.

*We wanted to forget about it because we were living in a miracle, but we were a little oblivious then to its fragility (...) I haven't forgotten that 18 months ago we were all short on masks. No one thought we could run out of masks, it was one of the things that had the least added value. In addition, we used them collectively, indirectly, because it was never the supposed choice of the nation, we delegated the production of masks to countries that produced them at a much lower cost than we did, saying, "Never mind, there will always be masks. Experiencing dependence can be dramatic. When there is an dependence and we find ourselves in situations where there is no more cooperation, that is the drama. And so we can no longer think of our economy, our production systems, as if everything is set up in such a way that everything will go well under any circumstances"*²⁴. Two words are important here, because they are very revealing.

First, the word "miracle" used to describe the situation of globalization. Second, "cooperation". Macron apparently ignores the fact that cooperation is never the only norm, but accompanies conflict. It follows from the last sentences of the quotation that he perceived cooperation as the eternal norm and was very surprised to find that it was not. In addition, we assume that he saw the world as a structure in which radical uncertainty and conflict were excluded.

First, however, the question of the main directions of economic policy has to be decided. Indeed, the way out of a situation of dependence cannot be predetermined.

Market mechanisms are not capable of overcoming these problems on their own. Clearly, important government decisions are needed, reflected in fiscal and monetary as well as structural policies. In the case of France, it is clear that the shock of the health crisis played a major role, exposing in particular the pre-existing problem

²⁴ Ibidem, p. 3.

of deindustrialization of the country. The result was the return of the idea of the Plan to the public debate.

The idea of a “plan” for what has been done in the past is now becoming a necessity. Emmanuel Macron and his government seem to have taken measures to slowdown the French economy. One of his first reactions was to recreate the High Commissioner’s plan in September 2020. One year later, on October 12, 2021, he submitted a draft plan for 2030. However, Paragraph 1 of Decree °2020-1101, reinstating the General Planning Commission (GPC), provides the following: *“There is hereby established a High Commissioner of Planning, responsible for directing and coordinating the planning and foresight work conducted on behalf of the State, and for explaining the choices of State agencies with respect to demographic, economic, social, environmental, health, technological, and cultural issues”*. The functions of the GPC are at the level of prospective, useful and necessary tasks, but that is not what such an organism requires. The GPC is more concerned with coordinating the activities of various forecasting bodies, such as France-Strategie, than with its function, which should be to identify development priorities and their implementation, to maintain a constant dialogue with administrations and enterprises, and to plan ways to achieve the goals set.

The effects of the 2008–2010 financial crisis on the French economy

We can consider that the French economy has not yet solved the structural problems revealed by the financial crisis of 2008–2010, also known as the “subprime lending” crisis. This has been masked by exogenous shocks, but is in fact a “background” on which the effects of external shocks are superimposed. The persistence of these problems explains the very fragile situation we were in before the COVID-19 crisis. Undoubtedly, the latter led to specific problems, then amplified by

the international context, and these problems have become so important only because the French economy has not overcome the effects of the previous financial crisis and has not learned its lessons.

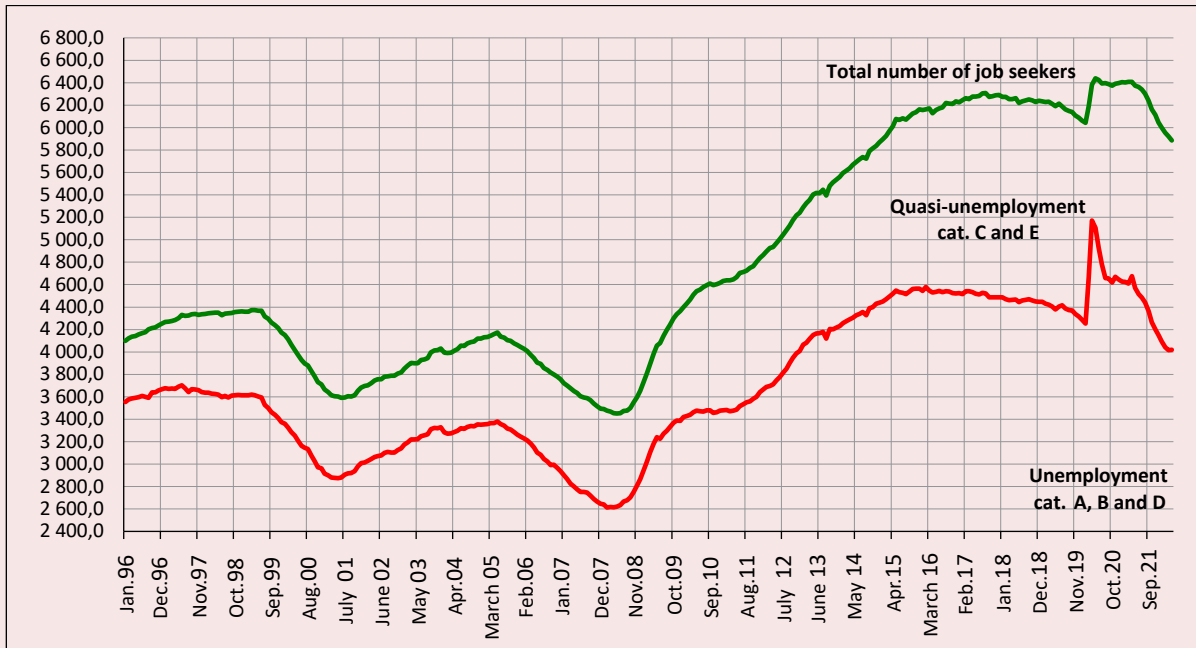
The phenomenon of mass unemployment has been around for a long time, and we must question the current government’s claim that it is in a state of regression and that “full employment” will be achieved²⁵.

Indeed, for many years the government considered only those whom the DARES (Pôle-Emploi) classifies as “category A”, that is, the unemployed who are actively looking for work, to be unemployed. However, it is more fair to consider also categories “B” and “D”, that is, part-time workers (B) and those who are unemployed but administratively exempt from “active search” (D). All three categories together (A + B + D) represent the actual number of unemployed. At the moment this group of people is numerous and amounts to more than 4 million people, although it has decreased slightly since January 2021 (*Fig. 12*).

In fact, this figure is 13.7% of the active population in France (including the unemployed), not 7.2%, as stated in the data provided by the government. To this should be added people with involuntary part-time jobs (who would like to work more) and those in subsidized jobs, i.e. jobs that are directly dependent on the social policies of the state. This group, which corresponds to categories “C” and “E” in the DARES system, now numbers 2 million people. It has increased dramatically over time, as it included only 800,000 people on the eve of the 2008 crisis. Thus, a total of 6 million people, or 20% of the economically active population, are unemployed or without employment security.

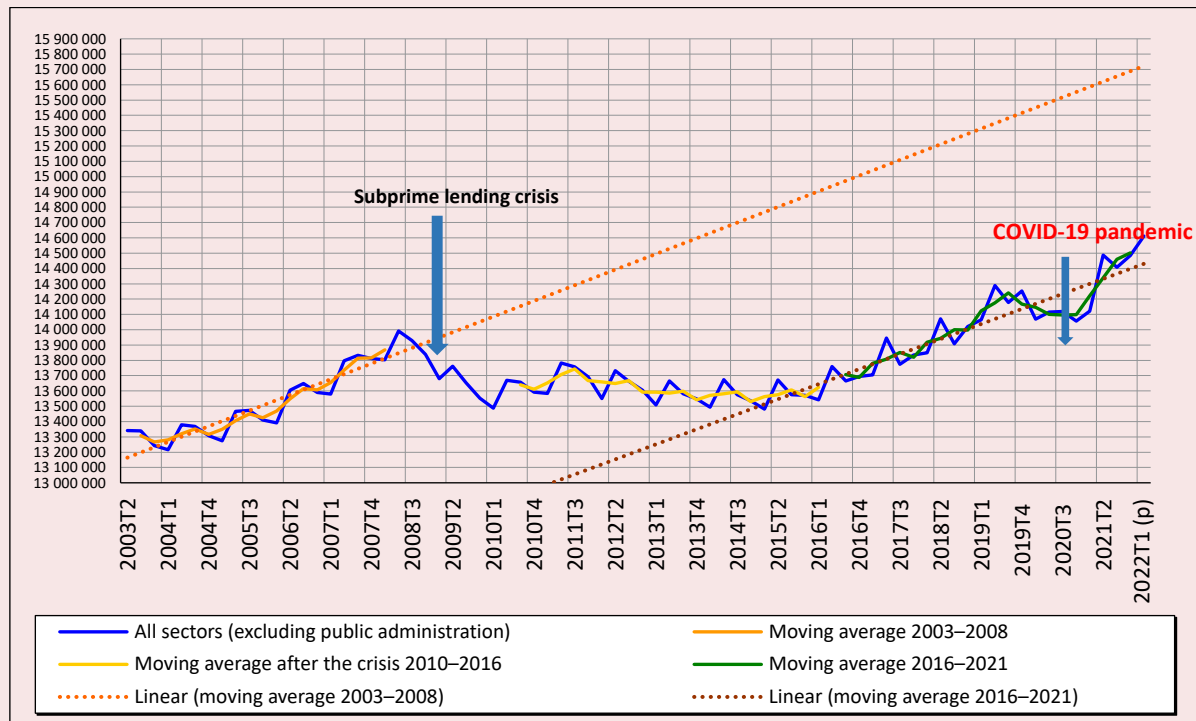
²⁵ Available at: <https://www.latribune.fr/economie/france/plein-emploi-une-promesse-comme-un-mirage-921101.html>

Figure 12. Demand for work in France, thousand people



Source: DARES/INSEE.

Figure 13. Employment (not including public administration), thousand people



Source: INSEE.

It should be noted that the creation of “microentrepreneur” status for some 780,000 people also helped to mask unemployment.

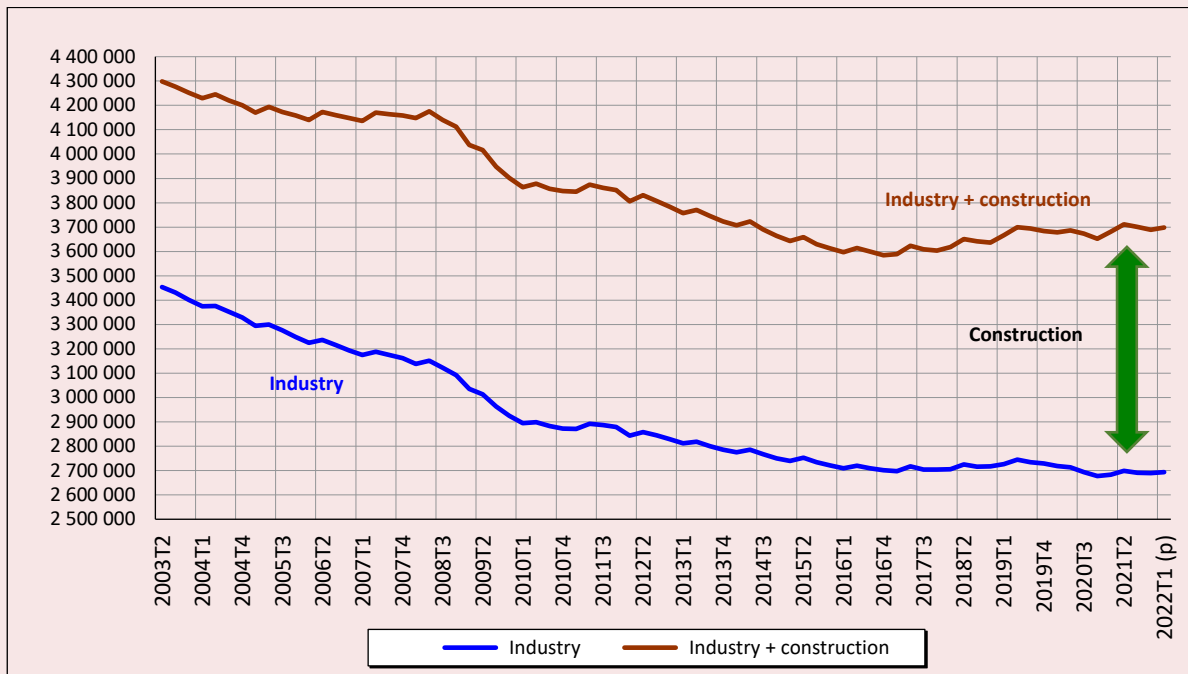
In fact, the effects of the financial crisis of 2008–2010 have not been smoothed out or overcome. It undermined the dynamism of the French economy, and it has not yet recovered. If we look at total employment of wage workers, excluding public administration and self-employment (Fig. 13), we see that compared to the pre-crisis period, the shortage is about 1.3 million workers, or 9% of the total. This demonstrates the magnitude of the problems facing the French economy today.

Nevertheless, an analysis of total wage employment, however eloquent its results, conceals another phenomenon: deindustrialization, which France has been experiencing for years. The absolute number of people employed in industry

declined steadily from 2003 to 2015 (Fig. 14). In the period from 2015 to 2021, its level remained unchanged, but the number of employed people increased. To some extent, this was influenced by the growth of labor productivity.

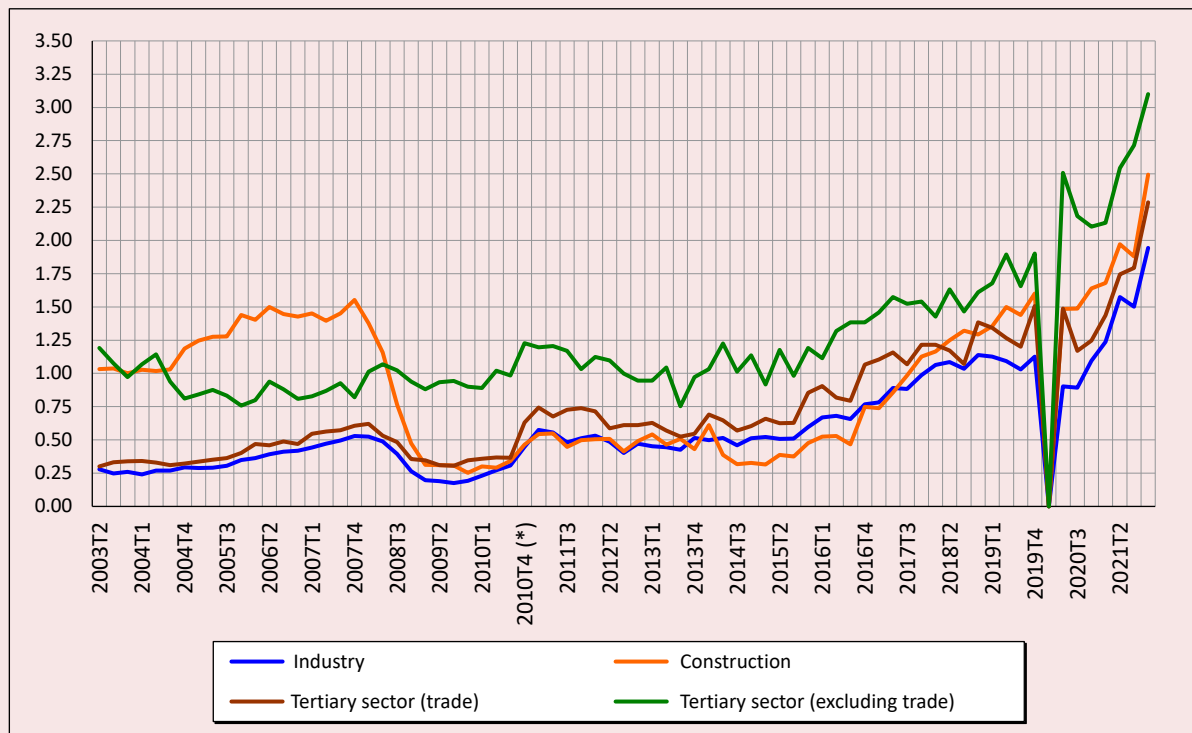
However, there has been an increase in the number of unsatisfied job applications in all industries (Fig. 15). In fact, this phenomenon has existed for quite a long time, but has acquired a new dimension due to the crisis caused by COVID-19. In fact, this growth reflects both disparities in the labor market and the corresponding attractiveness (or unattractiveness) of various sectors of activity. The fact that the percentage of unsatisfied applications is skyrocketing in the non-trade services sector is largely indicative of the mismatch between wages and expectations of potential workers in that sector.

Figure 14. Industry and construction employment (including government agencies), people



Source: INSEE.

Figure 15. Unsatisfied applications for employment, % of those employed in the industry



Source: DARES/INSEE.

Conclusion

Thus, the situation characteristic of the French economy at the end of the first half of 2022 does not inspire optimism. A significant deterioration of activity is expected from the fall or winter of 2022. The combination of high inflation, a significant decline in business activity and the severity of the unintended consequences of the 2008–2010 crisis pose challenges for the government. Three conclusions emerge from the overview of the French economy that we have presented.

1. The French economy will face the consequences of the international situation related to the situation in Ukraine and the imposition of sanctions and counter-sanctions, in a state of double weakness due to the COVID-19 pandemic and the crisis of 2008–2010, the effects of which have not been fully overcome. Lack of investment, which affects key infrastructure in the country, such as in the energy

sector, will exacerbate the effects of reduced gas supplies as a result of sanctions²⁶. This weakening will have a significant impact on the economy in the coming months. Moreover, faced with inflation and its impact on people's most modest incomes, the Governor of the Bank of France, Mr. François Villrois de Galleau, warned the head of state of the "significant budgetary costs" of the announced anti-inflationary measures. According to him, these measures should be as long and targeted as possible²⁷. Under such conditions, social tensions are likely to rise in the winter of 2022–2023.

²⁶ Available at: <https://www.latribune.fr/entreprises-finance/industrie/energie-environnement/electricite-la-france-s-oriente-vers-des-prix-deux-a-trois-fois-plus-eleves-qu-ailleurs-en-europe-924199.html>

²⁷ Available at: <https://www.latribune.fr/economie/france/inflation-un-nouveau-quoi-qu-il-en-coute-n-est-pas-justifie-juge-le-gouverneur-de-la-banque-de-france-924868.html>

2. Forecasts in recent weeks indicate a worsening of the situation (recession/preservation of high inflation). It should be noted that in the forecasts made by various organizations (Trésor, INSEE, Banque de France), the next year and a half to two years appear much more bleak than could have been assumed in March or April of last year. The awareness of the seriousness of the current situation is gradually growing. The risk of a major recession in the major EU countries can no longer be ruled out. This would directly or indirectly lead to a further deterioration of the French economy.
3. In order to cope with the new situation, an inflow of investment, both public and private, is necessary. The issue related to investment now seems to be crucial for the ability of the French economy to overcome the difficulties caused by the international situation. In addition to raising again the issue of public investment, which unfortunately has received little attention since the beginning of 2021, private investment, especially investment in production, should be favored as the key to restoring productivity growth. However, given the uncertainty caused by the state of the French economy and the international economic situation, it is to be feared that private productive investment will remain low in the coming months. Thus, renewal policies must be implemented with stakeholder coordination.

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Received July 15, 2022.

The Impact of Formal and Informal Institutions on Innovative Economic Development



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Abstract. Formal institutions are important elements of the institutional structure of the national innovation system. The development of legislative regulation of the Russian innovation system fits within the framework of the administrative state evolution: the growth of the scope of regulation is accompanied by an increase in the number of laws and by-laws. Although the dynamism of formal institutions is an essential condition for adapting to changing environment, it also increases uncertainty and therefore has a negative impact on actors. The analysis of the functioning of formal institutions can be conducted from two perspectives: deductive and inductive. The deductive approach is based on the analysis of the legislative regulation-associated costs and is close to the new institutional economics tradition. The inductive approach, which is used in this paper, follows original institutionalism and narrative economics scholarly tradition. The following problems associated with the functioning of formal institutions have been highlighted in the analysis of narratives about the Russian innovation system: the lack of the

For citation: Volchik V.V., Maslyukova E.V. (2022). The impact of formal and informal institutions on innovative economic development. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 77–94. DOI: 10.15838/esc.2022.5.83.4

necessary legislation, non-complementarity and inconsistency of laws and by-laws, the imperfection of existing legislation, lack of real support for innovations in the formal creation of relevant legal acts, funds and organizations, etc. An econometric modeling of formal and informal institutions influence on the innovative development of the economy has been carried out. Significant variables have been identified including the general indicators of formal institutions and social capital. It leads to the conclusion that the improvement of formal institutions is necessary for the innovative activity development, and high social capital contributes to building trust and, therefore, promotes knowledge sharing and cooperation, which are crucial for innovation initiation.

Key words: narrative economics, institutional economics, formal institutions, Russian innovation system, legal acts, institutional modeling.

Acknowledgment

This work was supported by the grant of Russian Science Foundation No. 21-18-00562, <https://rscf.ru/en/project/21-18-00562/> “Developing the national innovation system in Russia in the context of narrative economics” at the Southern Federal University.

Introduction

Institutional economic theory traditionally pays considerable attention to the law and legal institutions in the context of the formation of existing rules for economic interactions. The law and the entire body of legal acts, from the constitution and constitutional laws to various bylaws, are usually referred to as formal institutions. However, the institutional structure of any economy includes both formal and informal institutions. Contradictions between these two types of institutions can be considered as one of the sources of institutional changes.

In the case of changes in formal institutions, for example during reforms, certain changes in some rules affect other rules and regulations. This can lead to unpredictable consequences (Klammer, Scorsone, 2022).

Formal institutions represented by various legal acts have an “objective” form, because they are essentially a text. However, the functionality of formal institutions depends on how they perform their regulatory functions. The effective or satisfactory performance of regulatory functions depends on law enforcement, the judicial system, administrative structures, as well as the possibilities

for their effective reproduction over time. In the modern world, the evolution of formal institutions is associated with a significant increase in the number of existing legal acts. Also, the effectiveness of formal institutions depends on a combination of formal and informal constraints, which together make up the institutional structure of society and economy (North, 2010). As evidenced from social history, it is informal institutions and culture that often do not allow formal norms to function effectively, even if they are made in the likeness of the best legal practices and norms, for example, during the import of institutions.

Modern economies of various developed and developing countries have a phenomenon that N. Ferguson called the “administrative state”. The administrative state is understood as a “hierarchical and bureaucratic in its mode of operation, dedicated to generating ever more complicated regulation that had precisely the opposite effect of that intended” (Ferguson, 2020). N. Ferguson cites the example of the USA, where in recent years there has been an avalanche-like growth of legal acts, accompanied by the growth of administrative structures responsible for their implementation (Ferguson, 2020).

The Russian legal system is developing in line with the global trends of the administrative state: an increasing scale of regulation is accompanied by an increase in the number of laws and bylaws. The Russian innovation system is also witnessing a continuing growth of the amount of legal and normative acts: from federal laws to a wide range of development programs at various levels. Formal institutions are changing quite dynamically. For example, Federal Law 127-FZ of August 23, 1996 “On science and state policy in the field of science and technology” has been amended 45 times, and 27 amendments have been adopted since 2010. The number of bylaws and departmental normative acts governing science and innovation is increasing as well. In this context, it is necessary to take into account that there are no strong and stable traditions of legal culture in Russian practice. This leads to manifestations of unintended forms of opportunistic behavior, when actors violate norms because they do not know and do not understand them. An example is legal nihilism in the field of education and science, which was pointed out in a witty remark of the historian L. Graham: “Entrepreneurs, university professors, government officials – all easily break the rules of the game, because no one knows exactly what they are” (Graham, 2014).

Interactions between formal and informal institutions are complex and depend on historical, cultural and social contexts. The influence of formal and informal institutions can have different effects on the activities of small and large firms, for example. Empirical studies show that large firms, unlike small ones, adapt better to the shortcomings of formal institutions; it depends on the ability to internalize certain aspects of activity (Kafourous et al., 2022).

Actors perceive legal and normative acts through the prism of existing rules that have been studied extensively within the framework of the original institutional economics. Current rules are not necessarily perceived in various social situations through the prism of the actors’ experience, as

well as social contexts that influence behavior in accordance with downward causation (Hodgson, 2003).

Studies of the institutional structure of the Russian innovation system should take into account that formal and informal institutions are evolving at different rates. This leads to various kinds of effects, for example, the Veblen – Ayres dichotomy (Volchik, 2008). To understand the features of the evolution of the institutional structure, consisting of both formal and informal institutions, it is necessary to use a synthetic methodology.

When analyzing formal institutions, the following points can be considered: 1) the frequency and pace of changes in legal acts, 2) the structure of legal acts, 3) features of legal regulation, 4) features of law enforcement, 5) the content of key regulations and their impact on transactions. In this paper, we proceed from a hypothesis that there is a relationship between institutions and the development of the innovation system. In this regard, the main goal is to study the influence of formal and informal institutions on innovative economic development from the standpoint of a qualitative approach with the use of narratives and a quantitative approach with the use of econometric modeling. The relevance of the work is due to the fact that a comparison of the conclusions obtained within the framework of traditional economic modeling of the Russian innovation system, its institutional analysis, and the results of narrative research will allow us to formulate new recommendations for further reforms.

Coupling formal and informal institutions

Discrepancy between formal and informal institutions has considerable influence on economic development. If informal institutions are understood as culture in a broad sense (Alesina, Giuliano, 2015), then it becomes clear that, for example, academic values and culture in the field of science and education can significantly influence the effectiveness of formal institutions introduced during reforms, especially if such reforms are

associated with the import of institutions. Therefore, studies of the evolution of formal and informal institutions should be considered within the framework of broad social contexts and public discourse that reflects how actors understand the effectiveness or ineffectiveness of certain institutions in a given context.

Narrative economics allows us to consider stories that are broadcast by actors as sources of important qualitative data about social contexts (Volchik, Maslyukova, 2021; Akerlof, Snower, 2016). Through narratives, it can be traced how ideas related to the issues of legal regulation of innovation activities circulate in public opinion.

The functioning of the national innovation system is connected not only with markets and the production of private traded goods. Many goods that are important for the creation and implementation of innovations have forms that differ from the traded private goods. This situation facilitates the creation of hybrid forms of regulation that combine market, administrative and collective forms. In this context, we can consider various property rights regulation regimes that are associated with the adaptation of actors, for example, as in the case of the use of common property (Ostrom, 2011).

The analysis of the legal regulation of the Russian innovation system in our work will be considered through the prism of the mutual influence of formal and informal institutions and narratives about these processes; thus it is necessary to use a synthetic methodology that would cover elements of the new institutional economics in the tradition of D. North, the original institutional economics in the tradition of J. Commons, and the narrative economics in the tradition of R. Shiller.

Modern economics considers law and formal institutions primarily through the prism of transaction costs and the specification of property rights. Indeed, in the new institutional economic theory, the Coase theorem in the classical version assumes the existence of zero transaction costs as a

prerequisite for an effective market distribution of property rights. However, Coase himself emphasized that in the real world with non-zero transaction costs, a legal decision is very important. The specification of property rights is also an essential prerequisite for the implementation of market exchanges, because only by delineating property rights can we clearly individualize them, which is critical for a market economy (Hayek, 1988).

In the national innovation system, formal institutional regulation can also be associated with the specification of property rights and transaction costs. However, there are new moments associated with the specifics of the goods produced in various fields of the innovation system. For example, in the academic sphere, not only private goods are produced, but also a number of others: public, experience and credence goods (Tambovtsev, 2016). If the goods are non-market, then legal regulation is also important, but the costs faced by actors when using such goods differ from transaction costs in open markets.

To the national innovation system, legal regulation is of great importance in determining the directions and areas of innovation activity that are supported by the state. However, it is necessary to take into account the factor such as clarity and fuzziness of institutions. In the case when fuzzy institutions dominate, actors face significant uncertainty and institutional entropy, which affects the efficiency of the functioning of economic industries and spheres (Balatsky, 2007).

Scientific literature pays considerable attention to formal institutions related to intellectual property in various contexts of the development of the national innovation system. The system of formal institutions, in addition to transaction effects, creates a variety of external effects, both negative and positive, which, in O. Golichenko's interpretation, are associated with the phenomenon of technological spillover, that is, a situation where the results of intellectual activity are used by actors that are not involved in the process of its

creation (Golichenko, 2011). Ultimately, the state innovation policy should lead to the creation of a system of formal institutions aimed at eliminating or compensating for the factors associated with “low motivation of actors to work within the framework of the national innovation system; outdated paradigm, underdeveloped innovative potential of actors, insufficient competence; lack of available resources and elements of the system capable of ensuring the functioning of its processes; violation and an insufficient intensity of the system’s connections; complexity and failures of the framework conditions” (Golichenko, 2017).

The dichotomy of formal and informal institutions of the innovation system can be considered through the prism of actors’ understanding of various effects associated with the institutional structure of innovation. What an actor perceives as a system of existing rules or norms may include both objectively existing norms, such as legislation, and subjectively perceived rules that are interpreted through the prism of social experience, values, specific circumstances of activity conditioned by various social contexts.

Informal institutions in economic theory are associated with slowly evolving and difficult to change phenomena, such as culture, ethics, including economic ethics, and religion. In addition, a whole class of phenomena that are usually attributed to social capital, such as trust and associations, is connected with informal institutions.

The influence of informal institutions on innovation activity is very diverse and depends on their historical and national features. A good example is the informal institution of cronyism in China. Studies have shown that an increase in regional clan culture by 1% dramatically reduces the risk on the part of managers of local enterprises by 2.66%; therefore, cronyism significantly affects the propensity of entrepreneurs to invest in risky innovative projects associated with a high risk of losses (Huang et al., 2022).

Formal institutions have an opposite property of changing rapidly in short periods of time. The variability of formal institutions is explained by the ongoing economic and social policy, the goals of which are aimed at improving the environment for innovation activity. However, the instability of formal institutions creates additional uncertainty for actors; this negatively affects long-term plans and is especially detrimental to the implementation of complex innovative projects.

The dualism of stability and variability inherent in informal and formal institutions cannot be resolved by simple and universal solutions or models. To improve the quality of the institutional structure of innovation, it is important to have a relevant picture of the condition of both formal and informal institutions. It is possible to obtain relevant knowledge by conducting institutional monitoring using various methods of legal and qualitative research.

Formal institutions of the national innovation system have a multi-level structure. These are federal laws, government resolutions, departmental legal acts, and regional legal acts. Promotion of innovation activity by the state is primarily associated with the type of formal institutions, which can be generically called “state projects and programs”. For example, scientific literature contains a similar classification of such formal institutions at the regional level: the institution for state support of innovation, the institution for the development of programs and strategies, the institution of technology parks and technopolises, the institution for the interaction of science and entrepreneurship (Popov, Vlasov, 2013).

Studies of formal and informal institutions: deductive and inductive approach

Studies of informal institutions in the context of their impact on innovation often apply quantitative indicators, which, according to the authors, characterize the importance of a certain institution for the productivity of firms that use innovations. For example, in the countries with the developed

informal institution of communitarianism, in which group goals are given preference over individual ones, often negatively affects innovative development, but conclusions about its impact must be correlated with the specific social contexts of a particular country (Ploeg et al., 2022). Therefore, quantitative studies of informal institutions require an understanding of social contexts in specific country or regional conditions. Social contexts are primarily information about rules, values, and restrictions that are important to actors. It is possible to obtain information about social contexts in the course of qualitative research, which is developed, for example, in economic sociology, economic anthropology or original institutional economics. Modern development of narrative economics can be complementary to the methods and approaches of original institutionalism, which allows analyzing narratives through the prism of actors' understanding of the essence and significance of certain institutions for structuring social interactions; this understanding is reflected in the discourses of the actors.

Formal institutions exist in cooperation with the mechanisms that ensure their implementation. These mechanisms are associated with various kinds of organizations, from law enforcement and control bodies to public associations. In turn, information mechanisms, as well as institutions, can be closely connected, explicitly or implicitly, with a network of informal institutions, for example, business practices.

The analysis of compliance or non-compliance with formal rules can be carried out from the standpoint of two approaches: deductive and inductive. From the standpoint of the deductive approach, compliance or non-compliance with the norms depends on the limited rationality of the choice of the actor. Formal institutions are violated when the expected benefits of the violation are greater than the expected costs of sanctions (Tambovtsev, 2016a; Tambovtsev, 2016b). The

benefits vary depending on what defines them and what types they may be of. The direct expected benefits of certain types depend on an action that does not correspond to a formal institution, but due to limited rationality, one may not know whether the expectation is true, and that this action is the best violation. Costs also depend on the types of potential violations. They may be related to the direct amount of sanctions, taking into account the probability of detecting a violation. Also, costs can be viewed through the prism of reputational losses in the community, if the violation is detected.

Non-observance of formal rules from the standpoint of the inductive approach may be due to the following reasons: their non-compliance with strong informal rules, actor's ignorance concerning formal rules, opportunistic behavior patterns that are more beneficial to actors than their compliance with formal rules, prohibitively high transaction costs associated with compliance with formal rules, the absence of an object for regulating formal rules (or rather, its gradual disappearance).

An important question is how the researcher finds out that a particular formal rule is not observed. Obtaining this information becomes a non-trivial task, given that "objective" information about non-compliance with formal norms is related to law enforcement statistics, but does not provide the researcher with knowledge about why this or that norm ceases to work. And here the approach of narrative economics can be useful – through narratives, it can be traced how actors explain the effectiveness or non-effectiveness of a particular norm.

In relation to innovations, formal institutions are usually considered in the context of ensuring the operation of market mechanisms and are therefore evaluated through the index of economic freedoms (Bennett, Nikolaev, 2021). According to this point of view concerning the role of formal institutions, informal institutions that promote innovation, respectively, are considered through the prism

of ensuring individualistic freedoms. Without disputing this approach, we can note that it relies on significant simplifications in the study of the impact of the institutional structure on the development of the national innovation system. For example, informal institutions associated with such negative phenomena as corruption and bribery can, under specific institutional conditions, promote rather than hinder innovation through overcoming excessive formal barriers to economic exchange (Chadee et al., 2021). Similar effects of informal institutions were noticed and investigated in the late 20th century in Latin America. Where the transaction costs of state regulation of entrepreneurship are high, informal institutions become a significant factor in entrepreneurial and other innovations (Soto, 1995).

Formal institutions in a broad sense are rules and regulations that are adopted by the state or related institutions and organizations. However, such norms affect the behavior of actors to varying degrees, depending on the field of activity (Hirao, Hoshino, 2020).

In the context of the present work, the study of the effectiveness of formal institutions regarding the regulation of relations in the Russian innovation system is based on the analysis of the distribution, through narratives, of actors' assessments of the effectiveness of certain regulatory norms, rules and regulations. In fact, through narratives we get information about the current rules (working rules) in the interpretation of the original institutionalism (Commons, 2011). The actors' narrative about their perception of regulation by formal institutions provides information about how actors perceive their impact on the processes in the innovation system and which norms are most relevant to them.

Narratives about formal institutions in the Russian innovation system

Formal institutions in the Russian innovation system are difficult to separate from the entire body of civil legislation, and in this article we do not set

such a goal. We consider formal institutions through the prism of actors' reactions to them in the course of actors' activities, therefore, in order to understand how the institutional structure of the Russian innovation system functions, the contexts in which actors talk about the problems of formal institutions are important. Among such contexts, the following can be distinguished.

1. For the introduction and mass production of innovative products, it is necessary to develop laws and regulations (lack of necessary legislation).

“It seems like the country’s leadership has the political will to change the situation, but there is no real support for domestic producers in the domestic market. Vladimir Kononov, chairman of the Board of Directors of one of the companies (Dubna), cited the following figures: in the second quarter of this year, his company managed to sell only five hemodialysis machines to Russian consumers, and delivered 52 abroad. We still don’t have a federal law “On innovation activity”; the concepts such as innovation activity, innovation, innovative product don’t have legally established definitions; consequently, there are no subordinate regulations that would create favorable conditions for the development of innovations. Customs regulation is conducted in such a way that, for example, it is much cheaper to import a finished medical device than components for domestic equipment; as a result, domestic equipment becomes uncompetitive on the international market from the start. The system of vocational education has been ruined, soon there will be no one left to work in the industrial sector”¹.

2. Non-complementary and contradictory laws and regulations.

3. Flaws in current legislation (laws and other normative acts hinder innovation and create high transaction costs).

¹ Fedorova V. Why do innovations slow down? Modernizers have calculated how many laws prevent them from working. *Moskovsky komsomolets*. June 29, 2011. Available at: <https://www.mk.ru/science/2011/06/28/601155-pochemu-tormozyat-innovatsii.html>

4. Lack of real support for innovation alongside formal creation of relevant legal acts, funds and organizations.

5. Legislation blocks high-risk investments in innovation areas (legislation needs to be changed to prevent risky investments from leading to criminal cases).

6. Uncertainty of legal norms.

7. Prohibitive model of legislation and behavior of officials.

8. Legislation related to innovation (intellectual property) is at the level of best global trends, but its application is poorly adapted to Russian realities.

“There is a proposal to work out amendments to Chapter 77 “Unified technologies” of Part 4 of the Civil Code, so that design documentation – the main element of intellectual rights – could be used in some way. I think it will take more than one year until the proposal is accepted; it’s a tough job. Managers show interest in it, discussions are underway. These amendments to the legislation will not apply to specific inventors.

In our Civil Code, the issues regarding intellectual rights have been worked out quite well at the level of best world trends in jurisprudence. However, the application of this legislation in Russia is very poorly adapted – the inventor simply cannot bring their invention to the stage of implementation.

Relations across the entire vertical – the state, state corporations, head executors, co-executors and further down – have not been fully settled. None of these structures has received a clear state directive to work with inventors. There is a paradoxical situation when everyone is talking about innovation, an innovation department has been created in every constituent entity of the Russian Federation, there is a deputy director for innovation at every enterprise, and so on; but everyone has forgotten that innovation is the introduction into economic circulation of a certain product created on the basis of an invention that has legal protection.

Since we have no clear algorithm of working with the inventor, it turns out that the inventor has no options to do something better; inventors are actually unmotivated... From here we return to the question of how to adjust the legislation so that everyone would be interested. If you build a competent incentive system, then the inventors in the company will know exactly who is stealing from them abroad and what they are stealing; the inventor will feel involved”².

9. Inflexibility of existing legal norms for startups.

Determining the influence of various elements of the institutional structure (formal and informal) of the national innovation system on its development is a non-trivial task. It is necessary to take into account the different nature of formal and informal institutions. And although within the framework of neo-institutionalism, all institutions are viewed rather as exogenous (Greif, 2006; Lee, Law, 2017), there exist alternative approaches. For example, within the framework of the original institutional economics, institutions are viewed as predominantly endogenous, influencing the behavior of actors through the evolutionary formation of habits (Hodgson, 2003).

Qualitative formal and informal institutions complement each other as part of the institutional structure of the national innovation system. Among informal institutions, the strongest influence of social capital is noted in relation to innovation (Lee, Law, 2017). Indeed, social capital can be considered as one of the ways to reduce transaction costs in communication within and outside the innovation system. However, the concept of social capital is very broad and is associated with trust, high indicators of which also have a positive impact on economic and innovative development (Volchik, Maslyukova, 2019).

² Zgirovskaya E. We have a very low level of foreign patent protection. *Gazeta.Ru*. June 25, 2016. Available at: <https://www.gazeta.ru/army/2016/06/24/8324447.shtml>

Assessing the effectiveness of certain institutions through various indices is certainly productive and quite widespread in modern social sciences. However, this approach to the study of institutions has its drawbacks. It does not answer the following questions: which specific norms hinder the development of the innovation system; why actors do not comply with certain norms; how actors evaluate various regulatory alternatives; the regulation of which interactions is associated with prohibitive costs of compliance or non-compliance with various norms.

Therefore, any quantitative study of institutions should be complemented by qualitative research aimed at identifying ineffective and non-working norms, as well as those spheres and forms of social interactions that they regulate.

Social interactions are structured by various institutions, which in the most general form are divided into formal and informal. Within the framework of narrative economics we get information about institutions through stories broadcast by actors. These stories provide an explanation of the interactions, as well as information about the social contexts in which they occur. During the analysis of narratives, we reconstruct and interpret the actors' understanding of how the national innovation system functions and how institutions contribute to or hinder its development.

The lack of consistency is an important feature of Russian formal institutions in the innovation sphere. The eclectic nature of legislation opens up opportunities for various forms of opportunistic behavior, and, conversely, insufficient incentives are created for conscientious innovators.

The legal framework for innovation activity is one of the main conditions for creating a favorable environment.

“The global practice of creating innovation systems presupposes system-wide efforts on the part of the state in this direction for eight to ten years. During this time, legislation is being developed and adjusted;

development institutions and venture funds are being created and are evolving. They act as catalysts of the process, provide the initial demand for innovative ideas and developments, and provide start-up financing. Then the supply market is already being formed, an innovation ecosystem is being built, initially around state development institutions, and then private money joins the expanding supply. Russia lacked three to five years to create the foundation for a future innovation economy. But the most important thing is that there was not enough time to form an economic environment in which competition for efficiency would be preferable to competition for the administrative resource”³.

The task of building an effective competitive environment is connected with the problem of adaptive behavior of actors in the innovation system. Indeed, competition can be of various types; in conditions of significant administrative allocation of funds and control, strong incentives may arise (and they do arise) to compete for an “administrative resource” to the detriment of the innovative product and its market prospects.

The instability and prohibitive bias of Russian legislation significantly hinder innovation. Entrepreneurs, when faced with these trends, are forced to adapt, to look for simpler and less innovative business lines. Regulation in such cases has to deal with a permissive-prohibitive dilemma.

“The development of new directions in the market attracts investors. However, the main thing that attracts them is stability of the environment in which the business will develop. Tightening the legislation on vaping will once again show that developing a business in Russia is an extremely risky task, because at any moment the rules of the game can change. Often, our legislation, like the artillery of a century ago, “hits the squares” without seeing significant nuances within the regulated industry.

³ Belova A. “Generators of the future”: How Russia can get back on the path of innovation. Available at: <https://www.rbc.ru/newspaper/2015/09/21/56bc9c139a7947299f72bb37>

It has been repeatedly stated in the highest echelons of power that it is necessary to create conditions for an economic breakthrough, the transition from a resource-based economy to an innovation-based one, and the development of small and medium-sized businesses. However, practice shows that many Russian officials prefer the “hold back and not let go” principle. With this approach, we still have to wait long for the successful development and diversification of the economy”⁴.

Formal institutions are part of the market infrastructure, which is a fundamental condition for the development of the national innovation system. However, the very creation of such an infrastructure is associated with quite a complex process of law making and the application of norms.

When analyzing narratives about the innovation system, we often come across the phrase “there are not enough laws and regulations to conduct innovation activity effectively”. Therefore, it is important to trace the path from awareness of the problem to the formation of current rules that allow solving a particular problem associated with the lack of regulation.

Moreover, there is a possibility that the new rules and regulatory mechanisms will be associated with an increase in transaction costs, which will level out the impact of their implementation in the practice of economic activity. It is necessary to arrange the problems related to formal institutions into two blocks: first, those related to the structural problems of legislation and second, those related to the implementation of legislation in specific industry and historical context.

Structural problems in legislation arise out of its dynamic and evolutionary nature. Legislation should be continuously evolving in order to create a regulatory framework for emerging activities, new technologies, and new externalities. When changing the structure of legislation, it is important

to eliminate conflicts between new legal acts and existing norms, which may show incompetence in regulating new technological and economic processes.

The implementation of legislation in modern conditions also becomes a task that depends on the dynamics of changes in regulated industries. A typical example is the legislation on innovation procurement for state needs, which, after repeated changes, has not led to the creation of a system that promotes innovative development of Russian enterprises and organizations (Tsygankov et al., 2021).

If we consider formal institutions from the perspective of a new institutional economics, then issues related to the costs of compliance with a particular law are coming to the fore. In economics, there are methods for assessing transaction costs associated with compliance with the law, for example, through the opportunity costs of increasing the working time spent on performing the procedures prescribed by law (Volchik, Nechaev, 2015). However, such an approach can hardly help to understand how the very content of certain rules affects the behavior of actors, since transaction costs can be implicit and simply block some activities. If certain types of activity are blocked and interactions are not carried out there, it is very difficult to identify the fact of such a situation without a qualitative analysis of the actors’ discourses.

The inductive approach allows us to obtain two approaches due to two types of explanations of the behavior of actors in the innovation system. The first approach is based on identifying the most general rules and explanations of behavior, which, for example, can be associated with simplified economic protomodels. We associate such simplified protomodels with protonarratives through which they are communicated. The second approach is based on the analysis of social contexts contained in actors’ narratives. Social contexts, when coinciding and recurring, can be reduced to generalizing narratives.

⁴ Shatilov A. Populism against logic. *Izvestia* (iz.ru). March 29, 2019. Available at: <https://iz.ru/862125/aleksandr-shatilov/populizm-protiv-logiki>

The analysis of protonarratives and generalizing narratives allows us to obtain a comprehensive picture of the actors' understanding of the actions and effectiveness of formal institutions in the effective or ineffective structuring of social interactions within the national innovation system. Based on the received understanding of how formal institutions function, attempts can be made to promote ideas for reforming legislation.

Malfunctions of intellectual property institutions can manifest themselves in modern conditions due to their connection, for example, with patents, practices and procedures. Thus, innovators tend to be reluctant when it comes to patenting an invention due to the practice of information disclosure.

“An industrial development that is a know-how can meet the requirements necessary for its recognition as an invention if this technology can be used in industry and if the information about it cannot be obtained from publicly available sources of information. But as soon as the know-how technology is submitted to the patent office, it automatically loses its secret status, since Russian legislation explicitly provides for the obligation of Rospatent to publish information on the grant of a patent for an invention, including the name and formula of the invention, in the open register”⁵.

One of the most important issues related to innovation is the problem of financing. In Russian conditions, the state plays a significant role in funding innovations. However, formal institutions and law enforcement practices hinder innovation activity.

“And we still don't have a streamlined practice of risk assessment in venture financing in Russia. When it comes to budget financing, the Prosecutor's Office and the Investigative Committee believe that if you failed, it means that budget money was spent

⁵ Zyablov E. Plant-inventor: How to keep the secrets of production secret. *RBK*. October 10, 2019. Available at: <https://legal-support.ru/information/publications/zavod-izobretatel-kak-sohranit-v-taine-sekrety-proizvodstva/>

inappropriately. And venture financing, financing and support of startups are always at risk of making a mistake, which is an absolutely common thing. Out of a hundred projects, ten can be a success. How can corporations properly build these mechanisms within the Russian legislation? Therefore, it was decided to develop the rules of the game. If you don't have the right to make a mistake, it is impossible to go further and talk about new technologies and innovations”⁶.

There are many formal institutions that are not directly related to innovation, but shape an environment that influences the behavior of entrepreneurs and businesses. For example, low competitiveness in regional and federal markets can be considered as one of the factors influencing the formation of demand for innovation.

“Because there is no demand for innovation. If there were demand, there would be innovation. This is a market economy. Indeed, the economy is somewhat haphazard, but still it is a market economy in which demand is crucial. But why is there no demand for innovation?”

Let me give you a hint. The statistics of the Federal Antimonopoly Service are quite revealing: from 50% to 60% of cases initiated for violations of the competition protection legislation are cases against authorities (at all levels, from municipal to federal). So, the main enemy of competition is the state. Such a conclusion simply follows from the statistics of the federal body responsible for the development of competition in the country.

But if there is no competition, then innovations are simply not needed, they are not an argument in the competition. It is much more important to have administrative resource”⁷.

⁶ The head of ASI Svetlana Chupsheva: “New technologies are needed everywhere: both in the domestic and foreign markets”. September 11, 2018. Available at: <https://asi.ru/news/95130/>

⁷ Igor Nikolaev, Director of the Institute for Strategic Analysis at Financial and Accounting Consultants company. Academic answer. *Gazeta.ru*. September 25, 2013. Available at: <http://www.gazeta.ru/comments/column/nikolaev/s62993/5668061.shtml>

Protomodels that are associated with formal institutions explain their significance, functions and malfunctions within a particular industry or economic issues. Protonarratives concerning the national innovation system can be attributed to various modifications of the Coase theorem (Coase, 2007, pp. 150–151). In narratives, actors broadcast several ideas related to transaction costs and the specification of various property rights, which in one way or another affects the development of the innovation system.

According to Coase, the presence of non-zero transaction costs and the insufficient specification of property rights require a legal solution, therefore, this is related to the creation of formal institutions and regulatory mechanisms.

Actors repeatedly point out that there are no systemic conditions for innovation in the absence of effective norms.

“There are several bottlenecks in the Russian innovation and venture ecosystem. The first one is that the legislation lacks an adequate organizational and legal form for regulating the activities of private equity and venture capital funds. The second one consists in excessive regulation and inflexibility of existing legal forms for startups. The third one is insufficient amount of grant support for innovators at the early stages for ensuring a stable flow of projects, as well as lack of a wide range of mechanisms for attracting funding to these projects. This can also include lack of services and shortage of infrastructure for the development of venture investment. A serious obstacle to the development of innovation from the point of view of business lies in the lack of legislation on the protection of intellectual property, as well as absence of effective technical regulation”⁸.

In the above narrative, we see that formal institutions, in particular, are associated with a

shortage of infrastructure for innovation. This factor is crucial to the dynamics of transaction costs and, consequently, formation of effective legal regulation.

The repeatedly noted problem of the absence of required legislation is fundamental to understanding that market mechanisms may not work with regard to creating strong incentives for effective innovation.

“Deputy Chairman of the Accounts Chamber of the Russian Federation Valery Goreglyad recalled one more problem: “We do not have a full-fledged innovation-related legislation, including on taxes. In fact, we formed it during the crisis period of development, when the problems with filling the government coffers were considerable”. According to Goreglyad, Russia had two options when choosing an innovation path. One was to create a full-fledged innovation environment with a liberal tax system, with a significant reduction in the tax burden on all economic entities, not just individual companies. The other included targeted solutions for designing elements of an innovation system. Russia has chosen the latter option, although the former is more preferable, according to Valery Goreglyad. But in the current socio-economic situation, Russia has neither the time nor the opportunities for this. For example, none of the major Russian companies used tax advantages for modernization purposes. And the money saved on taxes was exported through offshore companies and returned to Russia in the form of yachts...”⁹

And here the main problem when carrying out reforms is that the task of developing the Russian innovation system should be addressed comprehensively, taking into account fundamental conditions and prerequisites. The fundamental conditions include political and economic stability, entrepreneurial initiative, and mechanisms of increasing returns. Only when all these three conditions are met, the mechanisms of innovative

⁸ Kalysheva E. Igor Agamirzyan: There are several “bottlenecks” in the Russian innovation and venture ecosystem. *Rossiyskaya gazeta*. September 15, 2011. Available at: <https://rg.ru/2010/09/21/agamirzyan.html>

⁹ Teryaeva N. Russian firms did not take advantage of tax benefits for modernization. *Rossiyskaya gazeta*. December 14, 2010. Available at: <https://rg.ru/2010/12/14/igoty.html>

Table 1. Major issues of the Russian innovation system

No.	Major issues identified in the analysis of narratives	Number of narratives
1	State management of innovation activity	295
2	Selection of research topics and directions	292
3	Demand for innovation	229
4	Institutional structure and competitive environment for innovation	202
5	Issues related to personnel for research and innovation	80
6	Issues related to intellectual property	51

Source: own elaboration.

development are launched and the national innovation system starts developing effectively. In addition to these fundamental conditions, two more prerequisites must be fulfilled: creation and development of a market infrastructure, as well as a high-quality education and science system (Volchik, 2022).

Econometric modeling of the influence of formal and informal institutions on the innovation system

In the modern institutional economics, econometric modeling is widespread; we can also use it in the framework of this work. Quantitative analysis of institutions is a special class of inductive research based on various kinds of indices and indicators characterizing various aspects of the functioning of both formal and informal institutions. We evaluate formal institutions through the prism of the public administration efficiency index, and informal institutions through the Social Capital Index.

Indeed, based on the previously conducted analysis of 1,149 selected narratives about the Russian innovation system, six central problems were identified (Volchik, Maslyukova, 2021), which the actors consider the most relevant (Tab. 1).

According to the analysis of narratives, “state management of innovation activity” is the most mentioned problem of Russia’s innovation system. The narratives also pay significant attention to the issue of “institutional structure and competitive environment for innovation” (4th place in terms of the number of mentions in the narratives), which was the reason for the choice of variables for building the model.

In order to analyze the impact of formal and informal institutions on innovation, the following specifications of regression equations were used:

fixed effects model (within estimator):

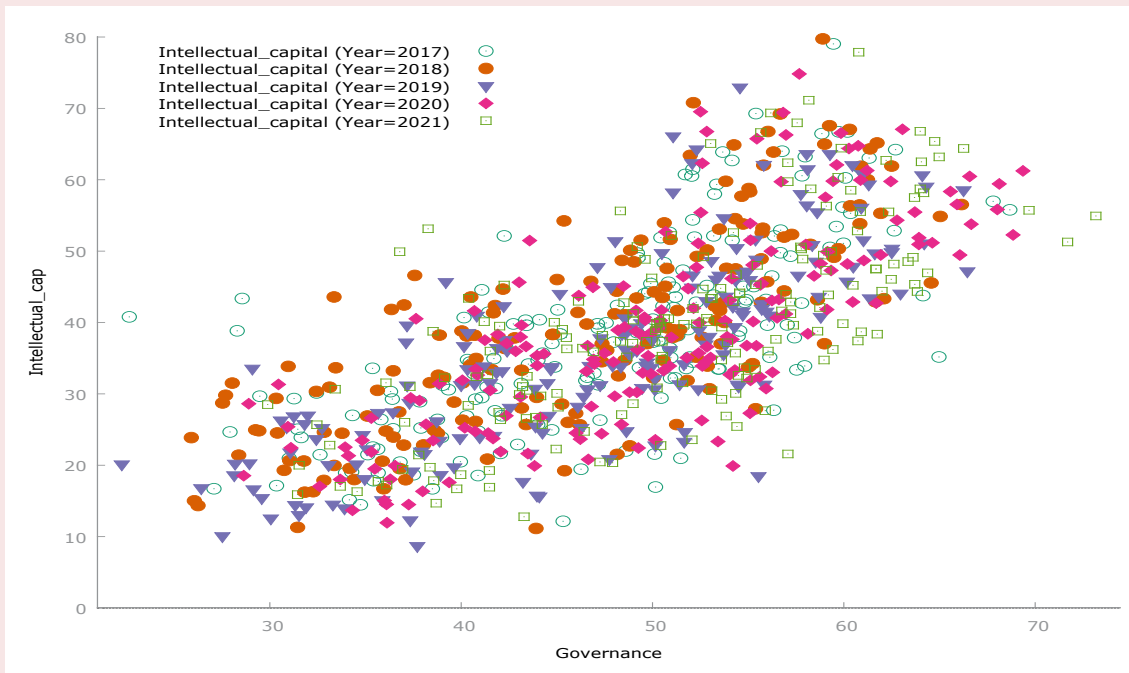
$$Intellectual_cap_{i,t} = \alpha + \delta \times Governance_{i,t} + \gamma \times Social_cap_{i,t} + \beta \times X_{i,t} + \mu_i + \varepsilon_{i,t},$$

$$Intellectual_cap_{i,t} = \alpha + \delta \times Governance_{i,t} + \gamma \times Social_cap_{i,t} + \beta \times X_{i,t} + u_i + \varepsilon_{i,t},$$

where i – country number; t – year; *Intellectual_cap* (intellectual capital and innovation index) – dependent variable – indicator of development of the national innovation system in the i -th country, *Governance* (public administration effectiveness index) – variable characterizing the level of development of formal institutions, *Social_cap* (Social Capital Index) – variable characterizing the social capital in the i -th country (level of development of informal institutions), X – vector of control variables, μ – specific country features (fixed effects), allowing to take into account the heterogeneity of countries, which is not reflected by other control variables; u – individual country features (individual effects); ε – random model errors, δ , γ , β – estimated model parameters, α – constant.

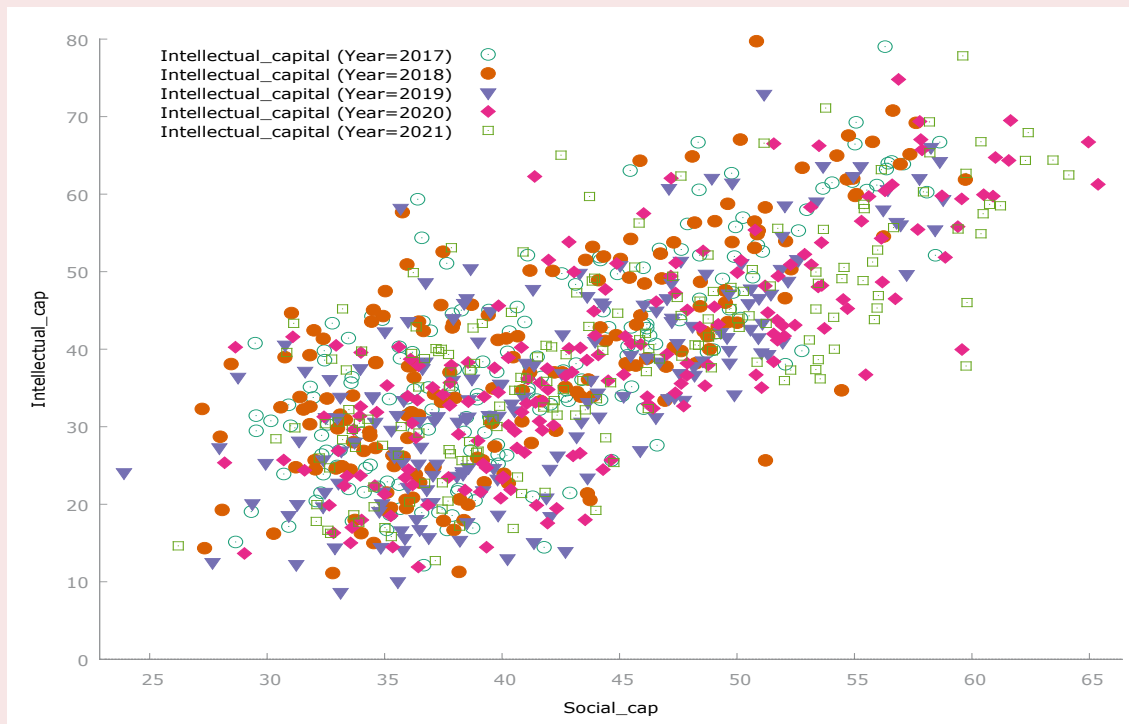
The parameters of the δ , γ , β models were assessed on the basis of panel data for 5 years (from 2017 to 2021) for 185 countries represented in the Global Sustainable Competitiveness Index (<https://solability.com/the-global-sustainable-competitiveness-index/the-index/>). The natural capital index (*Natural_cap*), which characterizes

Figure 1. Scatter chart showing the dispersion of innovation (*Intellectual_cap*) compared to formal institutions (*Governance*) (broken down by year)



Source: own elaboration.

Figure 2. Scatter chart showing the dispersion of innovation (*Intellectual_cap*) compared to social capital (*Social_cap*) (broken down by year)



Source: own elaboration.

Table 2. Model assessment results (dependent variable – Intellectual_cap)

Variable	Fixed effects model	Random effects model
<i>const</i>	30.670 *** (3.3610)	18.593 *** (3.091)
<i>Governance</i>	0.103 ** (0.041)	0.225 *** (0.044)
<i>Social_cap</i>	0.140 ** (0.055)	0.361 *** (0.051)
<i>Natural_cap</i>	-0.065 * (0.037)	-0.106 *** (0.036)
<i>Resource_Intensity</i>	-0.007 (0.032)	-0.037 (0.033)
<i>N</i>	925	925
<i>R²-within</i>	0.0384	-
<i>LSDV R²</i>	0.9563	-
Robust test for the difference of constants in groups Null hypothesis: Groups have a common intersection Test statistics: Welch F(184, 250.3) = 26.8641 p-value = P(F(184, 250.3) > 26.8641) = 7.69918 e-105		
Breusch – Pagan test Null hypothesis: Observation-error variance = 0 Asymptotic test statistics: Chi-square(1) = 913.456 p-value = 1.16593e-200		
Hausman test Null hypothesis: GLS estimates are consistent Asymptotic test statistics: Chi-square(4) = 196.283 p-value = 2.36608e-41		
Note: Standard errors are indicated in parentheses. *, **, *** – significance of the coefficients at the 10%, 5%, 1% significance level, respectively. Source: own research findings.		

the availability and level of depletion of natural resources, and the index of resource efficiency and intensity (*Resource_Intensity*), which characterizes the efficiency of using available resources as a measure of operational competitiveness in a world with limited resources, were used as control variables.

We assume that the coefficients δ and γ will be positive, showing that the higher quality of formal institutions and stronger social ties contribute to the development of innovation activity. *Figure 1* shows the correlation between innovation (*Intellectual_cap*) and formal institutions (*Governance*). *Figure 2* presents the correlation between innovation (*Intellectual_cap*) and social capital (*Social_cap*). Both graphs show that countries with better institutions and social capital tend to have more intensive innovation activity.

The results of assessing fixed and random effects models are presented in *Table 2*.

According to the robust test for the difference of constants in groups, and also according to the Breusch – Pagan test and the Hausman test, the fixed effects model is the best specification. The results of assessing the fixed effects model demonstrate that the overall indicator of formal institutions (*Governance*) has a statistically significant positive impact on innovation. This conclusion confirms the view that the improvement of formal institutions is necessary for the development of innovation. Social capital (*Social_cap*) also has a statistically significant positive impact on innovation: differences in the level of development of social capital determine differences in the intensity of innovation activity. The indicators *Natural_cap* and *Resource_Intensity* included in

the model as control variables turned out to be statistically insignificant.

The quantitative analysis of the impact of institutions on innovative development provides an important understanding of the significance of the quality of the institutional structure in terms of evolution of the national innovation system. However, comprehensive knowledge of specific rules and social contexts can be obtained with additional research of narratives. In the course of analyzing the influence of formal institutions using narratives as data sources, we focus on two points: identifying protomodels and interpreting the influence of social contexts on the behavior of actors in the innovation system.

Concluding remarks

The quality of formal institutions has a significant impact on the development of the national innovation system. Within the framework of institutional economics, two approaches to the analysis of formal institutions, deductive and inductive, can be distinguished. The deductive approach is connected with the scientific tradition of the new institutional economics, and the inductive approach is connected with the original institutionalism. The article uses an inductive approach to the study of formal institutions. We also use narrative economics approaches to analyze the institutional structure of the national innovation system, so the main source of data for qualitative analysis of formal institutions of the innovation system consists in the narratives that were selected during the analysis of Russian mass media and Internet sources.

As a result of the econometric analysis, the hypothesis of the existence of a relationship between the institutions and the development of the innovation system was confirmed. The analysis and the statistically significant variables identified in the model can later be used in collecting and analyzing qualitative data such as narratives about the development of the Russian innovation system. A joint qualitative study of narratives, along with econometric modeling, allowed us to obtain a deeper understanding of the functioning of formal and informal institutions and their impact on the creation and implementation of innovations. The analysis of the formal institutions of the Russian innovation system allows us to conclude that the legislation on innovation is not sufficiently systematic; it is fragmented and inconsistent. The redundancy of regulation is somewhat compensated by informal norms. However, informal institutions cannot compensate for regulatory failures in terms of creating strong incentives for innovation.

When reforming the legislation related to the functioning of the innovation system, there is a danger of moving toward creating excessive barriers and regulations that increase the bureaucratic burden on business. One of the ways out can be the adaptive framework nature of regulation, which was used during the reforms in China and is characterized by the well-known Chinese aphorism: “First get on the bus, and then buy a ticket”. Such a sequence of regulation means that the formation of norms should not hinder innovations.

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Received July 11, 2022.

SCIENCE, TECHNOLOGY AND INNOVATION DEVELOPMENT

DOI: 10.15838/esc.2022.5.83.5
UDC 338.2(985)(082), LBC 65.9(211)я431
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Development of a New Technological Paradigm in the Arctic Regions in 1990–2021



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Abstract. Research on the evolution of technological paradigms in various countries should be continued at the level of regions and municipalities. The article fills the gap, as its purpose is to study the formation of a new technological paradigm in the Arctic zone of the Russian Federation. We identified the chronology of the new technological paradigm deployment in the Russian Arctic over the past three decades; explained the reasons for making Nenets Autonomous Okrug a pilot site for technological, organizational, institutional experiments and innovations in the Arctic zone; we characterized factors impeding and promoting the formation of a new technological paradigm in the Murmansk Oblast. We determined the methods of research (system-wide approach, retrospective, cartographic, comparative, structural analysis) depending on the chosen theoretical and methodological framework: the theory of techno-economic paradigms, the theory for economic development of the North and the Arctic, the concept of evolutionary economic geography. As a result, we have identified and characterized five stages in

For citation: Pilyasov A.N., Tsukerman V.A. (2022). Development of a new technological paradigm in the Arctic regions in 1990–2021. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 95–117. DOI: 10.15838/esc.2022.5.83.5

the formation of a new technological paradigm in the Arctic in 1990–2021. We use the data on Nenets Autonomous Okrug to show the favorable role of small and medium-sized natural assets and the organizational diversity of extractive companies, an active policy of the regional government that pursues the principles of constructive duality at the first stage of the formation of the new technological paradigm. We also consider the data on the Murmansk Oblast to show the role of the resource monopoly of local large mining enterprises in inhibiting the entry of new actors and the deployment of new projects in the mining development of the region. We conclude that the formation of the new technological paradigm in the Arctic regions is characterized by significant unevenness (asynchrony): the susceptibility of the Arctic territory to the arrival of new actors, technologies and institutions is determined by the age of the resource province, type of natural resource, size and forms of location of the main deposits. The most important task for future research is to study optimal forms of state influence on the development of a new way of life in the territories of the Arctic with tools and institutions of active industrial policy at the federal, regional and municipal level.

Key words: formation of a new technological paradigm, regions of the Russian Arctic, Nenets Autonomous Okrug as a pilot development area, Murmansk Oblast as an old industrial region, pilot project, marine logistics, technological innovation.

Introduction

To date, the topic of national techno-economic dynamics and transition to a new technological paradigm of the leading countries is relatively well developed in the world. The efforts of C. Freeman (Freeman et al., 1982; Freeman, Perez, 1988; Freeman, 1987), C. Perez (Perez, 2010), S. Glaz'ev (Glaz'ev, 1993; Glaz'ev, 2012) and other scientists developed the ideas of Kondratiev waves (Kondratiev, 1925) in the form of a comprehensive picture of the conjugate technological, economic and socio-cultural (institutional) dynamics that accompanies the transition to the new technologies and organizational principles of economic activity, showing the features of the stages of origin, formation and expansion of a new techno-economic paradigm in the economy of leading countries of the world.

However, the problem of applying the concept of technological paradigms to the particular local economic, social and natural features has not been solved. For Russia, due to the huge interregional contrasts and differences, it is of great importance and relevance. Consideration of the local context is especially important in the first stages of the

establishment of a new technological paradigm, when territorial differences are exceptionally large (then, with its subsequent spatial expansion, the situation evens out).

The task is not only to change the optics from telescope to microscope while studying the formation of a new technological structure in the Arctic regions. It is very important to pay attention to the properties of the regional space as an environment for the dissemination of technological innovations and other attributes of the new technological paradigm. The settlement system, infrastructure of regional space, territorial structure of economy, qualitative characteristics of local communities, and for the Arctic territories – and the age in decades of economic development – determine different degrees of permeability of regional space to innovations¹: in one case they act as a catalyst for the diffusion of innovation, in another, on the contrary, as a filter and a brake (barrier) of radical innovative modernization.

¹ A complex phenomenon that depends on landscapes, settlement systems, infrastructure, institutions of power, and socio-cultural characteristics of local communities.

The context of the regional space and its various properties in terms of permeability to technological innovations disappears in both the panoramic country view (macro-level) and the intra-corporate view (micro-level). Paradoxically, against the background of numerous studies of the innovation process in the country and corporations, there are almost no works on the “context”, on the environment for a new paradigm deployment in the form of particular regional spaces. However, it is in the Arctic that this environment is exceptionally specific and certainly deserves separate consideration in the context of studying the spread of the new technological paradigm. Our study aims to fill this gap.

The subject of the study is the process of spreading the new technological paradigm in regional spaces over the past 30 years, which is considered on the particular object – the regions of the Arctic. The purpose of the work is to study the features of the formation of a new technological paradigm in the Russian Arctic. It provides for the solution of three tasks: 1) to determine the chronology of the deployment of the new technological paradigm in the Russian Arctic in the last three decades; 2) to characterize Nenets Autonomous Okrug as an area of new economic development and a pilot site for the formation of the new technological paradigm in the Arctic and determine the reasons for its nomination for this role; 3) to determine the sequence of formation of the new technological paradigm in the old industrial Murmansk Oblast, catalysts and blockages of this process.

Methodology and methods

The formation of a new technological paradigm in the Arctic is considered in this paper as a process of penetration of new technologies in the development of resources and spaces, which depends on the regional environment, the susceptibility of which to innovation is determined by the activities of regional authorities in the field

of industrial policy and the system of its relations with the federal center, major corporate actors in the region, local manufacturing businesses.

Three sources represent the theoretical and methodological foundation of the study. First, it is the concept of techno-economic paradigm, formed for the level of countries in recent decades by the works of numerous supporters and followers of Kondratiev waves theory. The methodology of evolutionary economic geography, which emphasizes the deployment of the process in the regional space, allowed performing the tasks of adapting this country concept for the Arctic regions, taking into account their significant specificity in the resource profile, low population, transport periphery and natural extremes.

Second, it is the theory of economic development of the North and the Arctic. For many decades, it has been developed by Soviet and Russian economist-geographers. It provides a constructive link between the techno-economic non-spatial concept of paradigms and the very specific properties of the regional space of the Russian Arctic: the establishment of a new technological paradigm in the Arctic is naturally associated with a new cycle of development of resources, land and sea spaces. The features of the methods we use (retrospective analysis, cartographic, comparative, etc.) are determined by the legacy of the development school.

The third theoretical and methodological source is the holistic approach. The authors proceeded from the fact that the formation of a new technological paradigm is associated with the implementation of not just one, but numerous related innovations along the entire resource chain.

Main results

Five stages of deployment of the new technological paradigm in the Russian Arctic

In 1992, along with a radical market reform in Russia, began the first, initial period of “groping” technological and organizational innovation in the

development of the Arctic. At this time, the new paradigm was being “hatched” in the cocoon of the old one: as a result of corporatization, privatization and fragmentation of dozens of large state mining associations, chapters and enterprises, a new experimental environment for testing potential new ways of techno-economic development of the Arctic was emerging.

The significance of the reform for the basic extractive industries in the Arctic was that it opened up the opportunity for people from outside the extractive industry – from geology, the financial sector. In doing so, they could get a chance for risky entrepreneurship and free capital to try new technical and organizational solutions.

Some leaders of Soviet mining, oil and gas enterprises also proved capable of revolutionary technological and organizational experiments. However, the technological revolution in the Arctic in the 1990s was mostly started by specialists from outside the production system, such as young, enterprising financiers.

The paradox of the technological revolution that began in the 1990s was that its success required not only new technology, but also investors with a new mindset. Technologies were developed, used, but did not lead to revolutionary transformation: moreover, the new technologies themselves often reinforced the dependence on the former industrial path.

Financial capital and its carriers, as Carlota Perez (Perez, 2011) notes, due to their mobility, unrootedness, openness to the established decades-long production and technological path², ensured the loosening of the old paradigm and conditions for

² Financial capital is mobile because it is not tied to specific productive knowledge. During stationary periods, this is often a disadvantage, but during periods of technological revolutions it becomes a huge advantage: productive capital is rooted in a specific geographic region, a specific field of technical and engineering knowledge. After decades of success, it is difficult for capital to overcome its dependence on the path in times of technological revolutions. Not surprisingly, therefore, it is financial capital and its carriers that play a pioneering role here.

a radical renovation of extractive production – the transition to new technological schemes, solutions, resources. The reform has shaped the conditions (new regime of production sharing agreements (PSA), new joint ventures (JV), small and medium resource enterprises, etc.) for new, non-state sources of free financial capital, private foreign investment and emerging new Russian investors in the Arctic mining industry.

The particular forms of private financial capital coming into the Arctic’s mining assets were manifold: in one case, young specialists became financial managers and gave their first accumulated capital to investments in high-margin resource businesses (for example, Norilsk Nickel); in another case, private capital came in the form of a joint venture, where the Russian co-director was responsible for production competencies and the foreign co-director was responsible for financial capital and financial competencies (Cyprus Minerals JV at the Kubaka deposit in the Magadan Oblast); in a third case, a foreign specialist – responsible for foreign investment – was invited to the board of directors of a Russian arctic corporation.

The key event of the first period of “groping” for the contours of the new technological pattern in the extractive industry of the Russian Arctic, which ended in 1998 with the global financial and economic crisis, was a large-scale experimentation in Nenets Autonomous Okrug (NAO), the area of pioneering development of oil and oil-and-gas fields.

The next period, which began in the crisis year of 1998, was marked by the reintegration of technologically interconnected mining operations in the Arctic under the auspices of new private vertically integrated resource companies. PJSC Lukoil and PJSC MMC Norilsk Nickel, updating the principles of maritime logistics, implemented at this time large-scale programs for the construction of reinforced ice-class vessels.

It was during this period, after corporatization of the solutions found, creation of new and privatization of state-owned mining enterprises, that another important process began to unfold on a large scale, namely renewal of the traditional mining industries of the old industrial regions of the Arctic by switching to new technologies, often with a partial change of the former resource profile (from placer gold to ore gold in Chukotka Autonomous Okrug, to greater extraction of palladium, copper in the Norilsk ore, etc.).

The global financial and economic crisis of 2008 was the time when the previous stage of the formation of a new techno-economic paradigm, relying on the energy of newly created private vertically integrated companies, and the beginning of the stage of strengthening state corporate structures of development, which were the main actors in replicating the innovations of the fifth Kondratiev wave in the Arctic. It was during this period of separation of Gazprom Neft from PJSC Gazprom, delimitation of the regulatory and statutory reinforced Arctic from the weakly regulatory protected North, refusal to develop the Shtokman field and putting the Prirazlomnaya³ offshore ice-resistant platform into production that the contradictions of new and old technological and organizational solutions in the development of the Russian Arctic sharply increased. For example, between the Prirazlomnaya and Novy Port projects, which rely on offshore logistics, on the one hand, and the Bovanenkovo field development project, which relied on the traditional pipeline scheme of gas transportation that had been tested since the 1970s.

The year 2014 marked the end of the previous and the beginning of a new stage in the formation of the fifth Kondratiev wave in the Russian Arctic.

³ The prolonged postponement of the commissioning of the Prirazlomnaya project, apart from subjective reasons, can also be assessed more broadly – as the inability earlier than the 2000s to enter a new technical and economic paradigm in the extractive industry of the Russian Arctic.

The commissioning of the first LNG, Novatek's Yamal LNG project and the exponential growth of transportation volumes along the Northern Sea Route became a sign of aggressive establishment and victory of the new technological paradigm with its basic features: platform technologies of production and processing, shift work organization method, offshore logistics and remote control technologies.

Technological, organizational, institutional and even climate changes in this period “spurred” each other and provided establishment of a new format of advanced economic practices, advanced solutions in the form of the Yamal LNG project and the associated new port of Sabetta. It was during this period that the new technological paradigm showed its real strength (*Table*), although it has not yet been fully implemented.

The new technological way manifests itself in the new nature of the economic development of the resources and spaces in the Arctic, i.e. it is a transition to the development of either new natural resources in the old development areas, or new land and sea areas, where previously exploited natural resources are extracted, or new in the square, that is, the development of new resources in new spaces⁴. To move to a more concrete understanding of the mechanisms and key actors of the new technological mode establishment in the Arctic, it is necessary not zonal, on the scale of the entire Arctic zone of Russia, but the regional level of specific Arctic territories.

Nenets Autonomous Okrug – pilot site for deployment of a new technological paradigm in the Russian Arctic

In the first decade of Russia's reform, NAO became an area of pioneering economic development in the Russian Arctic and a place to introduce technological, organizational, institutional innovations, methods of socially responsible and

⁴ All schemes for the development of resource projects in the Arctic are described in detail in the article (Pilyasov, Putilova, 2020).

Stages of deployment of the fifth technological paradigm in the Russian Arctic

	Period				
	1980–1992	1992–1998	1998–2008	2008–2014	2014–2021
		Establishing a new paradigm			
Correlation of features of the old and new paradigm	Elimination of the old things	“Hatching” the new: the old is “bigger” than the new. Solo innovations. <i>The first innovators-entrepreneurs</i> . Opposition to the new in the form of resistance to reform. NAO is at the center of development innovations.	The old and the new are balanced. First attempts to cluster innovation (mining, processing, logistics). <i>Corporate imitators of innovators-entrepreneurs</i> . NAO is in the center of development innovations.	Setting a new paradigm: The new is “bigger than” the old. The clustering of innovation. <i>Second wave state corporate imitators</i> . The beginning of the sharp divergence of old and new development in the Arctic, greenfield and brownfield projects. NAO is in the center of development innovations.	Explosive growth of the new: the new suppresses the old. Fracture into pipe gas and LNG production zones. Strong economic and social polarization and sharp contrasts of the new and the old. <i>Aggressive establishment of a new paradigm</i> . Yamalo-Nenets Autonomous Okrug (YNAO) and Chukotka Autonomous Okrug (ChAO) are in the center of development innovations.
Key Events	Resource crisis in the old industrial areas of the Arctic and the North	Denationalization (fragmentation) and privatization of state industrial enterprises. The search for new production and logistics solutions by new economic actors. Dismantling and restructuring of old infrastructure in the form of small railroads, airfields, port points, single-industry settlements, etc. Pioneering new organizational (PSA), manufacturing and marine logistics solutions by small and medium-sized enterprises in NAO.	Corporatization of key natural assets in the Arctic. Start of transition to offshore logistics for large greenfield projects (Lukoil’s Varandey Fixed Offshore Ice-Resistant Offloading Terminal (FOIROT) as a pilot project). Continued dismantling and restructuring of the infrastructure of the former industrial development.	State corporatization of maritime development of the Arctic. Shelf mania for the acquisition of license areas by state-owned companies. Start of experiments with smart marine logistics and platform production technologies by Gazpromneft in the Novoportovskoye (YNAO) and Prirazlomnoye (NAO) projects. Beginning the development of the Bovanenkovskoye field (YNAO) in the old southern pipeline export scheme and the Mayskoye gold deposit (ChAO) on new production technologies and old logistics schemes. Development of the Kupol deposit (ChAO) on new production and logistics technologies.	Boom of launched LNG and new “best practice” oil projects (Vostok Oil, etc.) relying on offshore logistics. “LNG mania”. <i>Sabetta’s “Big Bang” is the beginning of a new technological revolution in the Russian Arctic</i> . Start of development of the Baim ore zone (ChAO). Multiple growth in the volume of freight traffic along the Northern Sea Route. Formation of a new super organization for the modern development of the Arctic – Rosatom State Corporation, with innovative potential in mining, transport logistics and energy supply of new resource projects.

End of Table

	Period				
	1980–1992	1992–1998	1998–2008	2008–2014	2014–2021
		Establishing a new paradigm			
Arctic regions of the main events of the new technological revolution		Linking technological change in the Arctic with political, economic, and managerial reforms in Russia.	Rejuvenation of aged extractive industries and resource provinces in the Murmansk and Arkhangelsk oblasts, the Norilsk industrial district, and the Republic of Sakha (Yakutia) through the transition to the development of new natural sites in old places of economic activity (gas condensate, copper, palladium, ore gold, etc.).	Active financing of new projects by European and Asian foreign investors in YNAO, ChAO and Taymyr.	Active financing of new projects by European and Asian foreign investors in YNAO, ChAO and Taymyr.
The relationship between financial and productive capital		The distinction between financial managers and “red” production directors. Foreign and Russian financial capital helps new entrepreneurs to experiment with a new paradigm, “loosening” the inertia of previous development (“path dependence”).	The distinction between financial and production capital, financial managers and production directors.	Start of connecting financial capital with production capital. Foreign financial capital in major Arctic projects.	Merging financial capital with production capital. Foreign financial capital in selected projects.
Backbone ICT infrastructure of the new paradigm	–	–	–	Active establishment	Creation of new ICT infrastructure for greenfield and brownfield resource projects. Digital Transformation of Arctic Corporations. Digital twins of real processes.
Source: own compilation.					

environmentally balanced nature management, which was associated with the formation of a new techno-economic paradigm in the Arctic⁵. Its features emerged here earlier and more clearly than in other Russian Arctic territories. Why did this happen?

The usual answers to this question consist of a reference to the phenomenon of development “from scratch”, unencumbered by material assets and ingrained notions of the former industrial age, which worked well in that era, but are rather a brake on the new one. There was no such important factor in the rest of the Arctic autonomous okrugs and regions, which started active economic development decades earlier, but it alone cannot explain the phenomenon of NAO as a launching pad for the whole Russian Arctic.

Another circumstance often referred to is the lack of political independence, full-fledged subjectivity within the Russian Federation, which provided the new team of regional authorities with unprecedented powers in the management of regional development (for example, the right to use the regional quota of oil production to finance the socio-economic development of the region) and, even more important from the perspective of the new technological paradigm, full participation in all negotiations on new mining projects, which are about to be implemented. Other autonomous regions of the Arctic, which became independent subjects of the Russian Federation, also received unprecedented rights in the early 1990s, but did not become a testing ground for the new technological paradigm at that time.

Regional innovation-friendly environment: diversity, basic relationships, space

We are dealing with the complex phenomenon of the “positive selection” of the region as a pioneer of the new technological paradigm in the Russian Arctic, which cannot be explained by any single

factor, even the most obviously favorable. It must be a system of interrelated factors and circumstances that led to the final result: the phenomenon of Silicon Valley described in detail (Saxenian, 1994) pushes us to this view: researchers note that its “spontaneous” appointment as the pioneering leader of American computerization and the fact that it outperformed the former recognized leader, Boston, Massachusetts, is the result not of a single factor, but of a systematically working group of factors that shaped the environment of experimentation promotion in which the conditions for mass adoption of computer innovations emerged.

In the case under consideration, we are not looking for a single factor, but for a group of factors-causes that were able to form an environment for encouraging experiments (both successful and unsuccessful, forgotten), and from this environment, success stories and best practices were “selected” and then replicated in the rest of the Arctic. The initial favorable circumstance for its formation was the exceptional diversity of natural assets – oil, oil-and-gas and oil-gas-condensate fields of the northern Timan-Pechora Basin⁶.

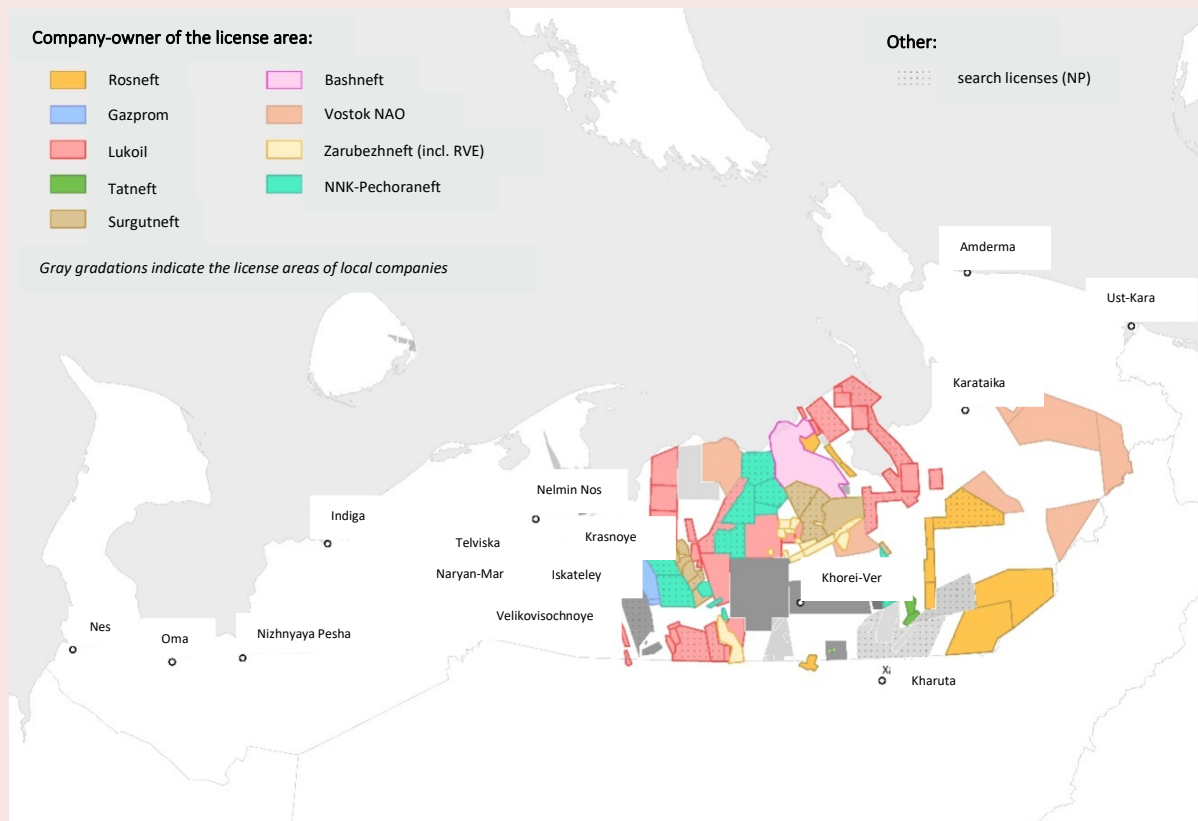
Radical differences of natural assets of the region from field to field (in sulfur content, viscosity, density, etc.) and high specificity of many of them have caused a “one-off” approach to each resource object and, accordingly, affected the large number of subsoil users in a relatively small mining area in comparison with other regions (*Fig. 1*).

What was a curse in Soviet industrial times, which delayed the economic development of the autonomous district in the 1980s (for example, the Ardalin field was discovered back in the 1980s, and became a mining project in the mid-1990s): medium and small reserves with significant uniqueness of features of each natural object and the frequent

⁵ *Nenets Autonomous Okrug: Territory of Paradoxes*. Moscow: Institute for Regional Consulting, 2022.

⁶ Many researchers of Nenets Autonomous Okrug write about it, for example: “The characteristic feature of the northern part of the Timan-Pechora Basin is a large number of deposits with medium and small reserves” (Ilyumzhinov, 2003).

The environment of organizational diversity in NAO oil and gas sector



The layout of the license areas of key oil and gas production companies in Nenets Autonomous Okrug is a constructive condition for institutional and organizational diversity as a catalyst for the establishment of a new way of oil production.

Source: data from the Federal Agency for Subsoil Use for 2016.

Cartography: R.V. Goncharov, Candidate of Sciences (Geography).

presence of not homogeneous, but mixed natural assets, which the industrial late Soviet economy, set up to obtain the effect of saving on size, simply could not take (homogeneous in methane and oil were in vogue, without “impurities”, the “right” fields of Yamal and the Khanty) – in the new economic era has become a condition for unique technological, organizational, logistical and institutional diversity, and this is the best environment for experimentation and innovation, for the formation of a new paradigm.

If the development of NAO had begun in Soviet times, the natural diversity of the fields would have been “drowned out” by a unified organizational

scheme of development – one state company for the entire oil and gas territory. In the context of the new Russia, privatization of subsoil use rights and the initial autonomization of grassroots mining economic structures (under the pioneering development of NAO as a result of the arrival of new international companies and consortia of large foreign companies and Russian participants; in the old-developed Arctic territories, such as the Murmansk and Archangel oblasts – as a result of denationalization of old Soviet heads and trusts) this initial diversity of natural objects in their properties was, by contrast, emphasized at the expense of the emergence of different subsoil users.

The diversity of natural sites and their owners played the same role for the selection of NAO as a pilot site for a new technological paradigm as did dozens of Silicon Valley IT venture capital firms: in both cases, diversity was a condition for the formation of an environment of continuous, cascading innovation search and experimentation, in the roadless NAO in mining and especially logistics. The dual scheme of traditional “southern” pipeline and new sea transportation of hydrocarbons “according to the temporary scheme” (developed by the efforts of small subsoil users), which was timidly outlined already in the first years of NAO development, played an exceptional role for the subsequent approval of the principles of the new technological mode in the Russian Arctic.

In the innovation search of the first years of the economic development of NAO, the defeats meant no less, and even more than the best practices of the established projects, for the interrupted unsuccessful experiments consolidated the priority and significance of the victorious ones. The “spontaneous rightness” of the real situation was that the failures helped to select those projects and solutions that became temporary monopolists of luck. If the environment of mass experimental search was maintained for a long time, the resources of natural assets would not be enough for everyone, and destructive rather than creative competition with all the negative costs (destruction of competitors, corruption of state bodies to guarantee the appointment of winners, etc.) could take place.

Why this diversity of subsoil use structures and institutions was not quickly “extinguished” by the regional authorities, the Arkhangelsk Oblast, the federal center, the large monopolistic subsoil user? The regional authorities in the first years of the new development of NAO, led by the first governor Yu.V. Komarovskii, were aimed at unleashing the forces of territorial economic development and maximizing the social benefits of this process (Komarovskii, 2014). Unlike other Arctic regions, including autonomous okrugs, in NAO the radical

transformation of the 1990s began in the conditions of pioneering development of unique natural oil assets, but without the presence of large corporate structures. That is, the local authorities had *carte blanche* to pursue an independent economic policy to a greater extent than the authorities of all other Arctic regions.

It was the regional government that secured the structural diversity important for innovation with a friendly environment, which was formed primarily by relations with the federal center, the Arkhangelsk Oblast, and the key subsoil users of the region. The common feature of all these relations was a constructive ambivalence, which implied the peaceful coexistence of elements of the old and the new (to go right through with the new would mean the destruction of the very possibility of experimentation).

Since the end of 1991, the autonomous okrug received considerable freedom in making economic decisions, such as the right to use the regional oil quota for socio-economic development. This freedom was constructively channeled by the regional authorities to encourage the development of natural resources in new forms and schemes that have been discovered and become possible.

Along with the general newfound independence compared to other autonomous districts of the Arctic, NAO had a number of important advantages in its relations with the federal center. Geographical proximity to the federal centers of decision-making was combined here with a total roadlessness, which meant, first, the ease of lobbying local decisions in the key centers of the country (the Presidential Administration, the Russian Government, the State Duma and the Federation Council), and second, the difficulties of bureaucratic control and guardianship of ongoing economic processes by federal ministries and agencies: it was more difficult to stop the experiments here. The “internal” position of NAO, as compared to the geopolitically sensitive ChAO, also favored the formation of effective working relations with the federal center.

Constructive ambivalence, which did not lead to conflicts (often in other cases they simply stopped all innovation experimentation), persisted for a long time in the relations of NAO as a new constituent entity of the Russian Federation with the “parent” Arkhangelsk Oblast. The newly-formed oil and gas constituent entity of the Russian Federation was economically stronger than the timber-producing region: “in 1993, as the first NAO Governor notes in his book of memoirs, more housing was built in the district than in all the districts of the Arkhangelsk Oblast combined” (Komarovskii, 2014). A different situation was observed in Chukotka Autonomous Okrug, which, being economically weaker than the “parent” Magadan Oblast, immediately and decisively broke with it, thereby losing the opportunity to support its economic initiatives in the early years of the reform.

NAO, on the one hand, had unprecedented new rights as compared to the Soviet past; on the other hand, it had an unfinished process of separation from the Arkhangelsk Oblast, which allowed receiving support from the Oblast for all of its initiatives. Undocumented independence, which is traditionally considered a brake on reform and innovation, in fact, in the first stage of the timid formation of the new paradigm can be a blessing, because it allows receiving support of the “parent structure” in the most difficult early years, forms the conditions for the subsequent unconflicted isolation. In the classical situation of the relationship between the parent structure and the innovation spin-off that has “hatched” from it, the conditions for its success are not only high independence in making innovation decisions, but also a conflict-free, peaceful relationship with the “parent”, which is not easy to create, but they guarantee the successful formation of a new paradigm.

In the second half of the 1990s, PJSC Lukoil came to NAO, which in the 2000s became the largest actor in local subsoil use. In NAO, the local authorities met him cautiously and immediately

began to strengthen the main structure of local subsoil use – the Nenets Oil Company. For this reason, but primarily because of the presence of other medium-sized subsoil users and significant political influence, Lukoil was unable to obtain all of the oil and gas assets here and thus turn Nenets Autonomous Okrug into its own monoprofile corporate territory.

It was the conditions of constructive duality – the largest, but not monopolistic – that ensured later, when Lukoil absorbed all small subsoil users and joint ventures (including the most important ones – Arkhangelskgeoldobycha (1997) and KomiTEK (1999)), its unexpected and constructive behavior for the okrug and the Arctic: it did not stop the innovation search, did not go for the “pipeline” proven logistics solution, as many experts thought⁷, but consolidated the new offshore logistics of hydrocarbons export in the large-scale project of the Varandey Terminal.

The NAO territory was exceptionally favorable for the most radical innovations. The eastern zone of economic development lay outside the (western) territories of traditional settlement, including the indigenous peoples of the North and the Pomors. This means that the conflict over the land claims of the peoples of the North on historical ancestral territories was initially excluded, which significantly increased the investment attractiveness of natural assets for foreign investors.

The Timan-Pechora Basin extends to the south into the Komi Republic, and these are long-exploited and depleted natural assets; to the north, NAO, and these are young and fresh field assets. If the entire province were part of the Komi Republic, there would be no such innovation-friendly environment in its young north.

⁷ “It seems to be more advantageous for Lukoil, which plans to produce oil on the continental part of the Timan-Pechora Basin, to transport oil to Murmansk in the usual way using the pipeline system rather than by small- and medium-tonnage tankers in the ice conditions of the Barents and Pechora seas...”. (Toskunina, 2003, p. 242).

On the other hand, there was a division of the region into two resource bases: the northern part of the Timan-Pechora Basin extending from the south, from the Komi Republic, and the coastal Barents Sea part⁸. We can say that there was a natural zoning of the territory according to the degree of readiness for the new paradigm: the southern natural assets relied on traditional pipeline logistics, and the northern ones on the new maritime logistics. Unfortunately, in subsequent years this logically substantiated scheme was disrupted: “almost in parallel with each other, but in different directions, oil is transported through the Kharyaga – Varandey oil pipeline (Lukoil, from south to north through the Yuzhnoye Khylochuyu field) and from the Val Gamburtsev fields (Khasyreiskoye field) to the Baganskoye field (Rosneft, from north to south), *breaking the previously established structure of oil exports from the northern fields of the Okrug – through the Varandey Terminal, from the southern fields – through the structure of Transneft oil pipelines*⁹.

NAO is the least populous region of Russia. But this means that there were very few potential resisters to the new things in place. And this again gave the local authorities carte blanche to encourage the boldest and most radical innovations in the 1990s.

“Spontaneous Venture” and corporate stages of the pioneering development of NAO

During the pioneering oil-industrial development of NAO it is important to distinguish two stages: the first, 1992–1999 – collective experimentation of small and medium firms and joint ventures, and the second, 2000–2008 – the corporate materialization of the previously found innovation solutions of Lukoil and other large companies. The forces and effects that worked in the first and second stages were completely different.

⁸ *Nenets Autonomous Okrug. Modern State and Prospects of Development*. Saint Petersburg: State Polar Academy. 2005.

⁹ *Nenets Autonomous Okrug: Territory of Paradoxes*. Moscow: Institute for Regional Consulting. 2022.

First, the most important was the diversity effect of the work of small and medium subsoil users, and then the economy of the corporate scale of production.

For the first time in Russia, in 1992 a joint Russian-American enterprise Polar Lights (Arkhangelskgeologiya and Conoco corporation) was created for the production of oil within Ardalin project, which became the first in Russia example of using foreign drilling technology in the Arctic – only in winter, with specially frozen snow and ice platforms¹⁰, so that the vegetation cover is not damaged and the tundra is not covered with “scars” from heavy machinery. A year and a half later, in August 1994, the pioneering Ardalin project of new oil development provided the first tons of oil. The project relied on the traditional pipeline export scheme: a special pipeline from the Ardalinskoye field to Kharyaga, 64 km long, was built for it. The Ardalin project became a place for preparing a new generation of specialists, trained to comply with environmental standards (Komarovskii, 2014) as an imperative of the new technological order, who subsequently worked at other Arctic enterprises (and the experience gained here was transferred further, to new Arctic projects).

At the end of 1995 an agreement was signed to develop the second major project of new oil industry development – Kharyaginskoye, which since January 1999 was implemented on the terms of production sharing agreements (PSA): NAO became a pioneer in the Russian Federation in introducing a co-financing scheme for field development with foreign partners¹¹. Implementing the idea of a host region, in 1998 the authorities of the autonomous district created the Nenets Oil and Gas Company (NOC), which became a full participant in the PSA along with StatoilNorskHydro (Norway) and Total E&P Russie (France). In 2009 Zarubezhneft joined the project.

¹⁰ See: <http://www.oilru.com/nr/79/774/>

¹¹ See: <http://nnk.noilco.ru/projects/>

The geological unity of the north and south of the Timan-Pechora Basin inevitably pushed the planners to continue the already established pipeline scheme to export NAO oil onshore and even offshore through the existing pipeline system to the south through the Komi Republic. It is not surprising that the first projects of oil-industrial development of the NAO (Ardalinsky and Kharyaginsky) were carried out exactly in this ideology. The oil from them was supplied by pipeline to Ukhta and then through the system of trunk pipelines to the west.

In order to start thinking in new categories, the existing alternative to the official traditional pipeline scheme in the form of a semi-legal maritime temporary oil export scheme was crucial, already in the early 1990s. Simultaneously with the pipeline, there was also a “capillary” modest and incomparable in terms of the volume of unloading (“experimental”) experience of exporting oil from the Peschanoozerskoye field on Kolguev Island by tankers. It allowed thinking that offshore transportation in significantly larger volumes might be possible for the “mainland” projects of the northern Timan-Pechora Basin, located in NAO. Without the Kolguev project, there would be no Varandey terminal or the entire maritime logistics of Arctic oil exports.

As small- and joint-venture owners came to the new maritime fields, the question of finding a suitable offshore terminal for exporting oil inevitably became more pronounced. In order to consolidate the efforts of the new owners and work out the optimal marine scheme and location for the terminal (primarily on the criterion of minimizing the length of pipeline transportation to it from the fields and the geographical convenience of the location), the Northern Gateway terminal project emerged. After several iterations, three options for terminal location were proposed: Indiga, Kolguev (Kaninsky), Varandey (Toskunina, 2003).

In competition with the Indiga and Kaninsky, the Varandey option had the advantage of minimal overland pipeline transportation of oil from the fields in the northern part of NAO (Toskunina, 2003) to the terminal along the Malozemelskaya and Timan tundra (it provided minimal impact on fauna and plant landscapes), that is, it was an option that relied on maritime transportation to a maximum extent.

The Varandey Terminal as the best location won out. However, it remained unclear who exactly would implement this option. The fact is that many experts doubted that Lukoil, which by that time had already become the leader of NAO oil production, would decide on new offshore logistics. Another thing was the experimental temporary oil loading near Varandey (already operated in 2000), which was easier to do, but it did not solve the problem of multi-million dollar oil loading, because such volumes required more powerful tankers, which could not approach the Varandey shallow water – so the terminal had to be stretched tens of kilometers from land, which dramatically increased the cost of the entire project, but ensured an order of magnitude of oil transshipment volumes.

But whether Lukoil would go for this “full-fledged” option was not obvious. In the Varandey area, the land passes almost imperceptibly into the sea, the depths are shallow, and the construction of a traditional oil port on land would require extremely costly dredging (there is a port, but it is not suitable for tankers). Lukoil decided to move the terminal 22 km offshore; the oil is transported by pipeline to the Fixed Offshore Ice-Resistant Offloading Terminal (FOIROT), and from the pier it is reloaded onto tankers. FOIROT was built in 2008.

The main success of the NAO was that, despite the radical changes in the nature of development in the first and second stages, the continuity of decisions was preserved, and this was due to the

conditions of structural diversity (incomplete monopoly of Lukoil), long-term key decisions made in the early 1990s, which could not be reversed – that is, the constructive dependence on the path. The transition from a small business to a major player has not broken the logic, it has preserved the continuity of the innovative maritime logistics solution, which Lukoil has made systematic: a deepwater Varandey terminal, specialized ice-class ships with partial icebreaker escort, a transshipment terminal from ice-class ships to ordinary cargo ships in the Kola Bay.

In terms of the sustainability of the regional system included in the experiment, there is the notion of excessive diversity, which can be devastating for the experiment itself, destructive for it and the new technological order associated with it. That is why the completion of the diversity phase in the early 2000s and the simultaneous promotion of Lukoil, which by then absorbed the bulk of the small subsoil users of the Autonomous Okrug, to the role of the superstructure of the economic development of the Autonomous Okrug was constructive. It was Lukoil that had sufficient investment resources to quickly implement a system-wide transition to revolutionary maritime logistics – a key element of the new technological order in the Russian Arctic. It provided continuity between the pioneering “temporary scheme” of offshore oil export by small and medium-sized firms in the first phase of pioneering development and the “monumental” solution in the form of the Varandey Terminal in the second phase of pioneering development of NAO.

For the new technological mode, all the details of the maritime logistics scheme, developed in the early years of new NAO projects, were of fundamental importance and had a huge potential for replication. If only a new system of marine logistics with all its elements were “invented” in NAO, it would already be a revolutionary

contribution to the establishment of a new technological paradigm in the Russian Arctic.

Murmansk Oblast: Reasons for the brakes on the implementation of the new technological paradigm

Among the old industrial regions of the Arctic, the Murmansk Oblast is of particular interest in terms of the formation of a new technological paradigm, as it was the leading region of the Soviet industrial Arctic. The process of its turnaround from the former technological paradigm to a new one, from the large city-forming enterprises of the Soviet time, the extreme military closeness to the new projects of offshore development of NovaTEK and the realities of corporate development, was very long, and the obstacles arising on this way showed up in maximum relief.

Period of denationalization, privatization and investment crash (1992–2004)

The process of privatization of large state-owned mining and processing plants and their separation into independent economic cells and the process of “assembly” into branches – structural subdivisions of new Russian private holdings were accompanied by a long gap, during which the enterprises had illusions about the possibility of independent, autonomous survival in the new market conditions, and emerging large holdings had doubts about the attractiveness of Murmansk assets for acquisition, despite the global and all-Russian importance of most minerals on the Kola Peninsula (apatites, iron ores, copper-nickel ores, rare-earth metals), due to the significant burden of old industrial material assets and numerous social obligations. At a time when in other regions the new owners had already begun to implement their investment program, had been engaged in the superficial modernization of material assets and the transformation of basic business processes, in the single-industry towns of the Murmansk Oblast the structural changes at the main city-forming mining enterprises were still in progress.

There were opportunities to turn to a new paradigm in the traditional mining complex of the region – due to the arrival of foreign companies to the new development from scratch. During this period of “open door policy” for potential foreign partners, the Finnish company Outokumpu studied the prospects of developing the poor copper-nickel ores of the Lovozero deposit in the Pechengsky District; Australian BHP together with JSC Pana and the Kola Science Center of RAS conducted geological prospecting work for platinum and palladium in the Fedorovo Tundra and Pana massifs, while the Swedish concern Boliden obtained a license for exploration of molybdenum, silver and gold deposits in the Kolmozero-Voronya area in the Lovozero District; The Norwegian firm Elkem participated in supplementary exploration of chromite ores at the Bolshaya Varaka deposit in the Apatity region (Didyk, Ryabova, 2012); The Norwegian AO Khustkalk jointly with ZAO North-West Phosphorous Company and Kola Science Centre of RAS studied the possibility of organizing a joint venture on the coast of the Barents Sea to produce cement and alumina based on Khibiny nepheline and marble from the Askelberg deposit (Vinogradov, 2011). Many years of rosy hopes of effective cooperation during the development of oil and gas resources of the Barents Sea shelf at the edge of the century were associated with long-term plans of interaction between JSC Rosshelf and PJSC Gazprom (Murmansk) with such major multinational companies as Total, BP and STATOIL in the development of the Shtokman gas condensate field–giant with the formation of coastal logistics base on the Murmansk coast (Selin et al., 2008). Unfortunately, none of the above-mentioned areas has progressed beyond pre-project studies and prospecting and exploration work, which is unlike, for example, Chukotka Autonomous Okrug and the Magadan Oblast, where during this period joint ventures emerged at investment-attractive mining sites, which became

the harbingers of features of the new technological paradigm in the basing regions.

Foreign capital, for specific reasons (primarily the conservatism of the local mining lobby, which is unfriendly to outsiders) did not become an agent of change in the first stage of transformations, which in the region was limited to institutional, but not technological, reforms. When a rare mining investor emerged in the region, they were pushed out with accusations that they were coming into an already established infrastructure, that is, opportunistically exploiting the Jack London effect (Huskey, 2017).

The paradoxical situation was that the Murmansk Oblast had at the beginning of the 21st century the most developed and advanced scientific and technological potential among all the Arctic regions of Russia and subarctic states, and the program of transition to the new technological paradigm was quite clearly outlined and substantiated in the works of the largest at the time Arctic scientific institution – the Kola Science Center of RAS (Kalinnikov, Vinogradov, 2005; Kalinnikov, Vinogradov, 2012). An in-depth analysis of the reasons for the stalling of innovation showed that the key drivers of progressive evolution were inside, not outside, the local production system at the time. In an attempt to find these endogenous causes, we analyzed the structure of the research work of the basic regional economic division of the Murmansk Oblast – the Institute of Economic Problems of the Kola Science Center of RAS¹².

Already in the topics of five-year research works (R&D) in the early 1990s¹³, the priority of the development of offshore oil and gas fields in the West Arctic regions is noticeable, which goes beyond only the Shtokman project to a systematic

¹² We use the data from the monograph: *The Arctic in the Research of the Luzin Institute for Economic Studies of the KSC of RAS: Thirty Years of Scientific Search*. (2017). Ryabova L.A., Bashmakova E.P. (Eds.). Apatity: Izd. KSC RAS.

¹³ For example, the topic “Comprehensive Assessment and Determination of Resource Development Strategy for the European Arctic”.

awareness of the potential role of the Murmansk Oblast in this new coastal and offshore development of Western Arctic resources. Another powerful theme, absolutely consonant with the imperative of the new technological paradigm, was the regional industrial and innovation policy in the North. It was set in the studies of the Institute of Economic Problems already in the early 2000s (in a narrower format – for the mining complex – even in the theme of research 1991–1995). At the same time, the topic of creating the Apatity Technopark was put forward, but was also not implemented in practice. Back in the 1990s, regional experts foresaw quite accurately what kinds of activities would be associated with the formation of a new technological paradigm. But then the question arises: what is the reason for the stalling of its implementation in the Murmansk Oblast?

The first window of opportunity associated with unprecedented decentralization and new rights of the regions, the Murmansk Oblast could not use, because there were no free natural assets, small in size and therefore attractive to investment-poor small and medium firms, which in other regions carried out on these objects the first experiments with elements of the new paradigm. Such enterprises appeared in the region, but only in the field of geological exploration, and never reached the stage of mining operations due to the resistance of the local mining lobby, which gained unprecedented rights during this period due to privatization and corporatization. Later, the strength of resistance to change increased in direct proportion to the degree of monopolization of the national market by Murmansk enterprises, and it was large for each enterprise in its market niche.

Local experts did not see these small firms as real agents of change because they were traditionally used to the dominance of large military and civilian structures in the field. So, on the part of regional economic science, which in general correctly assesses the main vector of movement toward a

new paradigm, has not matured an understanding of the specific actors who could stir up the local atmosphere and become the first drivers of change.

Thus, the main trouble of the Murmansk Oblast during this period was not the protracted privatization of the main city-forming enterprises, but the implicit, yet powerful containment of the transformation process. The main problem was that a new mass layer of small and medium-sized subsoil users has not emerged. It is this non-traditional for the regional economy group of economic entities could enter the production of new types of minerals or old, but with new technologies on new license areas. However, the whole system of local subsoil use resisted their mass arrival.

According to local experts, the large enterprises of the Murmansk Oblast themselves, “holding a monopolistic position in the market, are not always interested in intensive innovation development and often consider innovation activities as optional, which distracts from achieving the main objectives, including the maximum profit” (Tsukerman, Goryachevskaya, 2020). As local monopolists, they limited the entry of new actors into the region and the transfer of old and new license areas of promising fields to them, which was the main reason for the temporary stalling and super-slow maturation of the new paradigm elements in the region’s economy during this period.

The period of surface modernization (restructuring) of mining enterprises in the region (2004–2012)

The ranking of the innovation climate of the “Expert-RA” agency from 2000 to 2014 records the deterioration of the Murmansk Oblast, which moved from 35th place to 55th in the circle of all Russian regions. At the same time, another old industrial territory of the Russian Arctic, the Arkhangelsk Oblast, improved its position (primarily due to the new federal university NARFU, established during this period), rising from 46th

to 39th place¹⁴ (Mechanism of Coordination..., 2016, p. 54). A leading expert on the development of the Murmansk Oblast, Professor V.S. Selin writes about “walking around in a circle and the reproduction of previous delusions” (Mechanism of Coordination..., 2016, p. 27) as a phenomenon of old industrial territories, which can be fully attributed to this period of development of the Murmansk Oblast.

The structure-forming enterprises of the Murmansk Oblast: Kola Mining and Metallurgical Company, OJSC Olkon, OJSC Kovdorsky GOK, OJSC Apatit – became part of federal holdings and became dependent on their investment programs, i.e. were mostly limited to “light” unburdening modernization in the form of purchasing imported equipment, transferring many types of work to outsourcing, reduction of employees and partial transition to the shift work organization method. There was no strategic restructuring of the Murmansk enterprises during this period.

The main bet was made on the renewal of technology and the reduction of employment. That is, there was no talk about the transition to a new technological way of life with the necessary revolutionary innovations, rather than operational budgeting in the interests of maximizing profits and cutting investment and social programs. This period worked very poorly to solve the problems of establishing a new technological paradigm in the Murmansk Oblast, although it was then that the issue of “active industrial policy aimed at the establishment and development of new technological paradigms in the European North of Russia” was first declared as the topic of the Institute of Economic Problems in 2008–2010 (research supervisor V.S. Selin). It was blocked together with the developments on innovation industrial policy, innovation industrialization, modernization, regional science and technology

and innovation complex, which were carried out at the Institute at that time. There were works on the strategy of marine activities in the Russian Arctic, on the Western Arctic shelf areas, and an assessment of the regional effects of the Shtokman project (for which there were hopes) and the LNG plant in Vidyaevo. Gradually the understanding has been formed, what exactly the new technological paradigm in the Murmansk Oblast will be connected with: of course, with an active innovation industrial policy, new types of marine activities, which will “refresh” and give the local economy a new development tone, as well as with the formation in the region of the national center for providing high-tech industries of Russian industry with rare metal and rare earth components of strategic importance (Selin et al., 2006; etc.).

The period of deep modernization and the region’s entry into a new technological paradigm (2012 – present)

Within this period, in terms of the radicality of transformations, it is important to distinguish between the first stage of rejuvenation of the existing decades-long development path, which was carried out by new actors who came to the region (they are the ones who started this process) and local actors; and the stage of creating a radical new path associated with the arrival of NovaTEK and its project of the Large-Scale Marine Facilities Construction Center (LSMFCC) in the Murmansk Oblast.

In 2005, the North-Western Phosphorous Company (NWPC), a subsidiary of Acron, was established in the region. Initially, its activities had little effect on the interests of the “grandees” of the mining business operating in the region: for the first few years it bought apatite concentrate from Apatit and was totally dependent on its monopolistic pricing. But that all changed when LSMFCC launched its own production of apatite concentrate at the resources of the Oleniy Ruchey deposit in 2012.

¹⁴ Ratings of investment attractiveness of Russian regions.

The significance of this project was absolutely revolutionary for the very conservative environment of the region's mining industry. From that moment the real, long-delayed, deep organizational and technological changes at the region's mining enterprises began. The strength of new projects in the old industrial region (and by the "volume" of their impact they differ from new projects in the pioneering development area, where the process is "from scratch") was that even without significant economic effects on the regional economy in the form of new employment and budget revenue flow they have a profound mental impact on the production atmosphere, on the atmosphere of economic management in the region.

The success of the external competitor broke the monopolistic immobility of the environment and stimulated the introduction of technological, organizational, and personnel innovations at the Murmansk mining enterprises (transition from purchase of new equipment to reconstruction of old factories and implementation of new business processes and their total digitization, attraction of drive-in-drive-out workers, outsourcing of non-core activities, development of new fields within the framework of long-standing license areas, etc.). The stimulus for the regional authorities to encourage these processes was the final closure of the Shtokman project for an indefinite period (until the 2030s).

An indirect criterion of the depth of modernization of production processes is the fact that for the first time the issue of innovation modernization began to merge with the issue of development of single-industry towns in the Institute of Economic Problems. For the first time, an agreement was concluded between the region and PhosAgro to support innovation activities for ten years (2016–2026). The studies outlined the complex phenomenon of regional innovation system, including in the context of interaction between mining corporations and the region in the

formation of innovation policy (in general, the topic of corporations in the aspect of innovation transformation has received more attention), the concept of intelligent field was formulated, the topic of small businesses as an agent of innovation transformation was raised, etc. The phenomenon of the Murmansk Oblast as an old industrial territory with its own typical blocks of innovation development (primarily the phenomenon of path dependence) was comprehended. There has been a transition from the general absolutely correct formulations of the directions of new development, made by regional experts back in the 1990s, to an understanding of the main actors, institutions and systems, in which the transition of the region's economy to the new technological mode should be carried out.

In the 2020s, NovaTEK commissioned the LNG Construction Center (LNGCC) in the Kola Bay of the Barents Sea (Belokamenka settlement). In terms of "discovering" a new technological path of the region's development, we can call this project an analogue of Shtokman. It has become a real fact of forming a new technological paradigm: the construction of a gravity platform plant for LNG production integrates the region into that new production, which is already developing in the first Arctic projects in Yamal-Nenets Autonomous Okrug.

There is a paradox in the recent economic history of the Murmansk Oblast that favorable factors (the cross-border position potentially promising spillover of knowledge, competences and technologies, a powerful warm-water port, the richest mineral and raw material base of the Khibins, the relative proximity to the federal capitals) started working to slow down rather than to speed up radical technological modernization on the principles of the new paradigm: proximity to European Union countries and federal capitals contributed to the outflow of young enterprising personnel (a total of hundreds of thousands of

people left the Murmansk Oblast during the first two decades of reforms); hopes for large-scale foreign investment from neighboring countries have also failed; the region's rich mineral resource base has been used to generate profits at the headquarters of federal holdings, but not for an active and innovative investment policy in the mining and industrial complex of the region itself. On the contrary, local city-forming enterprises, wanting to maintain a monopoly position in their markets, prevented the emergence of new external players.

What local experts call the vice of "weak diversification" and "the policy of continuing narrow specialization" (Didyk, Ryabova, 2012, p. 64) is actually the phenomenon of "path dependence" and "development blockages" described in the world literature (Zamyatina, Pilyasov, 2015), which in the specific case of the Murmansk Oblast for two decades has stalled its progress toward the new technological paradigm, which has numerous favorable conditions to take place relatively quickly here.

Comparison of the formation of a new paradigm in NAO and the Murmansk Oblast

The main events in NAO took place in 1992–2008, after which the development on a new path entered a calm (stable) direction. On the other hand, in the Murmansk Oblast the main events began to unfold with increasing intensity already in the 2010s, when the arrival of new actors, including those in completely new economic activities for the region, finally broke the inertia of dependence on the past path and put the region on the path of the formation of a new technological paradigm.

In NAO, where development was carried out "in a new way", without the creation of a stationary network of single-industry towns, they could not become independent participants in the process of technological modernization, and the capital Naryan-Mar played above all the role of an air base for transferring rotational workers to corporate vehicles for delivery to the field sites.

In the Murmansk Oblast, single-industry towns characterized the previously urban nature of the resource industries, and therefore a radical modernization of the industries was not possible without a radical renovation of the urban economy.

Comparing the Murmansk Oblast and Nenets Autonomous Okrug in terms of their development path over the past three decades raises the question of how the type of natural asset and the forms of its occurrence affect the pace of institutional and organizational change. All other things being equal, for the purposes of radical reform it is better to have small and medium-sized deposits, relatively easy to take, even in adverse transport and geographical conditions, which can be (easier) to work out by small and medium-sized business structures.

In this case, the small size, relatively high content of the useful component, its uniqueness by any parameter is more important than the convenience of logistics. The realities of the emergence of new projects in the Russian Arctic in the early years of reforms confirm that small businesses were able to find original and innovation logistics solutions, but they were not able to override the laws of nature and change the properties of existing natural assets.

The NAO's commitment to radical reforms in the 1990s was partly determined by the fact that small and medium hydrocarbon fields were organically adapted to the start of development by small and medium-sized subsoil use structures. On the other hand, large ("block") natural assets of the exploited ore deposits of the Kola Peninsula, on the contrary, made it difficult for small business structures to divide and split them. Thus, and from the properties of natural assets, there were factors inhibiting technological modernization in the Murmansk Oblast.

The type of natural resource also matters. Due to the fact that oil generates unprecedented rent compared to other natural resources (Etkind, 2020), NAO hydrocarbon deposits in the early years of

reforms “spilled” partial income into the region as well, which gave regional authorities the power of politically independent decisions – and if they were set up for an active industrial policy, this became a major positive factor for dynamic transformations. On the other hand, the mineral resources of the Murmansk Oblast could not generate a rent of comparable size. The degree of alienation of the region from the natural resources in its subsoil and the income generated from them (precisely because of its comparatively smaller size) was higher than in the Autonomous Okrug, where the comparative size of the rent is larger and the number of inhabitants is many times smaller.

The dependence of the authorities of the Murmansk Oblast on the federal decisions and support, its lack of independence in comparison with NAO authorities was much higher. For a long time it had neither financial resources, nor administrative weight to conduct an independent industrial policy.

In the process of technological modernization, the space of both regions was divided into a part that remained relatively conservative and retained the economic features of the former technological paradigm, and a significantly more dynamic part, which entered the process of technological reform, was due to many reasons more ready for it. Naturally, during the process of technological modernization, in both regions there was an internal production and technological zoning of the territory according to the degree of its readiness for the new paradigm.

In NAO, this is a rift into the coastal part of the Barents Sea, which fields were naturally exposed to the new maritime logistics, and the “southern” part, which remained faithful to the former pipeline logistics. In the Murmansk Oblast, this is a hinterland of old mining development consisting of numerous single-industry towns (Olenegorsk, Monchegorsk, Apatity, Kirovsk, Kandalaksha,

Kovdor, Zapolyarny) and the urban-type settlement Revda, on the one hand, – here for a long time there was only superficial technological modernization, and then updating the long-existing development path; on the other hand, the east of the Kola Peninsula and the Kola Bay, where the regional capital Murmansk and numerous closed towns (Severomorsk, Alexandrovsk, Zaozyorsk, Vidyaevo, Ostrovnoy) are located, where in the 2010s a new development path was being created: projects emerged in new types of activities (e.g., LSMFCC) or in the development of new mining license areas.

Obviously, the institutions and tools of industrial policy of the regional government, aimed at the formation of a new technological paradigm, must be adapted to each production and technological paradigm: for example, in the north of the Murmansk Oblast, it is critical to bring in new companies, while in the center it is critical to create industrial parks and strengthen the triple helix of science-business-government relations for the mass implementation of new technologies and the search for new opportunities in line with existing development paths.

Discussion and conclusions

The realities of the past 30 years in the socio-economic development of the regions of the Russian Arctic indicate a significant diversity, while the presence of common vectors, in the trajectories of their movement to a new technological paradigm based on information and communication technologies, remote control, artificial intelligence technologies and digitized business processes. The relative equality of development of the Russian Arctic territories achieved by the end of the Soviet industrial period was replaced by strong interregional contrasts when radical economic reforms began in the 1990s and deep institutional, technological, and organizational transformations were initiated.

These contrasts are natural for the stage of formation of a new technological paradigm and, on the one hand, are determined by different starting conditions of the regions included in the transformation; on the other hand, are associated with different speed, intensity of the transformation process, differences in the years of rapid deployment of mining projects, carried out in the ideology of the already new economic era. They determine the rapid displacement from the pedestal of the leaders of the former industrial era and the advancement of entirely new Arctic regions into the role of technological leaders.

The “code” for the formation of a new technological paradigm, common to all regions, is as follows.

1. Pilot projects play an enormous role in breaking the inertia of the former path in old industrial areas or shaping a new path in pioneering areas. As a rule, they do not yet have the radical innovation to have zonal (for the entire Arctic) replicability potential, they carry the features of the new and the old (for example, new “platform”, robotic mining, but old logistics). These new projects are very rarely implemented by the economic grunts of the former industrial era. As a rule, these are structures with varying degrees of organizational novelty: newly formed corporations, “daughters” (spin-offs or spin-outs) of old enterprises and production associations, joint ventures with a foreign participant, a layer of small and medium-sized businesses.

2. The pilot project launches the process of deep technological modernization not only by the fact of its appearance, but also by the formation of a new economic atmosphere in the region of its base, the “dissolution” of previous intellectual perceptions (and that is really already possible?). And it is no coincidence that the projects that follow have significantly more innovation and boldness, and thus the potential for replicability for the entire Arctic.

3. The process of technological modernization acquires genuine sustainability in a friendly environment, which is formed by efforts in the field of new industrial policy of regional authorities (in the old industrial regions – jointly with the authorities of single-industry towns). Success in the new industrial policy is determined not only (not so much) by the size of the financial resources in the hands of the local government, but by the formation of new relationships with the federal government, key companies in the region and local manufacturing businesses. These relations necessarily bear the stamp of constructive ambivalence, that is, a combination of tradition and innovation. Excessive traditionalism threatens conservatism, while excessive innovation can destroy the germs of a new paradigm in the region “in the bud”.

4. Regional authorities are required to be both persistent and patient in the difficult task of building an environment favorable to innovation. Without encouraging innovation and experimentation in the extraction, logistics, and marketing of natural resources, one cannot hope to form the foundations of a new technological paradigm. The fact is that one project out of a dozen is selected and “assigned” to flagships. But without a wide field of experiments, the final winner cannot be identified, officially recognized and administratively appointed as a demonstration site for the new technological paradigm.

5. A flagship project with significant potential for replication of its individual successful elements throughout the Arctic is usually implemented by a federally recognized corporate structure that materializes in practice the innovative ideas and approaches of small structures developed in the previous stages of development.

At the current level of knowledge about the ways of the Arctic regions’ entry into the new (information) technological paradigm, the following questions seem insufficiently elaborated:

- which specific material and socio-cultural (institutional) factors ensure the transition from individual atomic projects of the new technological era to its takeover of the entire region, and how these factors differ from one Arctic region to another;
 - whether it is possible to significantly influence the speed of deployment of the new technological paradigm (turn on the “turbo” button) in the Arctic regions and what measures/structures/institutions of the regional and federal authorities;
 - if we consider the development of the Arctic regions from the standpoint of paradigms, is there an opportunity to reduce the length of the formation and deployment of a new (information) technological paradigm and move more quickly to the next one, based on biotechnology, life sciences, materials with predetermined properties (3D printing, etc.)?
- The most important task for scientific study is to consider the optimal forms of state influence on the process of formation of a new technological paradigm in the Russian Arctic by instruments and institutions of active industrial policy at the federal, regional and municipal levels in the interests of maximizing benefits and minimizing social costs.

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Received August 23, 2022.

Drivers of Entrepreneurship Development in Russia's Regions: Assessment and the Role of Spatial Interrelations



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Abstract. The study examines for the first time the influence of the spatial interaction effects of socio-economic factors on the entrepreneurship development in the regions. This effect was assessed by constructing a set of spatial models on panel data for 2011–2019. The need to take into account spatial interaction is due to the calculated Moran's index, as well as the statistical significance of the spatial autoregressive coefficient. In the work, we have built the following models: spatial lag model, spatial error model, spatial lag and spatial error model, Durbin model, and panel regression. The purpose of the simulation is to assess the role of the spatial factor in the entrepreneurship development in Russia's regions. As a result, we have proposed a system of indicators of entrepreneurial activity, selected the most informative indicators, determined the influence of factors of entrepreneurial activity taking into account and without a spatial lag of dependent and independent variables, and evaluated spatial effects

For citation: Shakleina M.V., Shaklein K.I. (2022). Drivers of entrepreneurship development in Russia's regions: Assessment and the role of spatial interrelations. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 118–134. DOI: 10.15838/esc.2022.5.83.6

(direct, indirect, general). The article shows that the influence of wages and the unemployment rate on the change in entrepreneurial activity is much greater if spatial interactions are taken into account. The scientific novelty of the research lies in determining the degree and direction of the influence of spatial effects that have an impact on entrepreneurial activity and its factors. The results confirm the importance of using not only regional characteristics, but also spatial and temporal dependencies in the analysis of entrepreneurial activity. We expect that the research results will provide practical information to authorities and administrations seeking to promote the entrepreneurship development at the national level.

Key words: entrepreneurial activity, spatial econometrics, Russia's regions, Moran's index.

Acknowledgment

The study is carried out with the support of the RSF grant no. 20-68-47030 "Econometric and probabilistic methods for analyzing complex financial markets".

Introduction

The effective development of the entrepreneurial ecosystem in the regions is a prerequisite for the intensive functioning of the entire market environment. Small and medium-sized enterprises (SMEs) form a unified economic structure, increase the middle class size, reduce unemployment, increase budget profitability and strengthen the economic, political and social stability of society.

In recent years, there has been an increasing interest in the geography of entrepreneurial activity, which is manifested in such topics as the placement of firms and their relationship to economic growth (Krugman, 1991), strengthening of the role of geography in the strategic management of firms (Sorenson, Baum, 2003). Of great importance for regional economic development is, first, the location of both new and existing firms (Audretsch, Keilbach, 2004; Fritsch, Mueller, 2008), and second, the spatial dependence of factors of entrepreneurial activity (Acs et al., 2007). We should note that in a number of works by foreign scientists, entrepreneurial activity is understood as the proportion of employees who have an enterprise. Russian statistics do not have this kind of data. Among the Russian official statistical resources, the indicator of the number of small and medium-sized enterprises largely corresponds to the logic of this concept.

Ignoring such aspects as migration, location, dissemination of knowledge and innovation, and capital flow, in modern conditions leads to erroneous judgments. If there are significant changes in economic and social development in some regions, then this affects other regions, especially neighboring ones. "Regional spatial effects are understood as the influence of changes in one region on other regions, and the intensity of this influence depends on the location of the regions relative to each other" (Semerikova, Demidova, 2016). The use of spatial econometrics methods allows taking into account the direct and indirect relationship between observations located in space.

The expediency of modeling the relationships between variables of entrepreneurial activity at the regional level is explained by a number of reasons. Russia has a huge territory; respectively, regions located in different territorial units have different properties and capabilities. The subjects are also characterized by heterogeneity of resource allocation and different working conditions. The possibilities of choosing a field of activity for each region are different; some are focused on the provision of services, others – on heavy industry and manufacturing.

The use of spatial econometrics methods in the work allows taking into account the relationship

between a group of regions and their influence on each other because the closer the regions are to each other, the stronger their connection, it means that the easier it will be to flow knowledge, labor and capital. Ignoring the spatial effect in modeling entails bias and inefficiency of estimates of the obtained models.

The purpose of the research is to assess the role of spatial interaction in the entrepreneurship development in the regions.

To achieve the goal, it is necessary to solve the following tasks:

1) to develop a system of factors promoting entrepreneurial activity and to select the most informative factors for modeling;

2) to determine the factors that have a significant impact on the entrepreneurship development in the regions, based on the assessment of a wide set of specifications of spatial-econometric models;

3) to evaluate spatial effects (direct, indirect, general);

4) to identify the need to take into account spatial relationships in the development of entrepreneurial activity.

The scientific novelty of the work consists in taking into account the spatial dependence of the factors promoting entrepreneurial activity.

Theoretical and methodological review

The research (Verheul et al., 2002) presents a comprehensive theoretical system that includes factors affecting social welfare and national culture. The possibility of setting up a small business is explained by various institutional determinants, such as political, cultural and social factors.

The presence of entrepreneurial patterns is associated with natural advantages. For example, the creation of the wine industry in California, the location of old towns and settlements near reservoirs is explained by a geographical factor (Kuechle, 2014).

The definition of "spatial dependence" of entrepreneurial activity according to the methodology (Saxenian, 1994) implies geographically

interdependent innovation and entrepreneurial activity in geographically close areas. Geographical proximity can facilitate direct interaction, as well as the exchange of geographically limited shared resources, infrastructure and business practices.

The study (Plummer, 2010) discusses why entrepreneurial activity can be spatially dependent and why spatial econometric methods should be taken into account in the study of entrepreneurship. The author notes that new firms in the same sector tend to be geographically grouped and rely more on the regional environment or nearby resources. In addition, spatial dependence in entrepreneurship is caused by migration, interregional trade, spread of technology and knowledge, business clusters in neighboring regions, business norms, as well as social and institutional networks (Audretsch, Keilbach, 2004; Pijenburg, Kholodilin, 2014).

Spatial dependence is considered in entrepreneurship research, but the time factor is rarely taken into account (Qian, Zhao, 2018). An example of the synthesis of spatio-temporal effects is the work (Hong et al., 2015), where the spatio-temporal dynamics of new manufacturing firms in South Korea is studied. The study combines a number of aspects: spatial heterogeneity caused by regional differences; temporal dependence explained by the synergetic effect of startups; spatial dependence associated with interregional interactions. The result of constructing a spatial model is the proof of the statistical significance of the simultaneous impact of two components: spatial and temporal.

It is worth noting that the spatial econometric approach is also used in other works (Ans et al., 2002; Audretsch et al., 2010; Autant-Bernard, Lesage, 2011; Qian, Haynes, 2014). The authors study the influence of various determinants (human capital, cultural diversity, etc.) of entrepreneurial activity in the context of the study of spatial relationships. There are not so many Russian studies devoted to this problem. Simulation of the spatial effect in the entrepreneurship development is presented in the research (Zemtsov, Tsareva,

2018). However, a significant drawback of most works (including Russian ones) is that the models take into account the spatial dependence of only the explained variable and ignore the spatial relationships of factors of entrepreneurial activity.

The analysis of spatio-temporal interrelations of entrepreneurial activity is impossible without basic assumptions about the composition of its determinants.

For instance, O.I. Obratsova and E.V. Popovskaya raise the question of the contextual conditions of the region and argue that the behavior of an entrepreneur can be better understood when studying spatial relationships, institutional, social and community norms in society (Obratsova, Popovskaya, 2017). The authors discuss the existence of close connection between the entire ecosystem of entrepreneurial activity, identify a number of the most important factors for its analysis: demography, employment and unemployment, standard of living and population

resources, business development, investment and investment attractiveness, regional fixed capital resources, security and legal environment, state support for small business development.

The above-mentioned study seems to be the most comprehensive from the point of view of taking into account the factors promoting entrepreneurial activity. Currently, there are a huge number of models that present a view of the problem from one side: institutional factors (Acs et al., 2008; Aparicio et al., 2016), social aspects (Song et al., 2020), technological development level (Qian, Zhao, 2018), geographical aspects (Plummer, 2010; Kuechle, 2014; Hong et al., 2015), etc.

Our research determines a set of basic factors of entrepreneurial activity on the basis of the studied literature. It helps to consider the possibilities of regional business development from all sides (human capital, financial situation, legal environment, level of ICT development, etc.). Let us present the main factors promoting entrepreneurial activity (*Tab. 1*).

Table 1. Factors promoting entrepreneurial activity

Name of the block	Name of the indicator	Literature which mentions these factors
Human capital	Proportion of students in higher education institutions as part of the working-age population, %	The influence of human capital factors on the entrepreneurship development is noted in the works (Ans et al., 2007; Obratsova, Popovskaya, 2017; Zemtsov et al., 2021).
	Number of doctoral students, people	
	Number of graduate students, people	
	Graduation of students with a certificate of basic general education, people	
	Number of personnel engaged in educational activities under higher education programs, people	
	Number of students enrolled in bachelor's degree, specialty, master's degree programs per 10,000 people	
Financial situation of the population	Purchasing power of per capita monetary income in relation to the subsistence minimum sets, thousand rubles	The impact of monetary incomes of the population on the employment growth in the field of entrepreneurship is not unambiguous. On the one hand, the higher the GDP per capita, the higher the number of self-employed (Robson, 1998; Hong et al., 2015). In (Obratsova, Chepurensko, 2020), it is noted that material factors positively influence involvement in entrepreneurial activity in all types of contextual conditions. The reverse effect is considered in (Wennekers et al., 2005).
	Real monetary incomes of the population, thousand rubles	
	Total area of residential premises, on average per inhabitant, m ²	
	Average contribution size (deposit) of individuals on ruble accounts, thousand rubles	
	Population below the poverty line, %	
	Retail trade turnover per capita, thousand rubles	
	Average monthly nominal accrued salary of employees of organizations, thousand rubles	
	R/P 10% ratio, times	
	Share of food expenses in consumer spending of the population, %	

End of Table 1

Name of the block	Name of the indicator	Literature which mentions these factors
Employment and unemployment	Unemployment rate, %	Employment and unemployment indicators are used in most studies on entrepreneurial activity. Their influence is ambiguous (Obraztsova, Popovskaya, 2017; Qian, Zhang 2018; Zemtsov et al., 2021)
	Level of economic activity of the population, %	
	Load of the unemployed per vacancy, people	
Security and legal regulation	Number of persons, committed crimes in the economic sphere, per 1,000 inhabitants	High level of personal security and developed legal environment have a direct positive impact on the entrepreneurial activity development (Xheneti, Bartlett, 2012; Obraztsova, Popovskaya, 2017; Zemtsov et al., 2021)
	Number of registered premeditated murders and attempted murders per 100 thousand people	
	Number of registered premeditated murders and attempted murders per 100 thousand people	
	Number of robberies per 100 thousand people	
	Number of thefts from citizens' apartments per 100 thousand people	
	Number of robberies per 100 thousand people	
Information and communication technologies (ICT)	Share of Internet users in the total population, %	The development of digitalization and universal Internet access contributes to an increase in the number of freelancers (Sorgner, 2017) and increases the opportunities of existing small businesses to enter new markets (Shideler, Badasyan, 2012)
	Fixed-line telephone density per 100 people, units	
	Share of telephoned settlements in rural areas in the total number of rural settlements, %	
	Number of mobile radiotelephone subscribers, people	
	Number of active subscribers of fixed and mobile broadband Internet access per 100 people	
	Share of households with a personal computer, %	
	Share of households with Internet access, %	
Innovation Opportunities of the region	Costs of technological innovations to GRP, %	Innovative factors, as well as factors of ICT development, have a positive impact on stimulating entrepreneurial activity (Zemtsov, 2020). In particular, in the study (Qian, Zhao; 2018), among the factors of the econometric model, the growth of the number of small enterprises is significantly influenced by the factor "number of patents per 10 thousand employees". Entrepreneurs' innovations encourage other entrepreneurs to enter into entrepreneurial endeavors and innovations (Duguet, 2004). Conversely, better economic activity creates new opportunities for entrepreneurs and stimulates innovation.
	Internal research and development costs for GRP, %	
	Organizations that have carried out research and development, units	
	Share of personnel engaged in research and development in the total number of employees in the region, %	
	Number of patent applications filed for inventions and utility models per thousand employed in the economy	
	Share of exports of technologies and technical services in the total volume of exports of the region, %	
	Share of imports of technologies and technical services in the total volume of imports of the region, %	
Demography	Share of the urban population in the total population (year-end estimate), %	Demographic factors in econometric models of entrepreneurial activity are noted in the works (Fritsch, Noseleit, 2013; Obraztsova, Popovskaya, 2017; Barinova et al., 2018; Song, 2020, Zemtsov et al., 2021).
	Population density, people per km ²	
	Demographic load factor (year-end estimate), persons of disabled ages per 1,000 people of working age	
Source: own calculation based on Rosstat data and scientific literature.		

The most informative factors within each block of entrepreneurial activity are determined on the basis of S.A. Ayvazyan's methodology for selecting informative private criteria among the indicators of the a priori set of each integral property (Ayvazyan, 2012).

The general methodological scheme is as follows.

1) Calculation of matrices of values of pairwise correlation coefficients separately for each block of factors promoting entrepreneurial activity. The analysis of the numerical characteristics obtained makes it possible to conduct a preliminary stage of identifying closely related pairs, triples, etc. groups of variables within each block (Ayvazyan, 2012). Then, by calculating the coefficient of determination, the issue of selecting one representative from each block is solved.

2) Calculation of the coefficients of determination R^2 of each of the indicators of the a priori set for all other indicators that are part of the analyzed block of factors of entrepreneurial activity.

Let us define the quantitative composition (p') of a reduced set of indicators of a certain integral property (for example, the block "Demography") $p' < p$. A reduced set of indicators is considered informative if the maximum value of the coefficient of determination is found:

$$\max\{R^2(x^{(l)}; (x^{(l_1)}, \dots, x^{(l_{p'})}))\}, \quad (1)$$

where $x^{(l_1)}, \dots, x^{(l_{p'})}$ – shortened set of indicators of the block "Demography";

R^2 – coefficient of determination of each of the particular criteria $x^{(l)}$ (indicators of entrepreneurial activity within the corresponding block l – "Demography") with all other private criteria of the block.

As a result, we have selected the most informative indicators for each block:

– the block "Human Capital" represents the number of students enrolled in bachelor's, specialty,

master's degree programs per 10,000 people (hereinafter referred to as stud);

– the block "Financial situation of the population" show the average monthly nominal accrued salary of employees of organizations, thousand rubles (hereinafter – wage);

– the block "Employment and unemployment" – the unemployment rate, % (hereinafter – unemp);

– the block "Security and legal regulation" – the number of persons who have committed crimes in the economic sphere, per 1,000 inhabitants (hereinafter – safety);

– the block "ICT" – the number of active subscribers of fixed and mobile broadband Internet access per 100 people (hereinafter – Internet);

– the block "Innovative opportunities of the region" – internal costs of research and development to GRP, % (hereinafter – innovation);

– the block "Demography" – population density, people per sq. km (hereinafter – demogr).

In the future, the most informative indicators will be used at the stage of building spatial models.

Let us consider the main simulation stages.

1. Selection of the weighing matrix. The apparatus of spatial econometrics allows taking into account the spatial structure due to the inclusion in the weighted value model of the indicator in other regions (spatial lag). To do this, a "weighing matrix" $W = (w_{ij})$ is introduced into the model, its elements are determined based on the following rules:

a) presence or absence of a common border with neighboring regions (binary matrix):

$$w_{ij} = \begin{cases} 1, & \text{if the object } i \text{ has a common border with the object } j, \\ 0, & \text{if the object } i \text{ doesn't have a common border with the object } j. \end{cases}$$

b) inverse distance between pairs of regions:

$$w_{ij} = \begin{cases} 0, & \text{if } i = j, \\ \frac{1}{d_{ij}}, & \text{if } i \neq j, \end{cases}$$

where d_{ij} – is the distance between the regions' administrative centers by rail or automobile roads in kilometers.

It is worth noting that the priority in the course of creating spatial models for Russia is the inverse distance matrix, which was proved by E.V. Semerikova, O.A. Demidova (Semerikova, Demidova, 2015) using the Monte Carlo method; the coefficient shift was minimal.

The inverse distance matrix captures the connection between regions better than the binary one, since there are regions with a large area in Russia (mainly the eastern part), while the presence of borders with neighbors does not oblige regions to exchange knowledge and, accordingly, entrepreneurial experience. In the western part, where the distances are much smaller, the knowledge flow can be carried out more efficiently so we have used the inverse distance matrix in the work.

At the same time, too high proximity degree can lead to blocking effects (Qian, Zhi, 2018), when the low development rate of firms in one region restricts the development of firms in nearby regions. Thus, there is no knowledge flow, but only barriers are created that hinder effective entrepreneurial development. However, the situation described above is more common when a more developed region enters the markets of a less developed neighbor to increase sales markets, so underdeveloped regions try to be similar in terms of the development rate of institutional conditions with a possible donor region.

2. Building a global Moran's index is a check of spatial dependencies. This index is determined by the formula:

$$I_g = \frac{\sum_{i=1}^N \sum_{j=1}^N w_{ij} (X_i - \bar{X})(X_j - \bar{X})}{\frac{1}{N} \sum_{i=1}^N (X_i - \bar{X})^2 \sum_{i=1}^N \sum_{j=1}^N w_{ij}}, \quad (2)$$

where w_{ij} – elements of the weight matrix W ;

N – number of observations in space (in our case, number of Russia's regions);

\bar{X} – average value;

X_i, X_j – i and j values of variables in regions i and j .

The significance of the indicator is calculated by the formula:

$$Z_i = \frac{(I - E[I])}{SD[I]}, \quad (3)$$

where $E[I]$ – mathematical expectation;

$SD[I]$ – standard deviation.

If the indicator is nonzero and statistically significant, then we can talk about the presence of spatial dependence. Moran's index varies from -1 to 1. If it is close to 1, then there is a positive relationship, if to -1, then a negative relationship.

3. Construction of panel regressions and spatial models. We have built the following specifications in the work:

a. Panel regression with bidirectional effects:

$$Y_t = \alpha I_N + X_t \beta + \eta + \mu + u_t, \quad (4)$$

where Y_t – vector of dimension $N \times 1$ values of the endogenous variable – the number of small enterprises in Russia – at time t ($t = 2011, 2012, \dots, 2019$),

N – total number of observation objects (77 Russia's regions),

αI_N – vector of dimension $N \times 1$ values of the constant α ,

X_t – vector of dimension $N \times K$ of explanatory variables – factors of entrepreneurial activity – at time t , where K is the number of explanatory factors,

β – vector of estimated parameters of dimension $K \times 1$,

η – time-constant regional effects (regional heterogeneity),

μ – fixed time effects,

u_t – error vector of the model of dimension $N \times 1$ at time t .

b. Spatial autoregressive model (SAR) takes into account the interaction of the dependent variable between the sample elements:

$$Y_t = \alpha I_N + X_t \beta + \rho W Y_t + \eta + \mu + u_t, \quad (5)$$

where $W Y_t$ – spatial lag of the dependent variable (global effects of entrepreneurial activity),

W – matrix of spatial weights of dimension $N \times N$,

ρ – spatial autoregressive coefficient, spatial dependence strength of the dependent variable among observations.

c. Spatial error model (SEM):

$$Y_t = \alpha I_N + X_t \beta + \eta + \mu + u_t, \quad (6)$$

where $u_t = \lambda W u_t + \varepsilon_t$,

where $W u_t$ – spatial lag in regression errors,

λ – spatial correlation coefficient in regression errors, which measures the strength of the autocorrelation of spatial errors.

ε_t – vector of dimension $N \times 1$ of equally and independently distributed error terms with zero mean and variance σ^2 .

d. The spatial autoregressive model and spatial autoregressive combined model (SAC) is a generalization of the two previous models:

$$Y_t = \alpha I_N + X_t \beta + \rho W Y_t + \eta + \mu + u_t, \quad (7)$$

where $u_t = \lambda W u_t + \varepsilon_t$.

e. Spatial Durbin Model (SDM) – includes spatial lags of both dependent and independent variables:

$$Y_t = \alpha I_N + X_t \beta + \rho W Y_t + W X_t \theta + \eta + \mu + u_t, \quad (8)$$

where $W X_t$ – spatial effects of the factors of entrepreneurial activity,

θ – vector of unknown parameters of dimension $K \times 1$.

4. Next, we build different types of specifications within each model – with fixed and random effects.

5. After that, we perform the LeSage's and Pace's test on $\theta = 0$ and $\rho \neq 0$ to identify the best model among SDM vs SAR.

H0: $\theta = 0$ and $\rho \neq 0$, it means that the coefficients of modification of the SDM model are 0, respectively, this model does not differ from the SAR model.

H1: $\theta \neq 0$ and $\rho \neq 0$, it means that the coefficients of modification of the SDM model are not equal to 0; respectively, this model differs from the SAR model.

6. Elhorst test on $\theta = -\beta\rho$ to identify the best model among SDM vs SEM.

H0: $\theta = -\beta\rho$, it means that the coefficients of modification of the SDM model are equal to the coefficients of the SEM model, respectively, the SEM model is the best model compared to SDM.

H1: $\theta \neq -\beta\rho$, it means that the coefficients of modification of the SDM model are not equal to the coefficients of the SEM model, respectively, the SDM model is a better model compared to SEM.

7. Next, we calculate the AIC and BIC criteria for comparison and selection of the best model among the obtained ones.

8. According to the obtained best model, direct, indirect, and general effects are calculated for its interpretation.

Data and preliminary analysis

This paper uses data from the official statistical resource Rosstat for 2011–2019 for 77 Russia's regions.

In total, there are 87 observed objects in Rosstat collections, the Arkhangelsk Oblast (it is divided into 2 objects) and the Tyumen Oblast (it is divided into 3 objects) are aggregated.

We have excluded the following observed objects:

1) cities of federal significance (Moscow, Saint Petersburg) and Chukotka Autonomous Okrug due to the extreme values for financial and economic indicators, which are presented in Table 1, in particular the blocks “Financial situation of the population” and “Innovative opportunities of the region”;

2) The Republic of Crimea and Sevastopol due to the lack of data in the period 2010–2014;

3) Nenets Autonomous Okrug and the Arkhangelsk Oblast without NAO, as the information are aggregated for the Arkhangelsk Oblast;

Table 2. Descriptive statistics and correlations of model variables*

	stud	wage	unemp	safety	internet	innovation	demogr
stud	1						
wage	-0.31	1					
unemp	-0.05	-0.16	1				
safety	-0.02	0.18	0.16	1			
internet	0.25	0.27	-0.48	-0.15	1		
innovation	0.27	-0.01	-0.27	-0.14	0.25	1	
demogr	0.16	-0.63	-0.18	-0.46	-0.11	0.21	1
Mean	233	39,307	5.55	0.3	19.52	0.63	30.19
Median	229	35,212	4.75	0.29	20.2	0.37	23.46
S.D.	80	13,686	3.95	0.11	6.16	0.8	30.85
Min	36	26,835	2.21	0.14	1.5	0	0.3
Max	533	94,856	33.75	0.74	37.5	5.46	173.5

* Compiled from the 2019 data.
Source: own calculation based on Rosstat data.

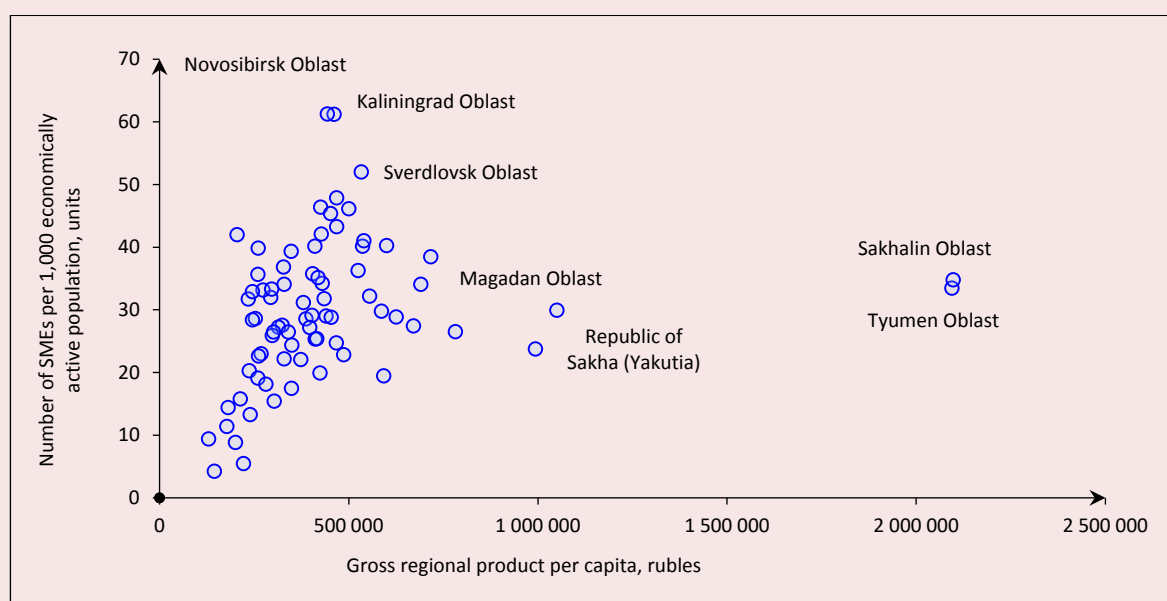
4) Khanty-Mansi Autonomous Okrug, Yamal-Nenets Autonomous Okrug and the Tyumen Oblast excluding KhMAO and YaNAO, as the information is aggregated for the Tyumen Oblast.

The number of observed objects in the study is 77 units. We excluded the period 2020–2021 due to the structural changes in the data, which are caused by the impact of the pandemic and its consequences on the business processes of entrepreneurial

ecosystems. In particular, this is the transition of trade to online mode, changing channels and geography of supplies of intermediate consumption products, approaches to marketing and promotion of goods, etc.

Next, we will present an empirical analysis of the incoming variables of the model and analyze the matrix of pairwise correlation coefficients and standard descriptive statistics (*Tab. 2*).

Figure 1. Dependence of the number of SMEs on GRP per capita in 2019



Source: Federal State Statistics Service data (<https://rosstat.gov.ru/>).

The matrix of the pairwise correlation coefficients of factors promoting entrepreneurial activity indicates the absence of multicollinearity between the analyzed variables. Similar matrices for previous periods also showed the absence of multicollinearity. The analysis of descriptive statistics allows saying about the high variability of variables wages, unemployment, research and development costs, and population density. The degree of interregional differences is great not only in the dependent variable – the number of small and medium-sized enterprises, but also in its factors. This indicates the need to use a weighing matrix for the analyzed variables in the models.

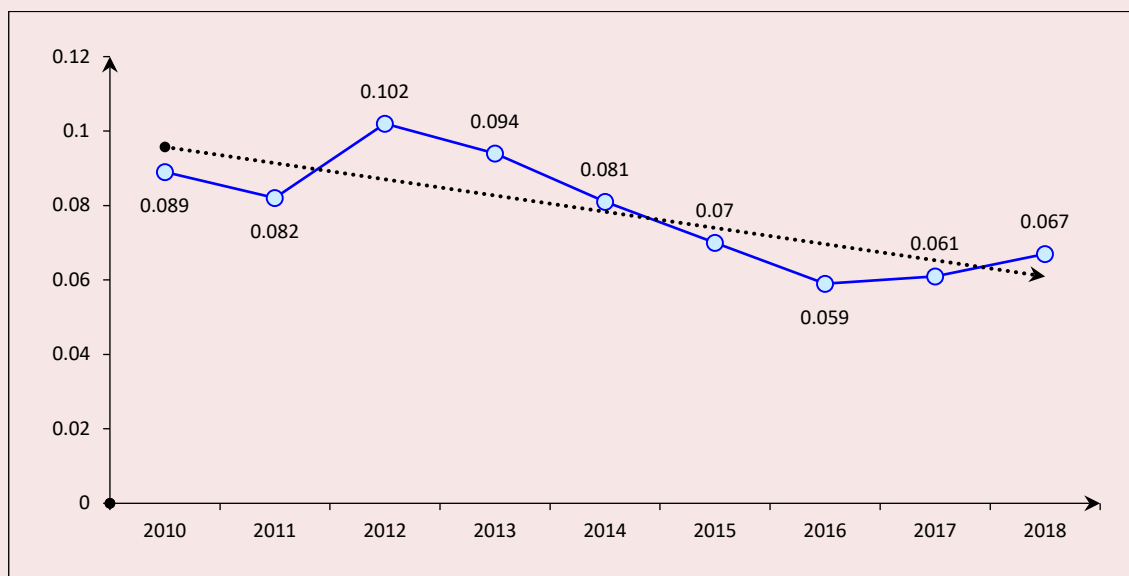
In general, concentration of the analyzed trait is high and is in the range from 4 to 62 units of SMEs per 1,000 people of the economically active population (*Fig. 1*). They are mainly concentrated in regions with low and moderate GRP rates per capita. However, for regions with a high GRP rate per capita, for example, the Sakhalin and Tyumen oblasts, there is an average level of the number of SMEs per 1,000 economically active population.

Simulation results

The need to use spatial models caused the results of the construction of the Moran's index. There is a stable spatial positive correlation of the dependent variable – the number of small and medium-sized enterprises (*Fig. 2*). This result means that the regions of Russia can be divided into patterns of entrepreneurial activity: regions with a high value of the number of small and medium-sized enterprises (CFD), regions with a low value (North Caucasus).

Table 3 shows the simulation results. We have constructed the main specifications of spatial models based on panel data: SAR, SAM, SDM, and SAC. We have carried out simulation in the STATA package; we have found estimates of spatial models using the maximum quasi-likelihood estimation (MQLE), which is the basis of the xsmle package (Belotti et al., 2017). Before simulation, we prologarithmed all indicators. This procedure is standard in research and allows scaling variables and reducing high variation, which leads to heterogeneity in model errors (Hong et al., 2015). We have already mentioned that the non-

Figure 2. Moran's index for the period from 2010 to 2018



Source: own calculation according to Rosstat data.

Table 3. Results of the evaluation of spatial panel models based on data for 2011–2019 using robust standard errors (N = 693)

Explanatory variable (in natural logarithms)	Dependent variable – number of small and medium-sized enterprises, in natural logarithms							
	SAR-RE	SAR-FE	SEM-RE	SEM-FE	SDM-RE	SDM-FE	SAC	FE
	1	2	3	4	5	6	7	8
Number of students	-0.160***	-0.183***	-0.175***	-0.208***	-0.117*	-0.123**	-0.132***	-0.234***
Average monthly nominal accrued salary	0.246***	0.250***	0.377***	0.374***	0.403***	-0.176	0.747**	0.392***
Unemployment rate	0.0150	0.0003	0.0319	0.0101	0.0222	0.0147	0.276*	0.0108
Economic crime per 1,000 inhabitants	0.0167	0.0235	0.0161	0.0237	0.0189	0.0283	0.0490	0.0245
Number of active subscribers of fixed and mobile broadband Internet access per 100 people	0.161***	0.185***	0.159***	0.181***	0.176***	0.193***	0.0153	0.175***
Internal research and development costs, % of GRP	0.0362***	0.0289**	0.0344***	0.0272**	0.0336***	0.0258**	0.0356	0.0314**
Population density	0.250***	0.744**	0.268***	0.756**	0.405***	0.684**	-2.302	0.740**
ρ (spatial autoregression coefficient)	0.470***	0.503***			0.453***	0.478***	0.796***	
λ (spatial correlation coefficient in regression errors)			0.472***	0.476***			-0.923***	
Constant	3.256***		6.513***	2.179				5.356***
<i>Model quality criteria</i>								
AIC	-318.9	-884.9	-315.9	-879.3	-314.4	-882.5	-892.3	-860.5
BIC	-268.9	-844.1	-266.0	-838.5	-232.7	-809.9	-846.9	-824.2
Durbin – Wu – Hausman test		26.8		18.7		46.4		103.6
Prob > chi2		0.0008		0.0167		0		0
FE vs RE		FE		FE		FE		FE
LeSage and Pace (SDM vs SAR) on $\theta = 0$ and $\rho \neq 0$, chi2=						190.4		
Prob > chi2						0.000		
SDM vs SAR						SDM		
Elhorst (SDM vs SEM) on $\theta = -\beta\rho$, chi2=						175.7		
Prob > chi2						0.000		
SDM vs SEM						SDM		

Note: ***, **, * — significance of the coefficients at the 1, 5, 10% level, respectively. Source: own calculation based on Rosstat data.

inclusion of a spatial factor in the model leads to biased estimates. In this regard, in order to have information about the consequences of not taking into account the spatial lag model, we have evaluated a panel regression with fixed effects without spatial relationships.

Within each specification, we have considered models with fixed and random effects. To choose the best model among them, we used the Durbin – Wu – Hausman test on the uncorrelation of errors and regressors. If the hypothesis is not rejected, then random effects are used (hence, GLS is used to find estimates of coefficients), otherwise, a model with fixed effects (within transformations and OLS to find estimates). Taking into account the data in Table 3, we can conclude that at the 5% significance level, preference is given to models with fixed effects (models 2, 4, 6).

We carry out further selection between model specifications by conducting tests on the significance of the coefficients facing the corresponding spatial lags.

Following the strategy described in LeSage's and Pace's works (LeSage, Pace, 2009) and Elhorst (Elhorst 2010), researchers should start checking specifications with SDM as a general specification and analyze whether it is possible to simplify SDM to SAR or SEM. Further, LeSage's text makes a choice between the SDM (model 6) and the SAR (model 2). The conducted test proved that the best model is the SDM model (chi-squared = 190.4, Prob > chi2 = 0.000).

The Elhorst test for $\theta = -\beta\rho$ allows determining the best model among SDM (model 6) and SEM (model 4). As a result of the test chi-square = 175.7, Prob > chi2 = 0.000, the null hypothesis is rejected and the choice is made in favor of the SDM model.

Analyzing the estimates of model 6, we can notice a significant spatial effect of two variables: the unemployment rate and wages. Studies conducted earlier excluded this aspect of the problem from the analysis. The resulting spatial dependence of not

only the dependent variable – the number of new small enterprises, but also the factors that form it, indicates that the policy pursued in relation to the entrepreneurship development should be built taking into account the analysis of the size of average wages and the unemployment rate in neighboring regions, since these factors have strong spatial relationships and influence on entrepreneurial activity.

We carry out the comparison of the SDM and SAC models on the basis of the Akaike information criterion (AIC) and Bayesian information criterion (BIC). The SAC model has slightly lower information criteria, which makes it advisable to use this type of specification for further discussion and interpretation.

In this model, the spatial lag of the dependent variable (ρ) and the spatial error correlation (λ) are statistically significant. The spatial correlation coefficient is significant and the corresponding estimate is positive. This indicates that the entrepreneurial activity growth in one region entails the entrepreneurship development in other regions.

In order to interpret the obtained estimates of spatial models, we turn to the calculation of direct, indirect and general effects (Tab. 4). We give interpretation only for statistically significant effects.

Despite the fact that SAC turns out to be the best model by quality criteria, the interpretation will be given to SAC and SDM, since SDM is not much inferior to SAC in quality, and the calculated direct and indirect effects are close.

The *direct effect* is interpreted as the average change in the number of new small enterprises in the region when the corresponding explanatory factor changes **in the same** region. The *indirect effect* (spill-over) is the average change in the number of new small enterprises in a region when the corresponding explanatory factor changes in all **other** regions. The general effect is determined by the sum of direct and indirect effects; in our case, this is the average change in the number of

Table 4. Direct, indirect, general effects of the SDM and SAC models

Variable	SDM	SDM	SDM	SAC	SAC	SAC	Panel-FE
	Direct	Indirect	General	Direct	Indirect	General	
Number of students enrolled in bachelor's, specialist, and master's degree programs	-0.119*	0.221	0.102	-0.138***	-0.564*	-0.702**	-0.234**
Average monthly nominal accrued salary of employees of organizations	-0.169	1.308**	1.139**	0.210***	0.900	1.110	0.392***
Unemployment rate	0.0254	0.556*	0.581*	0.0163	0.0766	0.0929	0.0108
Economic crime per 1,000 inhabitants	0.0295	0.119	0.148	0.0210	0.0832	0.104	0.0245
Number of active subscribers to fixed and mobile broadband Internet access per 100 people	0.194***	0.170	0.364	0.196***	0.861	1.058	0.175***
Internal costs on research and progress, % to GRP	0.0273**	0.0889	0.116	0.0325***	0.142	0.174	0.0314**
Population density	0.646*	-3.577	-2.931	0.631*	2.715	3.346	0.740**

Note: ***, **, * – significance of the coefficients at the 1, 5, 10% level, respectively.
Source: own compilation in the STATA program.

new small-sized enterprises in the region when the corresponding explanatory factor changes **in all** regions.

In accordance with the values of direct effects, an increase in **the number of students in bachelor's, specialty, and master's degree programs** by 1% in the region reduces the number of new small enterprises in the same region by 0.119% in the SDM model and by 0.138% in the SAC model. This result is consistent with the conclusions of the study (Obraztsova, Chepurensko, 2020), which postulates that “the education level in regions of different types acts on involvement in entrepreneurial activity in different directions: it slows it down in some cases and stimulates it in others”. The reverse influence of the factor “education” on the entrepreneurship development in a group of prosperous regions is explained by the experience and education of individuals who better understand the level of risks and barriers to the entrepreneurship development in their residence region.

The impact of **wages and unemployment** on changes in entrepreneurial activity is much greater if spatial interactions are taken into account (1,139 vs 0.392 in wages; 0.581 vs. 0.0108

in unemployment). In terms of wages and unemployment, we can note that direct effects are insignificant and much less indirect (SDM model). This means that wage growth in all other regions by 1% increases the number of small businesses in this region by 1,139%; an increase in the unemployment rate in all other regions by 1% increases the number of small businesses in this region by 0.556%. The results obtained indicate that local measures to stimulate entrepreneurship in a particular region will lead to more modest results than policies implemented at the state level (Pereira, 2014).

Economic crime has a statistically insignificant effect on the number of small and medium-sized enterprises, since the activities of small and medium-sized enterprises are mainly concentrated in the legal field of the Russian Federation.

The number of Internet subscribers has a positive impact on the entrepreneurship development. One percent in the region increases the number of new small businesses in the same region by 0.194% in the SDM and by 0.196% in the SAC. The cumulative effect in the SAC model is 1.058%. The indirect effect is not significant; it means that the growth in the number of subscribers in one region does not

increase entrepreneurial activity in neighboring regions. The direction of influence corresponds to the expected and is consistent with the results in the works (Shideler, Badasyan, 2012; Sorgner, 2017).

The impact of **internal research and development costs on the development** of entrepreneurship is quantitatively comparable in the conventional panel regression model and spatial models. The direct effect is 0.0273 in the SDM model and 0.0325 in the SAC model. The innovation factor plays an important role in the entrepreneurship development (Drucker, 1998) and encourages many entrepreneurs to engage in entrepreneurial activity. As we have noted above, entrepreneurs' innovations encourage other entrepreneurs to enter into entrepreneurial endeavors and innovations (Duguet, 2004).

Population density in spatial models is also a significant factor among the factors of small business development. The estimate of the direct effect is quantitatively comparable to the estimate in the panel regression model and is 0.646 in the SDM model and 0.631 in the SAC model. This is reasonable, since in cities, regions with high population density, the urbanization level and concentration of technologies is higher, which stimulates the development of entrepreneurial activity (Helsley, Strange, 2011; Fritsch, Noseleit, 2013).

Conclusion

In the course of the study, we simulated the factors promoting entrepreneurial activity in Russia's regions for 2011–2019 using spatial regression models. The model includes weighted values of not only the indicator of the number of small-sized enterprises in other regions (the spatial lag of the dependent variable), but also factors promoting entrepreneurial activity: the number of students, wages, unemployment, economic crime, the number of active Internet users, research and development costs, population density (the spatial lag of explanatory factors). We chose spatial model

factors on the basis of S.A. Ayvazyan's method of selecting informative private criterion. We have carried out the selection within each of the seven blocks of variables that explain the emergence of new small enterprises in the regions.

The study takes into account several aspects of the problem. The first is spatial heterogeneity from the point of view of the existence of the established features of the region's economic development, which may contribute to or limit entrepreneurial initiatives. The second aspect is the existence of the dependent nature of the development of entrepreneurial activity, as well as the forming factors – knowledge about entrepreneurship, innovations, etc., which are used in the neighboring region. In the existing works on entrepreneurship, either the factors promoting entrepreneurship are considered exclusively while leveling possible spatial relationships, or the presence of spatial effects is analyzed only by the dependent variable (entrepreneurial activity). We have proposed and tested several spatial econometric models of entrepreneurial activity. On the basis of proven criterion for the selection of informative indicators, we determined representative indicators within each block of factors promoting entrepreneurial activity, which allows speaking about a reasonable and comprehensive approach to the selection of signs – determinants of entrepreneurial activity. The analysis of the constructed models shows that in Russia there are strong interrelations between regions and their mutual influence on each other by the dependent variable – the formation of new small enterprises, as well as by such factors promoting entrepreneurial activity as wages and unemployment. We have determined that if the spatial aspect is taken into account, the impact of **wages and the unemployment rate** on the change in entrepreneurial activity is much greater.

For the entrepreneurship development, the size of average wages and the unemployment rate in neighboring regions are of great importance, as well

as the education, the digitalization development, innovative opportunities and concentration rate of labor resources in each particular region. In this regard, we expect that the research results will give practical information to the authorities involved in the development and implementation of entrepreneurship development assistance programs about the role of the spatial factor in the study of the determinants of the development of entrepreneurial activity.

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Received May 30, 2022.

Funding Research and Development in Regions: Tasks, Current State, Prospects



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For citation: Klimova Yu.O., Ustinova K.A., Frolov I.E. (2022). Funding research and development in regions: Tasks, current state, prospects. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 135–152. DOI: 10.15838/esc.2022.5.83.7

Abstract. Financing the research and development sector is an important condition for growth of innovation activity in regions. However, the share of research and development (R&D) expenses in Russia has been decreasing over the last ten years. According to this indicator, Russia lags behind other countries – leaders of innovation development 3–4 times. The formation of funds to support research, scientific and technological, and innovation activities can contribute to the growth of the volume of R&D financing. The purpose of the study is to examine the organizational conditions for the formation of funds to support research, scientific and technological, and innovation activities. Using statistical data from Rosstat, we calculated the variants of growth of R&D costs provided that regional funds are created, the budget of which is formed by deductions from the revenues of organizations in the amount of up to 1.5%. We have identified groups of companies whose financial resources could be a source of formation of the funds budget. The article identifies the main directions and volume of use of finances accumulated in the funds. In the final part of the article we reviewed the support measures for companies that participate in filling the budget of the funds, and proposed adjustments to the main areas of incentives for organizations. The scientific novelty of the presented work lies in the implementation of a comprehensive study of the supporting funds for research, scientific and technological, and innovation activities in the RF constituent entities as a tool for the growth of R&D expenditures. The latter includes studying the issues of financial filling of the funds budget, determining the directions and calculating the possible volume of spending of accumulated funds on them, as well as adjusting the existing measures to encourage organizations to participate in financing the funds budget. The practical significance of the work lies in the fact that its results can serve as an economic justification and organizational support for the creation of regional funds by regional authorities. In addition, the materials of the study can be used to develop a separate federal law regulating the creation and operation of the funds in question.

Key words: region, science, innovation, innovation activity, research and development, R&D, funds, R&D funding.

Acknowledgment

The article was prepared within the framework of the state task no. FMGZ-2022-0002 “Methods and mechanisms of socio-economic development of Russian regions under conditions of digitalization and the fourth industrial revolution”.

Introduction

The task of developing an innovation economy is set before almost all countries, including the Russian Federation. The large-scale changes of recent times require a substantial revision of the established ideas about scientific and technological, and innovation activities, which is a multidimensional task. Here we present only some results of the study of current problems associated with the formation of regional funds to support

research, scientific and technological activities. The problems of scientific and technological development in the aspect of technological modernization of the Russian economy are presented in the work “On the long-term scientific and technological development of Russia”¹.

¹ Belousov D.R., Frolov I.E. (Eds.). (2022). *On the Long-Term Scientific and Technological Development of Russia*. Moscow: Artik Print.

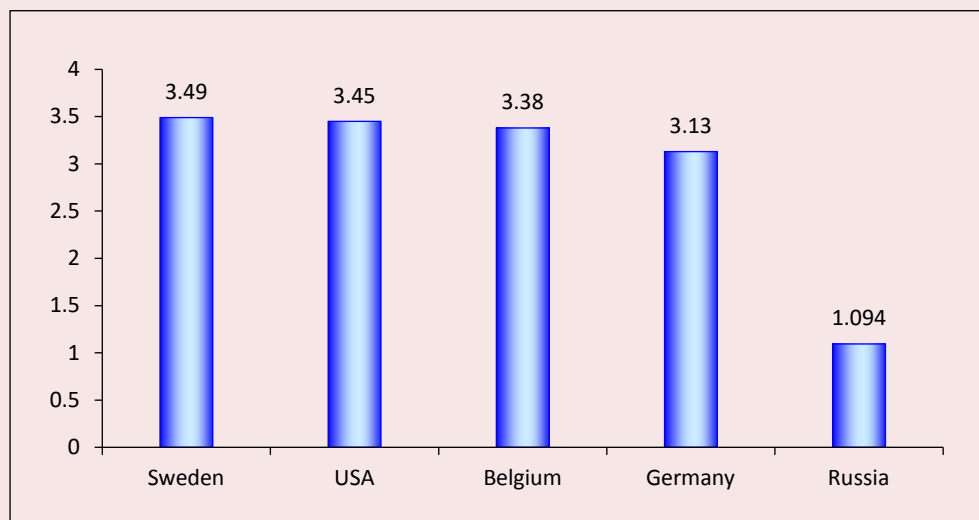
One of the key indicators characterizing the ability of organizations to implement innovations and their degree of involvement in it is innovation activity². Over 10 years (from 2010 to 2020) the level of innovation activity of organizations in Russia increased slightly – by 1.3 percentage points, in 2020 it was 10.8%. According to data for 2020, the same indicator in Belgium and Germany was 67.8%, in the United States – 64.7%, in Sweden – 63.1%³. Statistical data indicate a significant lag of Russian organizations by the level of innovation activity from the world leaders (by 52.3–57.0 p.p.).

“The growth of innovation activity is largely determined by the presence of a well-developed R&D sector, providing the creation of new products, materials and technologies that can subsequently be implemented in the production process and be embodied in marketable products that are competitive in today’s markets” (Mazilov, Ushakova, 2019). An important condition for the effective functioning of innovation activity is the

financing of the research and development sector. However, in the period from 2010 to 2020 there was a slight decrease in the share of spending on research and development in Russia’s GDP (by 0.36 p.p.). In 2020, this indicator was 1.094%. In countries with high innovation activity, this indicator is several times higher. For example, in Sweden it is 3.49%, in Germany – 3.13%, in the USA – 3.45%, in Belgium – 3.38% (Fig. 1). This indicator shows that by the share of spending on research and development in GDP Russia lags behind the world leaders by 2.0–2.4 p.p.

“At the same time the problem is exacerbated by imbalances in financing of the research and development sector in the RF regions. The difference between the leading regions and the outsider regions of Russia, as of 2019, is 140 times. In 58 of 79 constituent entities of the Russian Federation (73.4%) the proportion of domestic spending on research and development in GRP is less than 1% and only in 8.9% of the constituent entities

Figure 1. Share of spending on research and development in international comparison, 2020, %



Source: Organization for Economic Cooperation and Development (OECD) statistical database. Main science and technology indicators. Available at: <https://stats.oecd.org/>

² Indicators of innovation activity. 2022: Stat. Coll. Available at: <https://issek.hse.ru/mirror/pubs/share/589979442.pdf>

³ Ibidem.

spend for these purposes more than 2% of GRP” (Klimova, 2021).

It is worth emphasizing, that there is a problem in Russia, related to budgeting volume of money, allocated for the R&D sector development. Thus, the federal law “On science and state scientific and technological policy” (2000) approved that 4% of the federal budget should be allocated for the R&D funding through to 2004. At the same time, it is noted, that this was canceled in 2004 as it had never been followed. It is noted that in 2004 this norm was abolished because it had never been observed (Todosiichuk, 2013).

In addition, according to the Ministry of Finance of the Russian Federation, in 2021 budget financing of research and development amounted to 635 billion rubles, and in 2022 it was planned only 586 billion rubles, which is 7.7% less than the previous year⁴.

The problem of financial provision of R&D is raised both among experts and public authorities. For example, RAS leaders and the scientific community note that with the current amount of money allocated for science, it is impossible to compete with leading countries⁵. The experts of the Accounts Chamber of the Russian Federation also emphasize that Russia lags behind the leading countries in terms of R&D expenditures, which, in turn, does not allow Russian science and technology to become the main driver of socio-economic growth⁶. The need to solve this problem is declared on the state level. According to the passport of the national project “Science”, by 2024 it is planned to increase spending on research and development to 1.02% of GDP⁷. The contradiction

is that statistically, the figure was 1.2% already for 2019. This circumstance indicates a discrepancy between the planned values of the target indicators and the achieved ones. In addition, even with such indicators, the volume of R&D expenditures remains low. It is necessary to increase it to at least 3% of GDP, bringing it to the level of countries developed in terms of innovation.

Inadequate funding of innovation activity leads to the low return on science and research. In this regard, the problem of financial support for the research and development sector is urgent. At the previous stages of the study, we found that “one of the effective and legitimate methods of enhancing the financing of science in the regions of Russia can be the creation of regional funds to support research, scientific, technological, and innovation activities” (Mazilov, Ushakova, 2019). According to the federal law “On science and state scientific and technological policy” these funds are understood as “organizations which are created by the Russian Federation, constituent entities of the Russian Federation, physical and (or) legal entities for the purpose of financial support of research, scientific and technological, and innovation activity including on conditions of co-financing at the expense of various sources not prohibited by the legislation of the Russian Federation”⁸.

The purpose of the study is to examine the organizational conditions for the formation of funds to support research, scientific and technological, and innovation activity. The main objectives of the work are: 1) to determine the sources of budgeting of the funds in question; 2) to propose directions for using the money accumulated in the funds; 3) to review and adjust the existing areas of incentives for companies to participate in the financing program of the funds.

⁴ How will Russian science be financed? Available at: <https://rg.ru/2021/12/15/kak-budet-finansirovatsia-rossijskaia-nauka.html>

⁵ Ibidem.

⁶ The level of funding for Russian science is insufficient to ensure a technological breakthrough. Available at: <https://ach.gov.ru/checks/9658>

⁷ Passport of the national project “Science”. Available at: <http://static.government.ru/media/files/vCAoi8zEXRVSuy2Yk7D8hvQbpbUSwO8y.pdf>

⁸ “On science and state scientific and technological policy”: Federal Law 127, dated August 23, 1996. Available at: http://www.consultant.ru/document/cons_doc_LAW_11507/ddc6aeb0b1616c6dfe6f3794ef646a8fc98794f6/

The scientific novelty of the presented work lies in the implementation of a comprehensive study of the funds to support research, scientific and technological, and innovation activities in the constituent entities of the Russian Federation as a tool to increase the volume of R&D costs, including the study of fund financing, the definition of directions and calculation of the possible volume of accumulated funds for them, as well as the adjustment of existing measures to encourage organizations to participate in the financing of the funds budget.

Theoretical aspects of research

The need for fund-raising to support research, scientific and technological and innovation activities is caused by the necessity to improve the mechanisms of R&D financing available in the country. It is important to emphasize that the very process of formation includes various aspects (creation of funds, definition of their functions, goals and powers of constituent entities, regulatory and financial support, etc.). The focus of this study is on the financial side of fund budgeting.

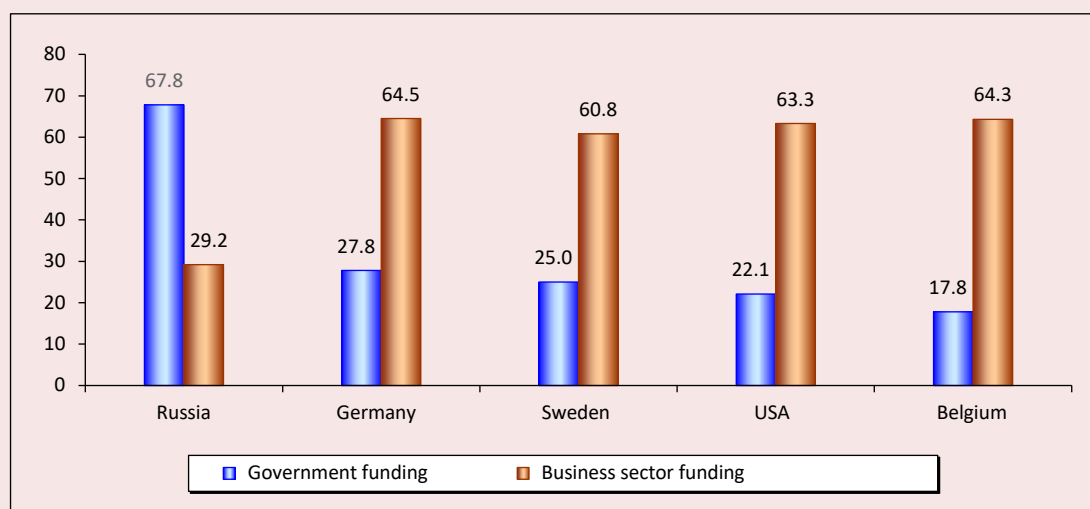
In general, the problems associated with the financing of science and innovation are raised in the works of both Russian (Aganbegyan, 2015; Ivanchenko, Gorbunov, 2018; Mindeli, Chernykh, 2017; Osovin, 2020 et al.) and foreign (Paunov, Borowiecki, 2018; Larrue et al., 2018; Jesemann, 2020; Kimberly, 1979; Schumpeter, 1954 et al.) researchers. A number of works emphasize the importance of financial support for innovation, science and other activities. For example, according to the author (Aganbegyan, 2015), funding plays a significant role in the development of science, education, information technology, etc. From the point of view of the authors of the study (Ivanchenko, Gorbunov, 2018), financial resources are an important condition for innovative development and implementation of innovation, as well as the implementation of innovative directions.

Some works specify the role of financial support, for example, emphasize the importance of funding in supporting basic research and development (Ivanchenko, Gorbunov, 2017). M.N. Osovin calls R&D funding a central element in the creation of future breakthrough technologies (Osovin, 2020). A similar point of view is indicated in the works (Larrue et al., 2018; Schumpeter, 1939). Analysis of the scientific literature has shown that many studies on the problem of R&D financing emphasize the importance of research and development costs in enhancing innovation activity. It follows that the developed system of financial support of R&D is one of the main conditions for increasing innovation activity, which, in turn, contributes to economic growth and competitiveness of the country.

However, it should be noted that in Russia the main source of funding for science and innovation is the state budget. This fact is confirmed by statistical data. In the structure of domestic expenditure on research and development by source of funding as of 2020, the share of funds allocated to R&D in Russia by the state is 67.8%, and by the entrepreneurial sector – 29.2%. However, among the world leaders, highlighted by the level of innovation activity, there is an opposite situation. For example, in Germany the share of funding from the business sector accounts for 64.5%, government funding – 27.8%, in Belgium – 64.3 and 17.8%, in the United States – 63.3 and 22.1%, Sweden – 60.8 and 25.0%, respectively (*Fig. 2*).

The current situation shows that in foreign countries the main source of funding in the structure of domestic R&D expenditures is the funds of the entrepreneurial sector. This fact is due to the developed system of interaction between science and business, when the private sector is interested in expanding and accumulating scientific knowledge in order to increase the competitiveness of manufactured products (Bekkers, Bodas Freitas, 2008; Perkmann, Walsh, 2007). However, in Russia

Figure 2. Structure of domestic spending on research and development by source of funding in international comparison, 2020, %



Note: Ranked in descending order by the “public funds” column.

Source: Science Indicators. 2022: Stat. Coll. Available at: <https://issek.hse.ru/mirror/pubs/share/581310357.pdf>

there is no stable system of interaction between science and business⁹, so in the country a large share of R&D funding falls on the state. The role of this source in the structure of R&D expenditures has changed insignificantly (by 2.5 p.p.) over the last 10 years. This conclusion is also confirmed by various researchers and experts. Specialists from the Accounts Chamber of the Russian Federation, the Institute for Statistical Research and Knowledge Economy at the Higher School of Economics, and others note that, contrary to global trends, the largest source of funding for Russian science remains from the state (60–70%)¹⁰.

The results of the scientific literature analysis have shown that there is no unified opinion on the efficiency of the Russian model of R&D financial

support, characterized by the dominant role of the state; two extreme positions prevail – positive assessment of the state financing of R&D and negative one. The first position is reflected in the study (Makasheva, 2013), which notes that state funding allows carrying out “unaffordable” even for big business scientific research, the practical significance of which may appear only in the very distant future, to develop fundamentally new areas of science and technology. State funds play an important role in shaping the innovation environment, which is reflected in the financing of research and innovation¹¹.

At the same time among experts and representatives of the scientific community there is an opposite point of view on the efficiency of financial support of R&D on the part of the state. Thus, it is noted that most of the research and development does not end with anything, and the quality of the results obtained is of questionable nature (Lebedev,

⁹ Interaction of science and business in the commercialization of research and development: Information and analytical material. HSE. 2017. 12 p.

¹⁰ Kuznetsova E., Starostina Yu. The Accounts Chamber named the problems of Russian science. Available at: <https://www.rbc.ru/politics/07/02/2020/5e3c1bf19a7947cce149aa99>; Science awaits business. Available at: <https://rg.ru/2020/12/15/gossredstva-ostaiutsia-krupnejshim-istochnikom-finansirovaniia-nauki.html>

¹¹ Murzagalina G.M., Karimova S.R. The role of the state in supporting innovation. Available at: http://resources.krc.karelia.ru/krc/doc/publ2009/Innov_razv_129-132.pdf

2019). A similar point of view is presented in the study (Feoktissova, Fokina, 2015), which emphasizes that with relatively high public spending on R&D in Russia a significantly lower result is recorded compared to other countries.

In particular, one of the reasons for the inefficiency of public spending on R&D is corrupt activities. The outcome document “Recommendations of the participants of the 9th International Forum “Innovative Development through the Intellectual Property Market” emphasizes that over the past 20 years, corruption is most pronounced in the research and development sphere. ““Kickbacks” for defense research reached 80%, and only 2–3% of the sums allocated for R&D reached the direct executors”¹². As S.S. Gubanov notes, state support of the science sector is aimed not at the formation and improvement of the material and technical base of R&D, but at the payment of salaries to scientific staff (Gubanov, 2021). “The whole system of state support of science is aimed at maintaining the existing structure of departments and organizations, rather than at achieving the goals and priorities of the state in the scientific sphere”¹³. Specialists of the Accounts Chamber emphasize the “toxicity” of receiving state funding. Often budgetary funds are allocated for research and development of “irrelevant topics”. In addition, there are “excessive requirements” for accountability and procedures for controlling the expenditure of funds¹⁴.

Thus, it should be emphasized that in Russia the system of financial support of R&D is characterized by a high share of state participation, but the level of

innovation activity in the country remains low. At the same time in foreign countries, where the funds of the entrepreneurial sector play a dominant role in the financing of science, there is a high level of innovative development. As one of the tools that contribute to changing the current situation in Russia, the funds to support research, scientific and technological, and innovation activities can act, contributing to the implementation of innovation policy, increasing domestic spending on R&D (Chernova, Mikhailova, 2019). According to A.A. Gretchenko, the funds to support research, scientific and technological, and innovation activities by financing R&D contribute to the implementation of various scientific and technological projects (Gretchenko, 2007). Specialists of the Higher School of Economics emphasize that these funds can act as a tool for accumulating funds for long-term scientific projects¹⁵. The need for their formation is also justified in other works (Lapochkina et al., 2018; Chernykh, Bukina, 2013). T.N. Topoleva notes that the activity of the funds contributes to the implementation of measures aimed at stimulating and improving the efficiency of the research and innovation sector at the regional level (Topoleva, 2021). The role of these funds in the creation and development of the national innovation system is discussed in (Kookueva, 2021).

Despite the presence of numerous studies related to the issues of financial support of innovation activities, the publications on the topic of funds are few, there is practically no comprehensive study. Questions concerning the financial content of the funds’ budget and the areas of expenditure of the accumulated funds remain unexplored. In addition, there are no studies that raise the problems of stimulating companies to participate in the financing of funds to support

¹² Outcome document “Recommendations of the participants of the 9th International Forum “Innovative Development through the Intellectual Property Market”, dated April 7, 2017. Available at: https://rniis.ru/download/mf/2017/itog_doc.pdf

¹³ Kuznetsov Yu. Funding of civil science in Russia from the federal budget. Available at: <https://magazines.gorky.media/oz/2002/7/finansirovanie-grazhdanskoj-nauki-v-rossii-iz-federalnogo-byudzhet.html>

¹⁴ The Chamber of Accounts stated that state funding is “toxic” to Russian science. Available at: <https://www.kommersant.ru/doc/4244514>

¹⁵ Corporate Funds for support of research, scientific and technological, and innovation activities as a tool for financing. Available at: <http://irdclub.ru/wp-content/uploads/2015/03/Rozmirovich.pdf>

research, scientific and technological, and innovation activities, which determines the scientific and practical relevance of the work.

It is important to emphasize that in Russia there are already about 15 funds to support research, scientific, technological and innovation activities (for example, in the Tomsk and Chelyabinsk oblasts, the Republic of Bashkortostan, Krasnoyarsk Krai, etc.) (Mazilov, Ushakova, 2019). However, the formation of their budget is carried out at the expense of the state. The most common form of resource provision of R&D is the provision of grants through these foundations on the basis of competitive selection.

A number of foreign countries also have such funds (Germany, USA, Sweden, etc.). The analysis of global experience revealed that in innovatively developed countries the burden of R&D financing is distributed between the state and business. For example, in countries with a high share of participation of the entrepreneurial sector in the financial support of the research and development sector (Germany, USA, Sweden) the source of financing of funds in most cases is the state (*Tab. 1*). In Russia, on the other hand, state financing prevails both in the R&D sphere as a whole and in the formation of the funds' budgets. Taking into account foreign experience, financial support of

R&D in Russia can also be divided between the state and business. For example, the replenishment of funds could take place at the expense of the business sector. A similar practice is observed in Kazakhstan and Uzbekistan.

Thus, if we take into account the experience of R&D financing in foreign countries, one of the sources of funds' budget formation in Russia may be a percentage of companies' revenues. Interaction of organizations with foundations through financial provision of their budget will allow taking into account the priority directions of R&D on the part of the entrepreneurial sector. "This will have a significant impact on increasing the competitiveness of products on both Russian and foreign markets, as well as increasing the practical relevance of developments in connection with the needs of the real sector of the economy". (Ogurtsova, 2014).

It is important to emphasize that in Russia there are certain regulatory conditions for creation of such funds. For example, article 262 of the Tax Code of the Russian Federation regulates the issues related to R&D expenses. According to paragraph 2 of article 262, the expenses also include "deductions for the formation of funds to support research, scientific and technological and innovation activity, established in accordance with Federal Law 127-FZ "On science and state scientific-technical policy",

Table 1. Foreign experience of replenishing the budgets of funds to support research, scientific and technological, and innovation activity

Country	Funds to support research, scientific and technological, and innovation activity	Source of replenishing the fund's budget
Germany	The German Federal Environmental Foundation	Federal budget
USA	The National Science Foundation (NSF) of the USA	Federal budget
Sweden	Sweden's Innovation Agency (Vinnova)	Federal budget
Republic of Kazakhstan	The National Fund of the Republic of Kazakhstan	Entrepreneurial sector
Republic of Uzbekistan	Foundation for Scientific and Innovation Development	Entrepreneurial sector
	Fund to support innovation activities of large state-owned enterprises and economic management bodies	Entrepreneurial sector

Source: The German Federal Environmental Foundation. Available at: https://deru.abcdef.wiki/wiki/Deutsche_Bundesstiftung_Umwelt; The National Science Foundation. Available at: <https://devki.su/2021/03/26/nacionalnyj-nauchnyj-fond-ssha/>; The Science and Innovation Development Fund was established in Uzbekistan. Available at: <https://www.podrobno.uz/cat/tehn/v-uzbekistane-sozdan-fond-nauchno-innovatsionnogo-razvitiya/>

dated August 23, 1996, in the amount not exceeding 1,5% of revenues from sales of products”¹⁶. Paragraph 1 of Article 15.1 of the federal law “On science and state scientific and technological policy” states that “funds may be created by the Russian Federation, the constituent entities of the Russian Federation, physical persons and (or) legal entities in the organizational-legal form of a fund”¹⁷.

Thus, issues related to the financing of science and innovation are relevant and are raised in the works of various researchers and experts¹⁸ (Kim, Heshmati, 2014). The results of the study of statistical data have shown that in Russia the main source of financial support for the research and development sector is the state. However, questions about the effectiveness of such a model remain debatable. Analysis of statistical data shows that Russia lags behind the world leaders by R&D expenditures and the level of innovation activity of the regions. One of the tools to solve this problem is the formation of funds to support research, scientific and technological, and innovation activities. The existing legislation in Russia provides for the possibility of their creation at the expense of deductions from the proceeds of private companies. But the problems of which organizations can participate in the financing of such funds, what areas the accumulated funds will be spent on, and how to encourage companies to make contributions to the budget of the funds have not yet been resolved.

¹⁶ Tax Code of the Russian Federation dated August 5, 2000. Available at: http://www.consultant.ru/document/cons_doc_LAW_28165/aa9832fb416dd0274acf737be8e4c157866abf0b/; On science and state scientific and technological policy: Federal Law 127, dated August 23, 1996. Available at: http://www.consultant.ru/document/cons_doc_LAW_11507/ddc6aeb0b1616c6dfe6f3794ef646a8fc98794f6/

¹⁷ On science and state scientific and technological policy: Federal Law 127, dated August 23, 1996. Available at: http://www.consultant.ru/document/cons_doc_LAW_11507/ddc6aeb0b1616c6dfe6f3794ef646a8fc98794f6/

¹⁸ Fostering Innovative Entrepreneurship. Challenges and Policy Options. United Nations. Geneva, 2012. 68 p.

Methods and information base of the study

To implement the goal and objectives used a system-wide approach, which involves a comprehensive study, focusing on the reproduction of funds to support research, scientific and technological and innovation activities from the perspective of not only their formation, but also the use of attracted funds.

A set of scientific methods was applied in the work. We used the method of comparative analysis to study the scientific literature when considering the theoretical and methodological aspects of the problem raised. Based on statistics, we calculated options to increase R&D costs through deductions from company revenues. In addition, we used tabular and graphical data visualization techniques.

The information base for the study was statistical data from Rosstat, the Higher School of Economics (the level of innovative activity, the volume of spending on R&D). To analyze the activities of companies, part of the revenues of which can potentially be regarded as a source of replenishing the budget of the funds, we used information from Forbes rating, the analytical center “Expert”, the SBIS system (accounting and inventory system), as well as the financial statements of banks. One of the sources was the information published on the official portals of regional governments.

If we characterize the information base of the study in more detail, we should emphasize that the current legislative acts in the field of support of research and innovation activities were used, with the help of which the possibility of creation of funds to support research, scientific and technological, and innovation activities, as well as formation of their budget at the expense of deductions of companies in the amount up to 1.5% of their revenues was substantiated. Along with this, statistical data on the share of domestic R&D expenditures in GDP for 2019 (the last year for which GDP data are presented in Rosstat), as

well as data on companies' revenues were used. The study examined the existing measures to encourage companies to participate in the formation of the budget of the funds in question, making adjustments and suggestions.

Research findings

At the previous stages of the study we substantiated the necessity of formation of regional funds to support research, scientific and technological, and innovation activities. Research work was based on legal and regulatory provisions, in particular, Article 262 of the Tax Code of the Russian Federation and Article 15.1 of the Federal Law "On science and state scientific and technological policy". As a result, options were identified to increase R&D expenditures by regions of the Russian Federation, provided that organizations contribute up to 1.5% of revenues to the budget of the funds in question (Gulin et al., 2019).

A similar analysis in terms of R&D funding was conducted as of 2015 and 2019 (the last year for which Rosstat data on GRP are available). It has been determined that the creation in all constituent entities of the Russian Federation of regional funds for support of research, scientific and technological, and innovation activities will make it possible to increase the share of R&D costs

in GDP to 3.74% (in case of 1.5% of revenues of industrial organizations). In absolute terms, the growth of funds for research and development will reach 17.1 thousand rubles per capita, the costs of research and development may increase threefold (from 7.7 to 24.8 thousand rubles) compared to 2019 (*Tab. 2*).

Thus, the calculations indicate an increase in the opportunities for funding research and development through deductions from the revenues of organizations in the amount of up to 1.5%. They can be directed to the formation of budgets of regional funds to support research, scientific and technological, and innovation activities. This creates the prerequisites for financing at the regional level the necessary fundamental and applied research and development, support for innovation activities. The inclusion of the entrepreneurial sector in pumping up the budget of the funds gives the right to the companies themselves to influence the actual R&D, thus strengthening their practical relevance related to the needs of the real sector of the economy.

We emphasize that the option of contributions to the funds budget by all companies is ideal. To participate in the proposed model in practice, it becomes important to take into account the financial capabilities of enterprises to resourcing the research and development sector. The budget

Table 2. Options to increase the amount of R&D funding subject to the creation of regional funds in all constituent entities of the Russian Federation

Indicator	Year					Share of costs including revenue			Increase in the case of deductions of 1.5%
	2008	2012	2016	2018	2019	+0,5%	+1,0%	+1,5%	
Actual share of domestic spending on research and development in GDP, %	1.27	1.31	1.33	1.37	1.20	2.06	2.91	3.74	2.54
Expenditures on research and development in the Russian Federation, thousand rubles per capita, in current prices	3.0	4.6	6.0	7.0	7.7	13.4	19.1	24.8	17.1

Source: compiled according to Russian regions. Socio-economic Indicators: Stat. coll. Available at: <https://rosstat.gov.ru/folder/210/document/13204>

Table 3. Calculations to replenish the budget of funds subject to the participation of organizations included in the Expert-400 list (as of 2019, in parentheses – 2018)

Federal district	0.5% of revenue	1.0% of revenue	1.5% of revenue
	costs for R&D + 0.5% of revenues, rubles/person	costs for R&D + 0.5% of revenues, rubles/person	costs for R&D + 0.5% of revenues, rubles/person
Central Federal District	14 564.1 (13 782.1)	24 112.3 (22 989.3)	33 660.6 (32 196.5)
Northwestern Federal District	6 178.3 (5 760.2)	7 721.5 (7 344.5)	9 264.7 (8 928.7)
Southern Federal District	2 233.0 (1 931.1)	3 056.8 (2 757.9)	3 880.5 (3 584.7)
Volga Federal District	5 729.0 (5 166.6)	6 386.1 (5 804.1)	7 043.3 (6 441.6)
Ural Federal District	5 860.8 (5 726.9)	8 259.0 (8 010.3)	10 657.3 (10 293.7)
Siberian Federal District	5 279.7 (4 710.1)	6 268.3 (5 479.3)	7 256.8 (6 248.4)
Far Eastern Federal District	3 198.7 (3 479.7)	3 846.4 (4 361.3)	4 494.1 (5 242.8)

Note: The regions of the North Caucasian Federal District were not included in the top 400.
Source: compiled according to the rating of the largest companies in Russia. Available at: <https://expert.ru/expert/2020/43/spetsdoklad/1/>

of the funds can be replenished by deductions from the revenues of companies that have the financial capacity for this. Examples of such organizations include Russian companies in the top 400, the first 15 oligarch companies of the Forbes ranking, and state banks (Klimova, 2021). They can help fund R&D due to the insignificant impact of deductions from their revenues of up to 1.5% on business sector revenues.

The analysis conducted using Expert-400 data for 2019 has led to the conclusion that in the case of deductions from the revenues of the analyzed companies in the amount of up to 1.5%, the volume of R&D costs in Russia will increase up to 2.3 times. The greatest changes in the values of the index are observed in the Siberian (16.1%), as well as in the Central (6.7 times; *Tab. 3*) federal districts (Klimova, 2021).

In the case of participation in the formation of funds of the companies included in the top 400, only half of the regions of Russia will make payments to research and development, because this rating includes organizations of 44 constituent entities of the Russian Federation. This circumstance may lead to an increase in regional differentiation in the field of R&D funding. For example, Moscow and Saint Petersburg account

for nearly one-third (29%) of all expenditures of all regions considered, while “the regions of the North Caucasian Federal District do not participate in financing. The consequence of this is the need to redistribute some funds between regions” (Klimova, 2021).

Based on the data of Forbes rating and the system of business communications and electronic document exchange SBIS estimated the change in the volume of spending on R&D, subject to participation in the formation of the budget of the funds of large companies included in this rating. “According to the data for 2019, there is a possibility of an increase of 3.4% in research and development expenditures due to deductions. In 2019, compared to 2018, this value would increase by 11.9%” (Klimova, 2021).

Within the financial sector of Russia (Sberbank, VTB, Gazprombank, Russian Agricultural Bank, etc.) an analysis was conducted, for which the data of annual financial statements for 2019 were used, indicating the possibility of growth in the volume of R&D expenditure due to deductions from the revenue of state banks by 5.3%. It was determined that there is an opportunity to increase the value of the indicator in 2019 compared to the previous year by 9.3% (Klimova, 2021).

Thus, there were identified groups of large organizations in terms of sales volume, which have significant financial capacity to make deductions to the funds in question. The calculations have shown that this will increase the amount of funding for R&D. The greatest growth of R&D expenditures will be observed when the funds of the companies included in the top 400 companies participate in replenishing the budget (more than twofold). This creates the preconditions for the redistribution of funds to other regions, where there are no large organizations that are able to make contributions.

In the context of the reproduction of the funds' activity, an important issue is not only the formation of their budget, but also its use. In this connection, a problem was solved concerning the determination of directions for spending the funds accumulated at the expense of deductions from the revenues of companies in the funds to support research, scientific and technological, and innovation activity.

Certain areas of funding for the scientific sphere are enshrined in normative legal acts, in particular in the passport of the national project "Science". In the report on the interim results of monitoring the

implementation of measures within the framework of the national project "Science" indicated that "the participation of the constituent entities of the Russian Federation in it is not provided, despite the receipt of proposals from 53 regions"¹⁹. At the same time, in some constituent entities the project is still being implemented, which is confirmed by the publication of its regional passports on the official portals of the governments of the constituent entities of the Russian Federation (Republic of Altai, Republic of Ingushetia, Chelyabinsk and Tula oblasts). Nevertheless, the data presented show the predominant role of federal financial support for the development of science (*Tab. 4*).

Let us put forward the assumption that deducting a certain percentage of companies' revenues to the funds contributes to the formation of additional financial resources that could be allocated for the implementation of activities as co-financing with the federal budget provided for by the national project "Science". The study revealed that the actual amount of spending on R&D in those regions where the national project is being implemented (Altai Republic, Ingushetia Republic,

Table 4. Financial support for the implementation of the national project "Science", million rubles

Source	Amount of financial support by years of implementation							Total, 2019–2024
	2018	2019	2020	2021	2022	2023	2024	
Total for the national project at the expense of all sources, including:	0.0	49 747.6	62 087.9	76 517.3	111 046.3	148 080.5	188 480.4	635 959.9
federal budget	0.0	36 992.2	42 965.8	55 111	80 404.9	97 904.9	91 408.9	404 787.6
budgets of state extrabudgetary funds of the Russian Federation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
consolidated budgets of the constituent entities of the Russian Federation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
extrabudgetary sources	0.0	12 755.4	19 122.1	21 406.2	30 641.5	50 175.6	97 071.5	231 172.0

Note: In the passport of the national project "Science", the values of the amount of funding are specified for the project as a whole.
Source: Passport of the national project "Science". Available at: <http://static.government.ru/media/files/vCAoi8zEXRVsuy2Yk7D8hvQbpbUSw08y.pdf>

¹⁹ Report on the intermediate results of the expert-analytical measure "Monitoring of the implementation of the national project "Science", necessary for the implementation of the tasks set in the Presidential Decree 204, dated May 7, 2018 "On the national goals and strategic objectives of the Russian Federation for the period through to 2024". Available at: <https://ach.gov.ru/upload/iblock/5a5/5a58a9ddd73fefb7df5c0435b4a16d96.pdf>

Table 5. Research and development costs including contributions to funds 0.5% of company revenues, 2019, billion rubles

Region	R&D expenditures actual	0.5% of company revenues	R&D costs + 0.5% of revenue
Tula Oblast	8.3	5.02	13.3
Republic of Ingushetia	0.1	0.07	0.17
Chelyabinsk Oblast	21.4	11.8	33.2
Altai Republic	0.09	0.3	0.39
<i>Total</i>	<i>29.9</i>	<i>17.1</i>	<i>47.0</i>

Source: compiled according to Russian regions. Socio-economic indicators: Stat. Coll. Available at: <https://rosstat.gov.ru/folder/210/document/13204>

Chelyabinsk and Tula oblasts) amounted to 29.9 billion rubles for 2019. At the same time, subject to deductions of 0.5% of companies' revenues in the constituent entities under consideration, the additional volume of financing of the research and development sector in 2019 could amount to 17.1 billion rubles (*Tab. 5*).

The performed calculations demonstrating the growth of the volume of expenses on R&D at the expense of formation of the funds testify to the following. The financial resources of only four regions (participants of the national project "Science"), formed on condition of companies' deductions to R&D at the rate of 0.5% (17 136.0 million rubles), exceed almost half of the federal budget funds planned for 2019 by the national project. This circumstance creates prerequisites for possible distribution of the burden of R&D financing between the state and regional companies.

Among other directions in which the money accumulated in the funds can be allocated, in scientific sources the most common is financing of R&D through grants, implementation of the state task, etc.²⁰

The regional budget is also an important source of financial support for science. The calculations were made on the basis of how much money could be allocated to the designated areas at the expense

²⁰ Erokhina E. Those who do not pull, the state does not need to finance. How the system of science funding in Russia can change. Indicator.ru. Available at: https://www.rfbr.ru/rffi/ru/press_about/o_2081084

of finances accumulated through deductions from company revenues at the rate of 0.5%, and how it would change in comparison with actual data. The approach was tested on the data of the Vologda and Moscow oblasts as the regions with low and high values of R&D expenditures, respectively.

Earlier calculations have shown that in the case of 0.5% deductions from companies' revenues, an additional 6,636.1 million rubles could be received in the Vologda Oblast and 76,102.7 million rubles in the Moscow Oblast (Gulin et al., 2019). Let us assume that the funds received will be allocated to the above-mentioned areas in accordance with the existing structure of their distribution. Thus, in the Vologda Oblast, 0.1% of the generated funds will be used to finance the contest of scientific grants for business, in the Moscow Oblast – 0.8%, for budget programs – 1.8% and 12.2%, for financing regional research projects – 0.8% and 7.7%, for state orders – 97.4% and 79.2% respectively.

Funding for research grant competitions for business in the Vologda Oblast as of 2019 amounted to 1 million rubles, in the Moscow Oblast – 40 million rubles²¹. Contributions of 0.5% of companies' revenues (according to 2019 data) can

²¹ Announcement of state scientific grants of the Vologda Oblast based on the results of the competition held in 2019. Available at: <https://vologda-oblast.ru/dokumenty/2327142/>; Companies from near Moscow will receive grants in the amount of 50 million rubles for scientific developments. Available at: <https://mosreg.ru/sobytiya/novosti/news-submoscow/podmoskovnye-kompanii-poluchili-granty-v-summe-50-mln-rublei-na-novye-razrabotki>

Table 6. Directions for the use of financial resources accumulated in the regional funds to support research, scientific and technological, and innovation activities, million rubles

Direction	Actual values, 2019				Values including 0.5% of companies' revenues			
	Vologda Oblast	%	Moscow Oblast	%	Vologda Oblast	%	Moscow Oblast	%
Science grant competitions for businesses	1.0	0.1	40.0	0.8	4.9	0.1	614.5	0.8
Budget programs	23.4	1.8	606.8	12.2	116.7	1.8	9 320.9	12.2
Government orders	1 296.0	97.4	3 924.9	79.2	6 464.5	97.4	60 291.6	79.2
Funding of regional research projects	10.0	0.8	382.5	7.7	49.9	0.8	5 875.7	7.7
Total	1 330.4	100	4 954.2	100	636.0	100	76 102.7	100

Source: Announcement of state scientific grants of the Vologda Oblast based on the results of the competition held in 2019. Available at: <https://vologda-oblast.ru/dokumenty/2327142/>; Companies from near Moscow will receive grants in the amount of 50 million rubles for scientific developments. Available at: <https://mosreg.ru/sobytiya/novosti/news-submoscow/podmoskovnye-kompanii-poluchili-granty-v-summe-50-mln-rublei-na-novye-razrabotki>; Consolidated budgets of constituent entities of the Russian Federation and budgets of territorial state extrabudgetary funds. Available at: <https://roskazna.gov.ru/ispolnenie-byudzhetov/konsolidirovannye-byudzhety-subektov/>; Look what the cat dragged in: The state order cannot become a guarantor of industry stability. Available at: https://www.dp.ru/a/2020/09/30/NeIjogkaja_prinesla; SBIS. Available at: <https://sbis.ru/>; Russian Science Foundation. Available at: <https://xn--p1ai/project/>

contribute to an increase in the amount of money coming to this direction in the Vologda Oblast, almost 5 times, in the Moscow Oblast – 15 times (Tab. 6).

The analysis of consolidated budgets of the RF constituent entities revealed that in 2019, 23.4 million rubles were allocated for R&D-related activities in the Vologda Oblast and 606.8 million rubles in the Moscow Oblast²². The participation of companies in the formation of the budgets of funds contributes to the growth of financial resources, the amount of which can be laid in the budget of the region and directed to the development of research and development. In the Vologda Oblast such allocations will allow increasing the item of expenditure on scientific research and development to 116.7 million rubles in the budget of the region, in the Moscow Oblast – up to 9320.9 million rubles.

Analysis was conducted in relation to government orders using the data of the largest companies in the regions: in the Vologda Oblast – “Severstal”,

in the Moscow Oblast – “Zagorsk Pipe Plant”, which is included in the Expert-400 rating of large Russian companies. Financing of state orders at the expense of contributions of companies may be increased in the Vologda Oblast from 1 296 to 6 464.5 million rubles, in the Moscow Oblast – from 3 924.9 to 60 291.6 million rubles²³.

The analysis of the amount of funding for regional research projects was carried out on the basis of the RSF data²⁴. In 2019, 10 million rubles were allocated in the Vologda Oblast and 382.5 million rubles in the Moscow Oblast. Participation of companies in replenishment of the funds' budget will allow to increase financing of regional research projects 5-fold and 15.3-fold, respectively.

Thus, the funds received in the case of deductions from the proceeds of companies can go to finance the implementation of activities of the national project “Science”. This creates conditions for directing some federal funds to other areas that

²² Consolidated budgets of constituent entities of the Russian Federation and budgets of territorial state extrabudgetary funds. Available at: <https://roskazna.gov.ru/ispolnenie-byudzhetov/konsolidirovannye-byudzhety-subektov/>

²³ Look what the cat dragged in: The state order cannot become a guarantor of industry stability. Available at: https://www.dp.ru/a/2020/09/30/NeIjogkaja_prinesla; SBIS. Available at: <https://sbis.ru/>

²⁴ Russian Science Foundation. Available at: <https://xn--p1ai/project/>

require additional financial resources, to finance research grant competitions for businesses, budget programs, government contracts, and regional research projects. Participation of companies in the formation of additional funds allocated to R&D contributes to the growth of tax revenues to the federal and regional budgets.

The possibility for companies to make contributions to the budget of funds to support scientific, scientific and technological and innovation activity in the amount of up to 1.5% of their revenues actualizes the issue of interest of organizations to participate in this funding program. In this regard, it is advisable to consider the directions of stimulating organizations to participate in the formation of the budget of these funds.

Direct forms of financing include the provision of subsidies to organizations which carry out R&D. Paragraph 1 of RF Government Resolution 1649, dated December 12, 2019 stipulates the possibility for organizations which carry out R&D to receive subsidies²⁵. The study shows that large industrial companies, banking structures, etc., which are not directly involved in research and development, can take part in the formation of the budget of funds. This leads to the need to expand the list of organizations specified in paragraph 1 of the Resolution, which have the opportunity to receive subsidies to cover the costs allocated to the funds to support research, scientific and technological, and innovation activity.

Among the indirect measures of stimulation the most widespread are tax privileges. According to Article 286.1 of the Tax Code there is “an investment tax deduction amounting in the aggregate to no more than 90% of the amount of

R&D costs. If the taxpayer exercised the right to apply the investment tax deduction, he also has the right to reduce the amount of tax (advance payment) to be credited to the federal budget by the amount equal to 10% of the amount of expenses”²⁶. Based on the content of this article, we can conclude that the investment tax deduction can only be given to those companies that are engaged in research and development. In this connection it is expedient to include in Article 286.1 of the Tax Code other companies whose sphere of activity is not directly connected with R&D, but which indirectly participate in formation of the funds to support research, scientific and technological, and innovation activity. It is also proposed to expand Article 78 of the Tax Code²⁷ with an incentive tool widespread abroad – the tax credit, implying a deduction of R&D costs from the amount of accrued profit tax.

Along with this, it seems expedient to include in the Tax Code a provision on the approach in which it is supposed to reduce the profit tax of an organization while increasing its expenses in the form of deductions to the budget of funds, as well as increasing the tax benefits provided to it with regard to, for example, “exemption from customs duties, tariffs, VAT on purchased equipment, devices, raw materials, materials, intellectual property necessary for implementation of radical innovative projects” (Todosiichuk, 2012).

We should note that the very possibility of formation of funds to support research, scientific and technological, and innovation activity is regulated in the federal law “On science and state scientific and technological policy”. This document has information on the legal status of funds, as well

²⁵ On approval of the Rules for granting subsidies from the federal budget to Russian organizations for financial support of the costs of research and development work on modern technologies as part of the implementation of innovation projects by such organizations: RF Government Resolution 1649, dated December 12, 2019. Available at: <https://base.garant.ru/73229392/>

²⁶ Article 286.1 of the Russian Tax Code. Available at: http://www.consultant.ru/document/cons_doc_LAW_28165/7260ba686ad1fa7b436a67a764ee41663d78d2cb/

²⁷ Article 78. Tax Code of the Russian Federation. Available at: http://www.consultant.ru/document/cons_doc_LAW_19671/fbacb44debdc278494b8260675cc5f93f4a24b/

as on the directions of their activities²⁸, but the law does not present provisions on the incentives for the creation of such funds. From our point of view, it is necessary to include in this document proposals for the provision of various benefits and preferences, such as the provision of budget investment, state guarantees, preferences in public procurement, information support, etc.

It is important to emphasize that at the regional level there are laws and regulations focused on scientific and technological development, based on the federal legislation. Accordingly, they contain provisions for the formation of funds to support research, scientific and technological, and innovation activities. It seems necessary to include in regional laws and regulations the information that public authorities of constituent entities of the Russian Federation may grant preferences to organizations that take part in replenishing the budget of the funds in question.

Conclusion

An important factor contributing to the growth of innovation activity in the regions is a well-developed system of R&D financing. However, Russia demonstrates low research and development expenditures and lags far behind the world leaders of innovation development by this indicator. The results of the analysis of statistical data and scientific literature show that in Russia there is such a model of R&D financing in which state funds play a significant role. Currently, there is no consensus on the effectiveness of this model, but statistics show that the country continues to lag far behind the world leaders in terms of R&D spending and the level of innovation activity.

Based on our calculations and analysis of regulatory documents, we concluded that one of the effective and legitimate methods of increasing

the financing of R&D could be the creation of funds to support research, scientific and technological, and innovation activities. The formation of their budget provides for deductions from the proceeds of companies in the amount of up to 1.5%. However, it was noted that not all organizations have the financial capacity to make such deductions. Based on this conclusion, we identified categories of companies (the largest companies included in the top 400, companies of businessmen included in the Forbes rating, as well as state banks), whose cash resources allow making deductions from revenues for the formation of the budget of regional funds without prejudice to the further functioning and development of organizations. The creation of such funds may become one of the options for increasing the volume of financial resources for regional R&D (implementation of measures of the national program “Science”, provision of grants, financing of regional research programs, etc.). In order to implement such a mechanism for replenishing the funds’ budget, a set of measures is needed to stimulate companies to participate in this program. The analysis showed that there are various forms of state support for innovation, the most common of them are financial incentives. In turn, among the financial support measures are direct budget incentives (subsidies, etc.) and indirect incentives. However, they are mainly provided only for educational organizations, as well as for organizations whose activities are directly related to R&D. This fact indicates the need to make adjustments to the regulations in terms of expanding the list of subjects that have the opportunity to receive a certain measure of support.

The work is a comprehensive study, which focuses not only on the role of funds to support research, scientific and technological, and innovation activities in enhancing innovation activity, but also on the study of organizational and legal conditions of their creation, opportunities to

²⁸ On science and state scientific and technological policy: Federal Law 127-FZ, dated August 23, 1996. Available at: http://www.consultant.ru/document/Cons_doc_LAW_11507/

replenish the budget of funds, directions of spending funds, etc., which determines the theoretical significance of the article. The practical significance lies in the fact that the results of the study can serve as an economic justification and organizational support for the creation of regional funds by the authorities at the level of the constituent entities of the Russian Federation. In addition, the results of the analysis of existing modern practices can be used for the development of a separate federal law regulating the creation and functioning of the funds in question.

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Received June 22, 2022.

The Impact of R&D Expenditures on High-Tech Product Exports



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For citation: Altiner A., Bozkurt E., Topcuoglu O. (2022). The impact of R&D expenditures on high-tech product exports. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 153–169. DOI: 10.15838/esc.2022.5.83.8

Abstract. Increasing high-tech product exports in international markets to achieve sustainable economic growth goals is considered an important element in every country in the contemporary world, where globalization is experienced at the highest level. Although it is accepted that many factors affect high-tech product exports in the literature, it is emphasized that R&D expenditures have significant effects. In this research, the effect of R&D expenditures on high-tech product exports in 11 emerging market economies in the period of 1996–2018 was examined. In the context of explanatory variables that are thought to have an impact on high-tech product export, exchange rate, foreign demand, economic growth, and foreign direct investments were used in addition to R&D expenditures. To analyze the relationships, panel quantile regression analysis was applied. The results showed that each variable had different effects on high-tech product exports, and it was seen that R&D expenditures had a positive and very strong effect. In addition, it was determined that economic growth and foreign direct investment also had positive and significant effects on high-tech product exports. In the light of the findings, it is of great importance to allocate more share to R&D expenditures to increase high-tech product exports and benefit from international trade markets more effectively, especially in developing countries.

Key words: economic growth, high-tech products, panel quantile regression analysis, R&D expenditures.

Introduction

The mercantilist period, experienced since the 15th century, has been the scene of a capital accumulation race between western countries. In this process, which can also be expressed as trade capitalism, it has been accepted that wealth passes through the possession of precious metals, policies have been applied to increase exports and reduce imports. The industrial revolution that began in England with the influence of technological developments from the mid-18th century – industrial capitalism – brought about mass production and created high-level increases in the supply of manufactured goods. As in the mercantilist period, increasing exports was critical to meltdown this resulting supply surplus and prosperity. A significant level of development difference has emerged between the countries that have managed to achieve industrialization and those that have not. Countries have begun to be categorized as developed and underdeveloped countries according to the level of industrialization. Currently, developed countries are trying to achieve high economic growth rates to gain the upper hand over each other by increasing their wealth, while

underdeveloped countries are trying to reach the level of developed countries. As in previous periods, export is considered the most effective tool that can be used for this purpose. Especially since the 1980s, countries have been pursuing export-based policies for sustainable growth goals.

In a world where competition in international markets is at the highest level, companies are constantly trying to maintain their activities and increase their profits by making changes in the nature of the products they produce. Since it is accepted that the most important source of production today is technology, increasing the added value of products by using higher technology in production allows standing out from the competition. In addition, the increase in sales of companies in international markets affects increasing the wealth of the country by increasing the exports of the country to which they are connected and gaining foreign currency. In this regard, governments in each country implement various policies that will ensure production and HTE. It has been observed that it has significant effects on the economy, and the number of studies conducted

to determine the determinants of HTE is increasing day by day. Although it has been found that more than one factor is effective in many studies, it has been determined that R&D activities are of great importance in technological development, which provides benefits such as invention, innovation, and, effective use of resources. Therefore, it has been emphasized that the most effective factor on the HTE is R&D activities. Even (Gruber et al., 1967) said that “All roads lead to the relationship between export performance and R&D activities” regarding the achievement of competitive advantage. The fact that it has been stated many times in the literature that R&D activities have significant effects on HTE has aroused our curiosity about this subject and has also been the source of motivation for this study.

In the study, the effect of research and development expenditures on HTE in 11 selected emerging market economies is investigated. This study differs from other studies in 3 aspects. Firstly, the number of studies examining the impact of R&D expenditures on exports of high-tech products has decreased in recent years. In this respect, as a result of the analysis to be made using new data, it will be possible to determine in which direction the relationship between the variables has developed. Secondly, in the study, the literature examining the effect of R&D expenditures on exports of high-tech products has been researched more extensively than in other studies. This helps us to create a good working setup by enabling us to have a full grasp of all the details of the subject. Thirdly, in other studies, it has been determined that the relationships between variables are generally investigated by traditional empirical methods. In this study, panel quantile regression analysis, which has not been applied before, was used. The use of panel quantile regression analysis has provided the opportunity to see how the impact of R&D expenditures changes in countries with the high, medium, and low levels of high technology product exports in a single analysis. Therefore, in the study, more detailed information

about the relationship between the variables was obtained and this information was useful when making policy recommendations.

This paper is organized as follows. Conceptual explanations are made about the issue in the next part of the study, and the theoretical literature is summarized. In the second part, the empirical literature is presented, and in the third part, a data set and an econometric method are introduced. In the fourth section, the results of the empirical analysis are reported, and in the conclusion section, the study is concluded with a general evaluation and policy recommendations. Thanks to the econometric method applied, more detailed information has been obtained about the relationship between the variables compared to other studies on this subject.

Conceptual and theoretical framework

According to the definition made by (Davis, 1982), a high-tech product is produced with a high R&D expenditure. It is also expressed as technology-intensive goods with high-income elasticity and complex production stages, which have a significant impact on the growth of a country's economy. Therefore, high-tech production refers to the provision of efficiency and quality improvement in production. Nowadays, when export-based growth policies are implemented, fast-growing countries are trying to increase the exports of high-tech products to protect and expand their share in export markets (Mani, 2000; Çolakoğlu, 2021; Sara, 2012).

According to Aghion et al. (Aghion et al., 2000), the main source of technological progress is innovation, which ensures the emergence of new products, production methods, production activities, and new organizations. Innovations, on the other hand, are created by R&D activities by profit-seeking firms, entrepreneurs, and researchers. Therefore, an important part of technological development is a product of companies' R&D activities aimed at creating new technologies. This

aspect also constitutes the starting point of internal growth models (Jones, 2013). The internalization of technological development in the theory of economic growth was first made by the study of (Schumpeter, 1942). Later, (Romer, 1986) developed Arrow's learning by doing model and coined the R&D-based growth model. According to Romer, companies that want to maximize their profits reflect the knowledge they have obtained by making R&D expenditures for production and try to become a monopoly power. The increase in the production of companies encourages economic growth. In addition, the new information obtained by the companies is used in production by other companies operating in the same sector, creating a spillover effect and this situation positively affects economic growth. In studies conducted by Grossman and Helpman (Grossman, Helpman, 1989, 1990) and Aghion and Howitt (Aghion, Howitt, 1992), different opinions on the importance of R&D activities on economic growth have been put forward. According to the models, the increase in the number of people working in the R&D sector and the positive externalities created in this sector have positive effects on economic growth (Taban, Şengür, 2014). Based on this theoretical information, it is stated that R&D expenditures have a two-ways effect on technology. Firstly, R&D expenditures expand a country's capacity to develop new products, and secondly, the capacity to obtain information through R&D expenditures is increasing and the technology transfer between countries or sectors is accelerating (Griffith et al., 2004).

Aw et al. (Aw et al., 2009) developed a dynamic export model to examine the relationship between R&D activities and exports. In their model, they stated that productivity largely depended on the firm's R&D activities and participation in export markets. Therefore, they emphasized that research and development activities would have a positive effect on export revenues by increasing productivity

(Harris, Moffat, 2011). As a general rule, the effects of R&D activities on exports are expressed in two different ways as input and output. In the input approach, the relationship between exports and factors such as R&D expenditures and research and development personnel used in the development of a new product or production technique is examined. In the output approach, the relationship between patents obtained as a result of R&D activities and exports is examined (Yıldırım, Kesikoğlu, 2012).

The products of the manufacturing industry of a country are classified by the OECD into four groups according to the level of technology. Accordingly, technology density is taken into account both the level of technology-specific to the sector (ratio of R&D expenditures to value-added) and R&D expenditures on intermediate and capital goods, as well as technology distinguished as low, medium-low, medium-high, and high. In this context, high-tech products include products with high R&D intensity, such as products produced in the computer, aerospace, pharmaceuticals, chemicals, electrical machinery, electronics, and telecommunications industries or produced through scientific research (Hatzichronoglou, 1997; OECD, 2011). In the light of these explanations, it can be stated that the way to high technology in production and therefore in exports passes through R&D activities. For this reason, it can be said that the countries that allocate more share to R&D expenditures are in a better position in terms of high-tech product exports. This situation is shown in *Table 1*.

Looking at *Table 1*, it can be seen that the highest R&D expenditure according to the income classification is made in high-income countries. The lowest R&D expenditures are made in lower-middle-income countries. It has been determined that HTE are mostly in upper-income countries and least in low-income countries. At this point, it can be said that both R&D expenditures and HTE are higher in upper-income country groups than in

Table 1. R&D expenditures and HTE in-country groups by income and region classification

Country groups	R&D expenditures, % ¹ (2018)	Exports of high-tech products, % ² (2019)
High-income countries	2.59	20.23
Upper-middle-income countries	1.64	23.60
Lower-middle-income countries	0.53 (2017)	16.92
Low-income countries	-	5.38
European Union	2.19	16.21
East Asia and the Pacific	2.44	33.85
Latin America and the Caribbean	0.67	14.09
The Middle East and North Africa	0.61 (2017)	4.61
Sub-Saharan Africa	0.48 (2007)	6.02
World	2.20	20.75

Note: ¹ the share of R&D expenditures in GDP. ² the share of HTE in manufacturing exports.
Source: World Bank (2022).

low-income countries. According to the regional classification, it has been determined that the East Asian and Pacific countries, which have become the production bases of multinational companies in recent years, especially due to low labor costs, are in the best position in terms of both variables. In addition, it has been determined that research and development expenditures and HTE are much higher in developed western countries compared to other regions consisting of developing countries.

Literature summary

Since the 1980s, it has been emphasized that R&D activities have significant effects on economic growth through technological developments in endogenous development theories. Therefore, it has become widespread to investigate the effects of R&D activities on economic growth, as well as other variables such as total exports, HTE, exports of industrial goods, exports of information and communication technologies. Studies examining the relationship of R&D activities with HTE have shown an increase since the 1990s. R&D activities are among the main determinants of HTE. As stated in the theoretical part, R&D activities are included in the analysis in the form of variables such as R&D expenditures, several researchers working in the R&D sector, and several patent applications or patents, depending on the input and output approach. In studies conducted mainly on

the European Union, OECD countries, and Asian countries, it has been found that generally, research and development activities have positive effects on high-tech product exports. It is worth noting that the availability of data is also of great importance when choosing a country. Some of the studies conducted on this issue are presented in *Table 2*.

Data and econometric method

In this study, it is aimed to investigate the effects of R&D expenditures on high technology product exports in 11 Emerging Market Economies¹; 11 Emerging Market Economies were determined according to the availability of data among the countries covered by the Morgan Stanley Capital International (MSCI) emerging markets index. In addition, Russia, which is considered as one of the emerging markets by many organizations, was included among the countries examined. The countries examined in the study are considered as economies that have shown rapid economic growth performance, attracted large amounts of foreign capital investment since the beginning of the 2000s, and whose impact on the global economy has increased rapidly with these characteristics. They are trying to increase the production of high technology products in order to reach the level of

¹ 11 Emerging Market Economies: Colombia, Mexico, Czech, Hungary, Kuwait, Poland, Russia, Turkey, China, India and South Korea.

Table 2. Summary of the literature

Authors	Period/Country	Variables	Method	Result
Le (1987)	1975, 1979, 1980, and 1983, OECD countries	HTE, R&D1	Regression Analysis	Positive impact
Fagerberg (1995)	1960–1980, 19 OECD countries	SI, R&D1, PATENT, SAL, POP, DEF, INV	Panel Regression Analysis	R&D expenditures have a positive effect on the specialization index in some products and a negative effect on some products.
Landesmann and Pfaffermayr (1997)	1967–1987, 7 OECD countries	EXP, ER, LABORC, R&D1	Panel Regression Analysis	Positive impact
Seyoum (2004)	1996–1998, 54 countries	HTE, FDI, R&D2, EDU1, UICL, ER, PINFS	Cross-Country Analysis	Positive impact
Gourlay et. al. (2005)	1988–2001, United Kingdom (1468 companies)	EXP, SALE, VPRO, R&D1, CAP1, ER	Cross-Country Data Analysis	Positive impact
Srholec (2007)	2001–2003, 111 countries	EPEXP, TECH, R&D1, POP, FPIMP, IGIMP	Panel Regression Analysis	Positive impact
Braunerhjelm and Thulin (2008)	1981–1999, 19 OECD countries	HTE, R&D1, GDP, EDU2, GOV1, FDI, MIDTECH, PCGDP	Panel Regression Analysis	Positive impact
Özer and Çiftçi (2009)	1990–2005, 30 OECD countries	HTE, ICTEXP, GEXP, R&D1	Panel Regression Analysis	Positive impact
Bojnec and Ferto (2011)	1995–2003, 18 OECD countries	IEXP, GDP, DIST, LANG, R&D1	Time Series analysis	R&D expenditures have a positive impact on industrial exports.
Alemu (2012)	1994–2010, 11 East Asian countries	HTE, R&D1, R&D2, PCGDP, PHONE, EDU3, CAP2, FDI	Panel Data Analysis	R&D activities have a positive impact on HTE.
Uzay et. al. (2012)	1995–2005, Turkey (25 sectors)	EXP, R&D1, ER, VOL, WGDP	Time Series Analysis	R&D expenditures have a positive impact on exports.
Yıldırım and Kesikoğlu (2012)	1996–2008, Turkey (25 sub-sectors of the manufacturing industry)	REXP, REER, R&D1	Panel Data Analysis	There is a one-way causality relationship between R&D expenditures and exports.
Göçer (2013)	1996–2012, 11 Asian countries	HTE, ICTEXP, EXP, FTBAL, GROWTH, R&D1	Panel Data analysis	R&D expenditures have a positive impact on HTE. In addition, there is a one-way causality relationship between R&D expenditures and HTE.
Ismail (2013)	2004–2009 (excluding 2007–2007), 10 Asian countries	HTE, R&D1, FDI, GDP, PCGDP.	Drawing Model	R&D expenditures have a positive impact on HTE.
Kılıç et al. (2014)	1996–2011, G8 countries	HTE, R&D1, REER	Panel Data Analysis	R&D expenditures have a positive impact on HTE. In addition, there is a one-way causality relationship between R&D expenditures and HTE.
Sandu and Ciocanel (2014)	2006–2010, 26 EU countries	HTE, R&D3, R&D4, INFEMP	Panel Data Analysis	R&D expenditures have a positive impact on HTE.
Şahbaz et al. (2014)	1996–2011, 17 EU countries and Turkey	HTE, R&D1	Panel Data Analysis	In addition, there is a one-way causality relationship between R&D expenditures and HTE.

End of Table 2

Authors	Period/Country	Variables	Method	Result
Özkan and Yılmaz (2017)	1996–2015, 12 EU countries and Turkey	HTE, GDP, R&D1	Panel Data Analysis	R&D expenditures have a positive impact on HTE. In addition, there is a one-way causality relationship between R&D expenditures and HTE.
Karasaç and Sağın (2018)	2008–2015, 35 EU countries	HTE, R&D3, R&D4, REER	Panel Data Analysis	Public and private sector R&D expenditures have a positive impact on HTE.
Gaberli (2018)	1996–2014, G-7 countries	HTE, R&D1, IPR, ECI	Panel Data Analysis	R&D expenditures have a positive impact on HTE.
Boz et al. (2019)	2000–2015, BRICS and MIST countries	HTE, R&D1	Panel Data Analysis	There is a bidirectional causality relationship between R&D expenditures and HTE in South Korea. There is a one-way causality relationship between HTE and R&D expenditures in China, Brazil, and Turkey.
Durmuş (2020)	2007–2017, 7 Emerging Market Economies	HTE, R&D1, PATENT, FRTRADE, FRINV	Panel Data Analysis	R&D expenditures have a positive impact on HTE.
Oğuz and Sökmen (2020)	1996–2016, 31 OECD countries	HTE, R&D1, PATENT, REER	Panel Data Analysis	R&D expenditures have a positive impact on HTE.
Yaman et al. (2020)	1998–2017, 35 OECD countries	HTE, R&D1, R&D2, GOV2, EDU4, FDI, RER, PCGDP	Panel Data Analysis	R&D expenditures have a positive impact on HTE.
Yavuz and Uysal (2020)	1991–2016, 15 OECD countries	HTE, R&D1, GROWTH, FDI	Panel Data Analysis	R&D expenditures have a positive impact on HTE.
Akay (2021)	2007–2018, 27 12 EU countries and Turkey	HTE, R&D1, PATENT, OPEN, FDI	Panel Data Analysis	R&D expenditures have a significant impact on HTE.
Aktaş and Gür (2021)	2010–2020, E7 and G7 countries	HTE, R&D1, ICT, FDI, GROWTH, GOV3, CAP3, ARTICLE	Panel Data Analysis	Positive impact
Sey and Aydın (2021)	1990–2018, Turkey	HTE, R&D1, PATENT	Time Series Analysis	Positive impact

Note: HTE: The Share of High-Tech Product Exports in Manufacturing Industry Exports, EXP: Export, ICTEXP: Export of Information and Communication Technologies, GEXP: Export of Goods, IEXP: Industrial Exports, REXP: Real Exports, EPEXP: Electronic Product Export, R&D1: R&D Expenditures, R&D2: Number of Researchers in the R & D Sector, R&D3: Public R&D Expenditures, R&D4: Private R&D Expenditures, PATENT: Total Number of Patent Applications, SI: Specialty Index, DEF: Defense Spending, ER: Exchange Rate, RER: Real Exchange Rate, REER: Real Effective Exchange Rate, VOL: Exchange Rate Volatility, LABORC: Cost of Labor, FDI: Foreign Direct Capital Investments, EDU1: Level of Education in Mathematics and Physics, EDU2: Total Education Expenditures, EDU3: The Rate of Participation in Secondary Education, EDU4: Public Sector Education Expenditures, UICL: University and Industry Cooperation Level, PINFS: Physical Infrastructure Level, SALE: Amount of Sales, VPRO: Variety of Products, TECH: The Level of Technology, FPIMP: Import of Final Products, IGIMP: Import Intermediate Goods, GOV1: Total Public Expenditures, GOV2: Public Consumption Expenditures, GOV3: Government Activity Index, MIDTECH: Mid-Level Technology Production, PCGDP: Real GDP per Capita, WGDP: World GDP, GDP: Real GDP, DIST: Distance, PHONE: The Number of Phones per 100 People, CAP1: Capital Intensity, CAP2: The Ratio of Total Fixed Capital of the Country, CAP3: Formation of Gross Capital, FTBAL: Foreign Trade Balance, INFEMP: The Number of Employees in Information-Intensive Sectors, IPR: Intellectual Property Rights Expenditures, ECI: Index of Economic Complexity, FRTRADE: Freedom of Trade, FRINV: Freedom of Investment, OPEN: The Ratio of Openness to the Outside, ICT: The Use of Information and Communication Technologies, ARTICLE: The Ratio of Scientific and Technical Articles, GROWTH: Economic Growth., POP: Population, LANG: Language, SAL: Salary, INV: Investment.

developed countries by making their rapid economic growth sustainable. Therefore, in these countries, whose production and export potential is increasing every year, it is necessary to examine the effect of R&D expenditures, which is considered as the most important element for high-tech products, on HTE in terms of their economic development. In the research, annual data for the period 1996–2018 were used depending on the availability of the data.

As a result of the literature review, it is seen that R&D expenditures are used extensively to represent research and development activities, and R&D expenditures have been selected as the independent variable that constitutes the basis of the study. Because the dependent variable is an export variable, the exchange rate, which is considered to be the main determinant of exports in the literature, in addition to world income and domestic income variables, foreign direct investment variables as control variables are included in the model. The explanations of the variables are presented in *Table 3*.

The econometric model created based on this information is as follows:

$$HTE_{it} = \beta_{it} + \beta_1 R\&D_{it} + \beta_2 LREER_{it} + \beta_3 LFGDP_{it} + \beta_4 LGDP_{it} + \beta_5 FDI_{it} + \varepsilon_{it} \quad (1)$$

Empirical analysis consists of 5 stages. In the first stage, the Breusch – Pagan test $CDLM_1$ (Breusch, Pagan, 1980), which gives effective results when the time dimension (T) is larger than the cross-section dimension (N), was used to examine

the cross-sectional dependence between the series and in the model. In addition, Pesaran's $CDLM_2$ test (Pesaran, 2004), which gives effective results when T and N goes to infinity, and the Pesaran et al. $CDLM_{adj}$ test (Pesaran et al., 2008), which gives effective results when $T > N$ and $N < T$, were also used. In panel data analysis, it is assumed that the cross-section units (countries) are independent of each other, that is, they are not affected by each other. However, in today's globalized world, other countries may also be affected by the shocks experienced by one country. For this reason, the use of tests that do not take into account the dependence between cross-section units can lead to biased and inconsistent results. The application of cross-sectional dependence tests is also of great importance for the tests to be selected at later stages.

In the second stage, the second generation panel unit root test CADF (Cross-Sectional Augmented Dickey-Fuller) belonging to Pesaran (Pesaran, 2007), which can be used when there is a cross-section dependence, was applied. This test is an extended version of the lag levels and 1st difference values for each series with cross-sectional averages in the standard CADF regression. With the CADF test, the arithmetic average of the statistics of each cross-section can be taken to obtain the CIPS statistics valid for the entire panel. In this way, stationarity analysis can be performed for each cross-section as well as for the entire panel. If the CADF and CIPS statistics values are less than the

Table 3. Variable descriptions

Variable	Description	Resource
HTE	The Share of High-Tech Product Exports in Industrial Exports, %.	World Bank
R&D	The Share of R&D Expenditures in GDP, %.	World Bank
LREER	Real Effective Exchange Rate Index (2007=100). Logarithmic values were used.	Bruegel.org
LFGDP	World GDP. The Sum of the Real GDP of the countries where each country trades the most, is calculated according to the Fixed Prices for 2015. Logarithmic values were used.	World Bank
LGDP	Real GDP, Calculated based on Fixed Prices for 2015. Logarithmic Values values.	World Bank
FDI	The Share of Net Foreign Direct Capital Inflows in GDP, %.	World Bank

critical table values as an absolute value, it is stated that there is a unit root in the series, and if it is large, there is no unit root in the series, that is, the series has a stationary structure.

In the third stage, the premise in the light of information obtained from previous analysis, Westerlund's Durbin – Hausman cointegration test (Westerlund, 2008) was applied. According to the test, the null hypothesis shows that there is no cointegration for all units. However, one of the 2 sub-alternative hypotheses shows that there is a cointegration for the entire panel and the other for some of the cross-sectional units in the panel.

In the fourth stage, it is investigated whether the variables show a normal distribution to decide the estimating method. For this purpose, some statistical methods have been used. One of them is Skewness and Kurtosis statistics, which are evaluated within the scope of descriptive statistics. Skewness is used to measure the symmetry of the data distribution. The fact that the statistical values are equal to 0 indicates that the data are distributed normally. However, it is stated that there is a skewed distribution to the right if it is greater than 0, and there is a skewed distribution to the left if it is less than 0. Kurtosis, on the other hand, is used to measure the width of the distribution of data. A statistical value equal to 0 indicates that the data is normally distributed, but different from 0 indicates that it is not normally distributed. In addition to these two descriptive statistics, the Shapiro – Wilk and Shapiro – Francia tests are also widely used. According to these tests, the probability level is less than 5%, which means that the data are not distributed normally (Xu, Lin, 2018). Although the skewness and kurtosis statistics being different from 0 indicate that there is no normal distribution, in some studies, statistical values between -1 and +1, between -1.5 and +1.5, or between -2 and +2 are accepted as normal distribution.

At the final stage of the analysis, Panel Quantile Regression Analysis developed by Koenker and

Basset Jr (Koenker, Basset, 1978) and widely used in statistical analyses of linear and nonlinear models in different fields was applied to estimate the coefficient, since it was found that the variables were not normally distributed. The quantile regression model performs a regression analysis between the conditional quantile of the dependent variable and the explanatory variables and allows obtaining a coefficient estimate for all the quantiles. This model allows stronger and more effective coefficient estimates to be made than the Ordinary Least Squares (OLS) estimator in the case where the variables are not normally distributed. Because in such a case, if the Ordinary method is used for regression estimation, the skewed distribution of economic variables can be ignored. When the variables are skewed to the left or to the right, the distribution can be fully characterized and comprehensive analysis can be obtained thanks to quantile regression. The mathematical representation of the panel quantile regression model is as follows:

$$y_i = x_i b_{\theta i} + \mu_{\theta i}, \quad 0 < \theta < 1 \quad (2)$$

$$Quant_{i\theta} \left(\frac{y_i}{x_i} \right) = x_i \beta_{\theta}.$$

In equation (2), x is the explanatory variables vector, and y represents the dependent variable, μ is the accidental error for which the conditional quantile distribution is zero. $Quant_{i\theta}(y_i/x_i)$ – is the quantile value of the defined variable. β_{θ} is the θ -th quantile regression and it is solved by the following formula:

$$\min \sum_{y_i \geq x_i' \beta} \theta |y_t - x_i' \beta| + \sum_{y_i < x_i' \beta} (1 - \theta) |y_t - x_i' \beta|. \quad (3)$$

When θ is equal to different values, different parameter estimates are obtained. Mean regression is a special case of quantile regression under conditions where $\theta = 0.5$ (Xu, Lin, 2018; Salari et al. 2021). In addition to panel quantile regression, the OLS estimator was also applied to make comparisons.

Results of empirical analysis

In accordance with the ranking described in the Econometric method section, it was first examined whether there is cross-sectional dependence between the variables and in the model. The results are shown in *Table 4*.

According to the results of three separate tests, it was found that there was a cross-section dependence at the level of 1% significance in all variables and the model. To determine the level of stationary of variables, the CADF panel unit root test was applied, which is one of the second generation unit root tests that take into account the cross-section dependence. To determine the level

of stationary for the entire panel, CIPS statistics were taken into account. The results are given in *Table 5*.

According to the results of the unit root test, it was determined that the HTE and R&D variables were stationary I(1) when the 1st difference was taken. In addition, it was observed that the other variables were stationary I(0) at the level values. Since there was a cross-sectional dependence and some of the variables were I(0) and some were I(1), the long-term relationship between the series was investigated by applying the Durbin-Hausman cointegration test, accordingly. The results are shown in *Table 6*.

Table 4. The cross-sectional dependence test results

	CDLM ₁	CDLM ₂	CDLM _{adj}
HTE	186.776*** (0.000)	12.564*** (0.000)	12.314*** (0.000)
R&D	400.587*** (0.000)	32.950*** (0.000)	32.700*** (0.000)
LREER	297.082*** (0.000)	23.082*** (0.000)	22.832*** (0.000)
LFGDP	1263.760*** (0.000)	115.251*** (0.000)	115.001*** (0.000)
LGDP	1174.721*** (0.000)	106.761*** (0.000)	106.511*** (0.000)
FDI	114.018*** (0.000)	5.627*** (0.000)	5.377*** (0.000)
Model	202.180*** (0.000)	14.033*** (0.000)	7.701*** (0.000)

Note: ***, ** and * denote a significance level of 1%, 5% and 10%, respectively. The values in parentheses indicate the probability values.

Table 5. Panel unit root (CADF) test results

Variables	CIPS Statistical Value	
	Level	1st difference
HTE	-2.032	-3.341***
R&D	-1.672	-4.292***
LREER	-2.333**	-
LFGDP	-2.443**	-
LGDP	-2.452**	-
FDI	-2.607**	-

Note: The table critical values for the significance levels of 1%, 5% and 10% are -2.57, -2.32 and -2.20, respectively. ***, ** and * denote the significance level of 1%, 5% and 10%, respectively.

Table 6. The results of the cointegration test

	Test Statistic	Probability
DH Group	61.531***	0.000
DH Panel	38.374***	0.000

Note: ***, ** and * denote a significance level of 1%, 5% and 10%, respectively.

The results of the table above indicate that there is a cointegration relationship between the series both for the group and for the entire panel. In the light of all these findings, finally, to determine the coefficient estimation method, it was investigated whether the variables had a normal distribution. The results are shown in *Table 7*.

Based on the -1.5 and +1.5 range, the skewness values indicate that the R&D and FDI variables do not show a normal distribution, but other variables have a normal distribution. Kurtosis values indicate that none of the variables are distributed normally.

Since it is not possible to reach a complete conclusion according to these results, 2 more different tests used in the literature were applied. According to the Shapiro – Wilk and Shapiro – Francia test results, it was determined that the variables were not distributed normally because the probability values of the variables were less than 0.05. As a result, it was decided that the variables were not normally distributed. This proves that it is appropriate to use the panel quantile regression model for empirical analysis. The results of the quantile regression are presented in *Table 8*.

Table 7. Normal distribution test results

Variables	Distortion	Skewness	Shapiro – Wilk test		Shapiro– Francia test		Observation
			Statistics	Probability	Statistics	Probability	
HTE	0.494	1.985	0.919	0.000	0.923	0.000	253
R&D	2.008	7.717	0.802	0.000	0.801	0.000	253
LREER	-0.442	3.536	0.984	0.006	0.983	0.005	253
LFGDP	-0.471	2.984	0.975	0.000	0.976	0.001	253
LGDP	0.336	2.622	0.962	0.000	0.964	0.000	253
FDI	3.491	41.283	0.446	0.000	0.433	0.000	253

Table 8. Coefficient estimation results

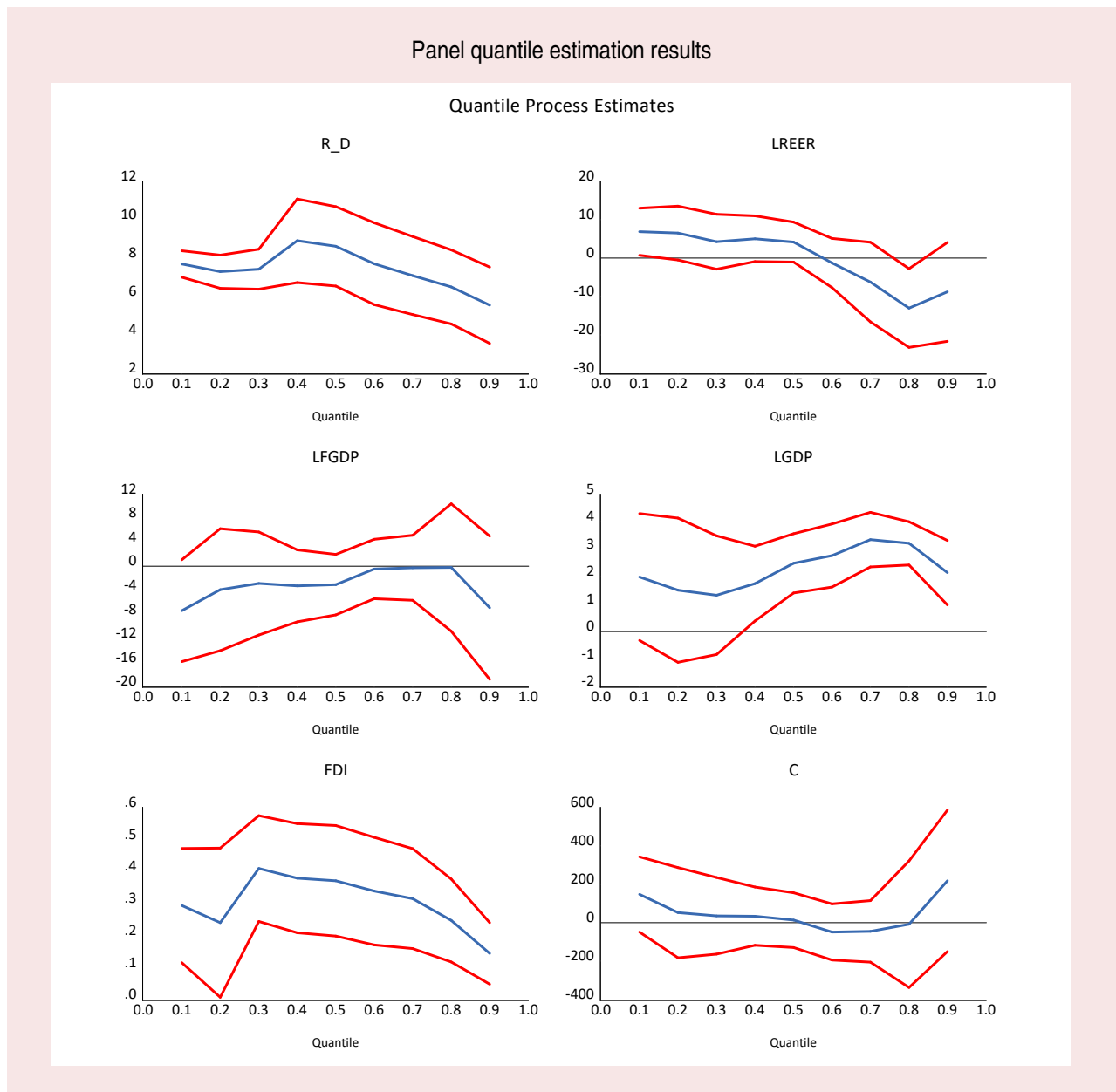
Variables	QUANTILES					OLS
	10	25	50	75	90	
R&D	7.688*** (0.000)	7.439*** (0.000)	8.608*** (0.000)	6.325*** (0.000)	5.539*** (0.000)	7.332*** (0.000)
LREER	6.835** (0.029)	6.115* (0.075)	4.143 (0.119)	-11.283** (0.017)	-8.812 (0.181)	0.822 (0.765)
LFGDP	-7.405*** (0.000)	-3.285 (0.453)	-3.049 (0.236)	3.517 (0.163)	-6.909 (0.257)	-3.179 (0.147)
LGDP	1.985* (0.093)	1.341 (0.237)	2.481*** (0.000)	3.442*** (0.000)	2.141*** (0.000)	2.114*** (0.000)
FDI	0.294*** (0.000)	0.419*** (0.000)	0.371*** (0.000)	0.280*** (0.000)	0.144*** (0.003)	0.265*** (0.000)
Constant	147.087 (0.143)	39.311 (0.699)	13.257 (0.855)	-141.322* (0.075)	218.151 (0.247)	45.152 (0.483)

Note: ***, ** and * denote a significance level of 1%, 5% and 10%, respectively. The values in parentheses indicate the probability values.

According to the table, it is seen that the effect of independent variables on HTE differs according to the quantiles. It was determined that the effect of R&D expenditures, which are included in the analysis as the main dependent variable, on HTE was significant and positive in all quantiles. It has also been observed that this variable has the strongest effect on HTE. However, in countries where the rate of HTE is higher than average, the positive effect of an increase in the ratio of R&D expenditures to GDP is lower. This result can be interpreted as the fact that in countries with a higher proportion of HTE in industrial exports than in other countries, R&D expenditures have also been directed to the production of products at different technology levels, since the range of products in exports is much wider in these countries. The effect of the real effective exchange rate represented by the LREER on the export of high-tech products is positive and significant, except for the 50th and 90th quantile indicators. The direction of the effect is positive on the 10th and 25th quantiles, while it is negative on the 75th quantiles. Accordingly, the valuation of the national currency in countries with lower-than-average exports of high-tech products positively affects the export of high-tech products, while the depreciation of the national currency in the group of countries in the 75th quantile, which is higher, positively affects the export of high-tech products. This situation reflects the impact of external dependence on production. With the appreciation of the national currency, an increase in production and exports can be achieved by supplying intermediate and investment goods in higher quantities at lower costs. It was determined that the LFGDP variable used to represent external demand did not have a significant effect on other quantiles other than the 10th quantile. Accordingly, it was observed that the impact of foreign demand was negative in the group of countries with the lowest level of exports of high-tech products compared to other countries. This result can be explained by the fact that the increase

in world demand is shifting to other countries that are better at it, since countries with poor performance in exporting high-tech products have low competitiveness in international markets or are unable to demonstrate a brand value. Although the effect of the LGDP variable representing economic growth varies according to different quantiles, it has been found that it has positive and significant effects on the export of high-tech products. This finding shows that the increase in domestic production allows more exports to be made to meet overseas demand. Finally, it was concluded that the FDI variable representing foreign direct investment also has a significant and positive effect on the export of high-tech products in all quantile terms. This information can be interpreted as the fact that the increase in foreign direct investment accelerates the transfer of higher technologies to the group of countries, thereby allowing companies producing in the country to increase exports of high-tech products.

According to the OLS estimator used to compare the results of the panel quantile regression, the variables of R&D expenditures, economic growth, and foreign direct investment have significant effects on the export of high-tech products. Again, similar to the results of the panel quantile regression, the strongest impact on the export of high-tech products belongs to R&D expenditures. However, while the LREER and LFGDP variables are meaningless according to the OLS estimator, there are also situations where they have significant effects when examined under different quantiles according to panel quantile regression analysis. Therefore, as stated in the econometric method section, although there is a similarity at some points, it has been seen that the results of panel quantile regression analysis provide more information than classical regression analysis. Finally, *in Figure* below, the effects of explanatory variables on HTE at the 95% confidence interval are shown visually with the help of graphics.



Discussion and conclusion

The effects of R&D expenditures on HTE in the 11 Emerging Market Economies have been examined within the framework of the period 1996–2018. For this purpose, panel quantile regression analysis was applied, and the coefficients of the explanatory variables were interpreted according to different degrees of quantile. In addition to R&D expenditures, which constitute the basis of the study as an explanatory variable, real effective exchange

rate, world income, domestic income, and series of foreign direct investments as control variables were included in the model created for empirical analysis. As a result of the analysis, it was determined that the increase in R&D expenditures had a positive and significant effect on HTE in all quantiles. In addition, the effect of the real effective exchange rate on HTE varies according to different quantiles; world income has significant effects only on the country group with the lowest quantile; the variable used to represent domestic

income has positive effects on all quantiles except the 25th quantile; On the other hand, it has been determined that foreign direct investments have positive effects on all quantiles. These findings have revealed that R&D expenditures, economic growth, and foreign direct investment are important indicators of HTE in terms of the period and country set under consideration. In particular, considering the strength of the effect, it has been seen that the increase in R&D expenditures has great positive results. It is because although they differ by quantiles, the 1% increase in the ratio of R&D expenditures to GDP provides an average increase of about 7.2% in the share of high-tech product exports in industrial product exports. In addition, this effect is higher in countries below the average in terms of high technology product export rate, and the contribution of the increase in R&D expenditures of these countries will be higher.

In the study, the results obtained on the effect of R&D expenditures on HTE are fully consistent with the studies in the literature. This situation allows us to generalize that R&D expenditures have a positive

effect on HTE. It is important that more shares are allocated to R&D activities by countries as ensuring and maintaining competitive advantage depends on the increase in HTE. At this point, the power of the public and private sectors to make R&D expenditures comes to mind. Due to the lack of capital in almost all developing countries, such as most countries in the set of countries, the private sector cannot play a leading role in R&D activities. For this reason, sub-sectors of the manufacturing industry with high added value should be determined by the state by applying a selective industrialization policy, and support such as tax incentives, cheap input supply, and grants should be given to make more investments in these sectors by private entrepreneurs. In addition, using more shares from the budget for R&D activities by the state to selected sectors may make significant contributions to both the production and export of high-tech products. Finally, investments to be made by the state to increase the level of information infrastructure and human capital will have a complementary effect on R&D activities.

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Received April 28, 2022.

Development of the Institution of Local Self-Government in Russia: Problems and Prospects



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Abstract. The relevance of the article is due to the active discussions of a draft federal law on local self-government in Russia in 2022. The purpose of the work is to identify prerequisites for and substantiate promising directions of reforming the institution of local self-government in Russia. To achieve the goal we use key general scientific research methods, a questionnaire survey of Vologda Oblast municipal formations' heads conducted in 2022, a methodology for grouping municipalities by level of development to identify the specifics of the answers of heads in the context of different types of territories and reveal the attitude of municipalities' heads toward the draft law. This is what constitutes scientific novelty of the study. It is established that the low financial and economic independence of municipalities remains the main problem of local self-government. In addition, over the past ten years a significant number of constituent entities of the Russian Federation witnessed cases of abolition of the settlement level of government as municipal districts were converted into municipal and urban okrugs. It is revealed that the key controversial and ambiguous points in the draft law under consideration are as follows: abolition of the settlement level of government; strengthening the responsibility of municipalities' heads to the top official of the RF constituent entity; insufficient attention to specifying the powers and functions of local self-government bodies and resources for their full-fledged and high-quality implementation. We put forward recommendations for improving the text of the draft law for each aspect specified above. The results of the research can be used in the work of federal authorities when finalizing the draft law on local self-government and in the practical implementation of the new reform; they can also serve as a basis for further research on this topic.

For citation: Voroshilov N.V. (2022). Development of the institution of local self-government in Russia: Problems and prospects. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 170–188. DOI: 10.15838/esc.2022.5.83.9

Key words: local self-government, reform, municipal formations, Russian Federation, Vologda Oblast, questionnaire survey.

Acknowledgment

The paper was prepared within the framework of the state task for VolRC RAS on the topic of research FMGZ-2022-0012 “Drivers and methods of sustainable socio-economic development of territorial systems in a changing external and internal environment”.

Introduction

The municipal level of government is the closest to the interests and needs of the population; it is at the level of municipal formations that the maximum involvement of residents in the processes of direct management of territorial development is ensured.

In post-Soviet Russia, local self-government (LSG) is being constantly reformed. The 1993 Constitution of the Russian Federation established the autonomy of local self-government and its independence from State power. Further, in 1995, the law “On the general principles of the organization of local self-government in the Russian Federation” was adopted (154-FZ, dated September 28, 1995); in 2003, a new similar law was adopted (131-FZ, dated October 6, 2003). By January 1, 2009, the reform of local self-government in Russia was formally completed, the provisions of 131-FZ entered into force throughout the country.

In the 2010s, important new stages of further reform of this institution of power were reflected in federal laws on amendments to 131-FZ (136-FZ, dated May 27, 2014, 62-FZ, dated April 3, 2017, 87-FZ, dated May 1, 2019). Law of the Russian Federation on amending the Constitution of the Russian Federation 1-FKZ, dated March 14, 2020, introduced a new paragraph into Article 132 of the Constitution: “Local self-government bodies and state power bodies shall be integrated in the unified system of public authority in the Russian Federation, and shall cooperate to most efficiently resolve tasks in the interests of population inhabiting the relevant territory”. The publications of a number of Russian scientists (Bukhval'd, 2020; Voroshilov, 2020; Zotov, 2021; Shugrina, 2021;

Shchepachev, 2021; etc.) give a systematic and objective assessment of these constitutional changes.

The current federal law on local self-government (131-FZ) for 16 years of its implementation (since 2006) has been amended many times (there are more than 180 federal laws on the amendments); this significantly transformed the original concept, the model of the law and the mechanisms of functioning of local self-government. In this regard, the development and adoption of a new federal law on local self-government is already an objective necessity, especially if we take into account the adoption of Federal Law 414-FZ, dated December 21, 2021, “On general principles of organizing public power in constituent entities of the Russian Federation”. On December 16, 2021, the draft federal law “On the general principles of organizing local self-government in the unified system of public authority” (draft law 40361-8) was submitted to the State Duma of the Russian Federation for consideration; the subjects of the legislative initiative are Senator of the Russian Federation A.A. Klishas and Deputy of the State Duma of the Russian Federation P.V. Krashinnikov). January 25, 2022, the draft law was adopted by the State Duma in the first reading; the second reading was originally planned for June 2022, but has been postponed due to discussions in various circles regarding the new reform of local self-government and a number of other significant events in 2022 (increased sanctions pressure on Russia from Western countries since February 2022 and the need for an effective response and reaction of the Russian state and society to the new challenges of national development).

It was planned that the general provisions of the law would come into force from the date of its official publication, Chapters 2–5 and 7 – from January 1, 2023; a transitional period was established until January 1, 2028, during which municipal districts would be transformed into municipal okrugs, certain organizational and legal issues would be resolved.

We note the following fundamental innovations laid down in the draft of the new federal law:

- the number of types of municipal formations in which local self-government will be carried out (urban okrugs, municipal okrugs and intraurban territories of federal cities) is reduced from eight to three; the settlement level of government is abolished, but at the same time, in order to ensure that the interests of the population in individual settlements are taken into account, it is provided that the structure of the local administration of the urban okrug, a municipal okrug, as a rule, will include territorial bodies of local administration;

- two lists of powers of local self-government bodies are established to address issues regarding direct provision of vital activity of the population (27 powers contained in the federal law and 28 powers that can be assigned to LSG bodies by the law of the RF constituent entity);

- there is a reduction in the number of ways of forming a representative body of a municipal formation (only from deputies elected at municipal elections) and electing the head of a municipal formation (at municipal elections; by a representative body of a municipality from its own composition or from among candidates represented by the highest official of the RF constituent entity);

- responsibility of heads of municipal formations and heads of local administrations to the top official of the RF constituent entity is increased;

- there is an increase in the role of territorial public self-government, village heads, participatory projects in the management of the development of the municipality.

The adoption of the law will ensure integration of local self-government into a single system of public authority, which was established by the 2020 amendments to the Constitution of the Russian Federation. In this case, we are talking about a new, regular full-fledged reform of local self-government, which concerns all the issues of the functioning of the municipal level of government. The draft law has caused a significant widespread response among representatives of the municipal community, public authorities, scientists, experts and politicians. After the adoption of the law in the first reading in January 2022, the subjects of legislative initiative, expert, nongovernmental, and scientific organizations have already proposed more than 1,000 amendments to the text; active discussions continue on the possibility of maintaining the settlement level of government.

During the discussion of the draft law, scientists, experts, and politicians express different opinions on the prospects for further development of the institution of local self-government in Russia: from neutral (the law will not significantly worsen anything and will not fundamentally change, but only consolidate at the regulatory level the objective trends in the development of local self-government over the past 7–8 years) and extremely positive (the amendments will strengthen the status of the institution of local self-government and eliminate existing gaps in legislation) to extremely negative (the new law will complete the process of actual liquidation of real local self-government in the country and completely subordinate it to state authorities).

The publications of Russian scientists (Boldyrev, 2022; Bukhval'd et al., 2022; Gligich-Zolotareva, Luk'yanova, 2022; Kozlova, 2022; Uporov et al., 2022; Shirokov, Yurkova, 2022; etc.) have already provided a comprehensive assessment of the draft federal law: in the presence of a unified position on the objective expediency of adopting a new law on local self-government, they prove the necessity of its substantial revision with a clear justification

and understanding of the concept and further prospects for the development of local self-government in Russia. Adhering to the reasonable position expressed in these studies, we understand the need to unite the efforts of scientists, experts and practitioners to objectively analyze current problems of local self-government in Russia and develop sound recommendations for the formation of a new, effective law on local self-government.

We should note that reforms in the field of local self-government are being carried out in many countries. These reform processes are considered by many foreign economists, lawyers, political scientists, geographers, sociologists (see, for example: Ezeozue, 2020; Lockner, 2013; Meng, Cheng, 2020; Tan, 2020). A separate layer of publications (Blesse, Rosel, 2017; Blom-Hansen et al., 2016; Di Liddo, Giuranno, 2020; Erlingsson et al., 2020; Gendzwill et al., 2021; Hansen et al., 2014) is devoted to assessing the feasibility of transforming the municipal-territorial structure and its effects (unification, separation of municipalities, changing their status, borders, functionality, etc.) in various countries. Scientists agree that all transformations in the field of local self-government should be carried out taking into account the real need for them, goals, objectives, consequences (including assessment of various effects), and implementation mechanisms.

In this regard, it is important to use the methods of scientific analysis to identify real prerequisites and substantiate promising directions of reforming the institution of local self-government in Russia. This has become the purpose of the study. The following tasks are addressed: the current state of the institute of local self-government in Russia is analyzed and key problems of its functioning are identified (including with the use of the results of a questionnaire survey of municipalities' heads); the influence of political and managerial factors on the processes of socio-economic development of municipalities is shown; a generalized assessment of the main provisions of the draft new federal law on local self-government is given; the key

directions of finalizing (improving) the draft law are substantiated.

Describing the research methodology and substantiating its choice

To achieve the goal set in the article, we use standard methods of economic, statistical and comparative analysis, generalization and expert (questionnaire) survey, monographic method. The study is based on the publications of foreign and Russian scientists on regional economics, public and municipal administration.

In order to identify the attitude of the heads of municipal formations toward the draft of the new federal law on local self-government and the new municipal reform, in April – July 2022, the staff of RAS Vologda Research Center conducted a regular annual questionnaire survey of the heads of municipalities of the Vologda Oblast (questionnaires were sent to all 207 municipalities of the region; the number of filled-in questionnaires received made it possible to ensure sampling error of no more than 4–5%). Similar questionnaire surveys of municipalities' heads with varying degrees of regularity are conducted by other organizations: the All-Russian Congress of Municipal Formations, associations (councils) of municipal entities of RF constituent entities, interregional associations of municipalities (for example, the Association of Siberian and Far Eastern Cities), individual universities (for example, Tver State University). Distinctive features of VolIRC RAS questionnaire survey are its regularity (conducted annually), duration (since 2006 – since the beginning of the reform of the LSG in accordance with 131-FZ), consistency and complexity of the issues under consideration, relevance (the questionnaire is adjusted annually taking into account the specifics of changes taking place in the system of state and municipal administration in Russia and the Vologda Oblast).

Russia, like most countries, is characterized by a significant heterogeneity of economic space, manifested, among other things, in significant differences in the level of socio-economic deve-

Table 1. Grouping of Vologda Oblast districts by level of socio-economic development as of the end of 2020

Development level	Group of regions
High	1. Sheksninsky (1.536); 2. Gryazovetsky (1.406); 3. Vologoksky (1.298); 4. Kaduysky (1.246); 5. Sokolsky (1.210); 6. Nyuksensky (1.110); 7. Chagodoshchensky (1.106); 8. Velikoustyugsky (1.101)
Median	9. Cherepovetsky (1.015); 10. Totemsky (1.000); 11. Babaevsky (0.998); 12. Tarnogsky (0.956)
Low	13. Kirillovsky (0.898); 14. Mezhdurechensky (0.896); 15. Kharovsky (0.885); 16. Ustyuzhensky (0.873); 17. Belozersky (0.850); 18. Verkhovazhsky (0.843); 19. Vashkinsky (0.821); 20. Syamzhensky (0.821); 21. Vytegorsky (0.797); 22. Ust-Kubinsky (0.772); 23. Nikolsky (0.768); 24. Vozhegodsky (0.761); 25. Kichmengsko-Gorodetsky (0.718); 26. Babushkinsky (0.677)
Note: the value of the integral indicator of the level of socio-economic development of the corresponding municipal district is given in parentheses. Source: own compilation.	

development between municipal formations of each specific region (constituent entity of the Federation). In this regard, the specifics of the answers of Vologda Oblast municipalities' heads were revealed, depending on the level of development of the corresponding municipal district. The grouping of Vologda Oblast districts by level of development (*Tab. 1*) was carried out on the basis of the methodology we published previously (Voroshilov, Gubanova, 2018).

In order to assess the impact of the political factor (the policy on the development of territories carried out at the federal, regional and local levels, the key subject of the policy is, respectively, the President of the Russian Federation, the highest official of the RF constituent entity, the head of the municipal formation) on the development of municipal districts, the level of development of the district was studied in the context of the terms in office of the corresponding president, governor, and municipality head (we consider one district that in the whole analyzed period was in the group with a high level of development, and one district that in the whole analyzed period was in the group with a low level of development). The study is limited to the 2000–2015 period due to the fact that from 2014–2015 most of the constituent entities of the Federation began to switch to the model under which the head of the municipality is appointed and the positions of the head of the municipality and the head of the local administration are separated, the impact of each of them on the development of municipalities could be different. We also analyze

the territorial specifics (in the context of municipal districts and urban okrugs of the Vologda Oblast) of the electoral activity among the residents of municipalities (elections of heads of municipal entities).

Research results

First, let us briefly review the general situation with the functioning of the local self-government system in Russia on the threshold of the new municipal reform.

The total number of municipalities in the country for 2009–2021 decreased by 4,252 units, or by 18% (*Tab. 2*), which was due to the following:

- unification of urban and rural settlements in many constituent entities of the Russian Federation (the number of rural settlements decreased by 20%, in some federal districts – by more than 30%);
- transformation of municipal districts into urban okrugs (at the same time, such direct transformations were not provided for in Federal Law 131-FZ until 2019) by combining all settlements of the district into one municipal entity with the abolition of the district and settlements in 2011–2019 in the Belgorod, Bryansk, Irkutsk, Kaliningrad, Kostroma, Magadan, Moscow, Nizhny Novgorod, Orenburg, Sakhalin, Tver, Tula, Tyumen, Yaroslavl oblasts; Altai, Perm, Stavropol krais; Komi Republic; Chukotka Autonomous Okrug (Voroshilov, 2021);
- transformation of municipal districts into municipal okrugs (with the abolition of settlements) in 2019–2021 (in the Amur, Arkhangelsk, Bryansk,

Table 2. Number of municipalities in Russia in the context of federal districts, at the end of the year, units

Territory (federal district)	2006	2009	2021						2021 to 2009, %			
			Total	MD	MO	UO	US	RS	Total	MD	UO	RS
Russian Federation	24207	23907	19655	1544	180	612	1287	15742	82.2	84.4	119.5	80.4
Central	5444	5353	3902	343	20	140	331	2922	72.9	82.5	130.8	69.5
Northwestern	1636	1807	1299	133	28	38	168	821	71.9	83.6	95.0	64.5
<i>including the Vologda Oblast</i>	372	302	187	26	0	2	1	158	61.9	100.0	100.0	62.7
Southern	3166	1745	1972	157	0	42	96	1667	113.0	109.0	140.0	112.9
North Caucasian		1702	1417	88	16	40	28	1242	83.3	75.9	133.3	82.0
Volga	6805	6359	4886	346	71	104	266	4086	76.8	75.9	148.6	74.8
Ural	1351	1351	1196	84	8	111	69	917	88.5	90.3	100.9	85.7
Siberian	4190	4186	3145	246	20	71	160	2648	75.1	76.9	92.2	75.0
Far Eastern	1415	1404	1838	147	17	66	169	1439	130.9	117.6	137.5	135.6

Note: as of the end of 2021, there were also 4 urban okrugs with inner-city divisions (cities of Samara, Makhachkala, Chelyabinsk, Kirov) and 23 intraurban raions in them; 267 intraurban territories of federal cities (in Moscow – 146, in Saint Petersburg – 111, in Sevastopol – 10).
The Republic of Buryatia and Zabaikalsky Krai belonged to the Siberian Federal District until 2018, and since 2018 they have been included in the Far Eastern Federal District; this is due to a significant change in the number of municipalities in these federal districts.
MD – municipal district, MO – municipal okrug, UO – urban okrug, US – urban settlement, RS – rural settlement.
Compiled according to: The number of municipal formations in the context of constituent entities of the Russian Federation as of January 1, 2022. Available at: <https://rosstat.gov.ru/storage/mediabank/1-adm-2022.xlsx>

Kemerovo, Kirov, Kurgan, Murmansk, Nizhny Novgorod, Novgorod, Tver oblasts; Zabaikalsky, Kamchatka, Krasnoyarsk, Perm, Primorsky, Stavropol krais; Yamalo-Nenets Autonomous Okrug, etc.) (Voroshilov, 2021).

Low financial and economic independence still remains the key problem of Russian municipalities: the majority of local budgets by more than 50% are

formed by grants, subsidies, subventions and other intergovernmental transfers from regional budgets; and their own (tax and non-tax) revenues amounted to only 34% of total revenues by the end of 2021 (the minimum value is 25% in municipal districts; *Tab. 3*). In districts and urban okrugs, the value of this indicator decreased in comparison with 2006 and 2009.

Table 3. The share of own (tax and non-tax) revenues in the budgets of municipal formations of Russia for 2006–2021 in the total revenue, %

Type of municipal formation	2006	2009	2019	2020	2021	2021 to 2006, p.p.	2021 to 2009, p.p.
Rural settlements	-	-	35.7	31.6	33.8	-	-
Urban settlements	-	-	52.7	47.8	45.0	-	-
Urban and rural settlements (on average)	33.3	40.6	42.9	38.2	38.5	5.2	-2.1
Municipal districts	27.6	24.9	24.5	23.4	24.6	-3.0	-0.3
Urban okrugs, municipal okrugs	49.6	51.6	38.8	37.2	38.0	-11.6	-13.6
Intraurban municipal formations of federal cities (IUMFFC)	77.0	55.0	66.6	63.2	48.1	-28.9	-6.9
Intraurban raions	-	-	34.9	44.2	45.8	-	-
Urban okrugs with inner-city divisions	-	-	39.0	34.7	38.2	-	-
All municipal formations	39.7	39.6	34.1	32.6	33.8	-5.9	-5.8

Own compilation according to: Reports on the execution of consolidated budgets of constituent entities of the Russian Federation and budgets of territorial state extra-budgetary funds. Federal Treasury of the Russian Federation. Available at: <http://www.roskazna.ru/ispolnenie-byudzheta/konsolidirovannye-byudzhety-subektov>

Table 4. Dynamics and structure of debt of municipalities of the Russian Federation in 2006–2021

Indicator	2006	2009	2019	2020	2021	2021 to 2006
Total amount of municipal debt, billion rubles	105.16	134.87	380.11	387.24	376.75	358.26
Structure of municipal debt, %	100.00	100.00	100.00	100.0	100.0	-
municipal securities	10.90	5.28	5.60	6.37	5.27	-5.63 p.p.
loans from credit organizations	32.92	45.15	68.26	68.35	58.40	+25.48 p.p.
budget loans from other budgets of the budgetary system	33.04	32.00	24.23	23.54	34.14	+1.10 p.p.
municipal guarantees	21.68	17.10	1.91	1.74	1.18	-20.50 p.p.
other debt obligations	1.45	0.46	0.001	0.001	0.001	-1.45 p.p.

Compiled according to: The volume and structure of the state debt of constituent entities of the Russian Federation and the debt of municipal formations. Ministry of Finance of the Russian Federation. Available at: https://www.minfin.ru/ru/performance/public_debt/subdbt/

The lack of own funds in local budgets led to a significant increase in municipal debt obligations – 3.6 times over 10 years (from 105.2 billion rubles in 2006 to 376.8 billion rubles in 2021; *Tab. 4*). During this period, the share of commercial loans in the structure of municipal debt increased markedly and the share of municipal guarantees decreased.

Local self-government is primarily the participation of residents in the management of their municipality's development. Law 131-FZ "On the general principles of organizing local self-government in the Russian Federation", dated October 6, 2003, lists the main forms of direct implementation of local self-government by the population and participation of the population in the implementation of local self-government: local referendum; municipal elections; voting on the recall of a deputy, a member of an elected local self-government body, an elected official of local self-government, voting on changing the boundaries of a municipality, transforming a municipality; citizens' gatherings; citizens' law-making initiative; participatory projects (participatory budgeting, including, for example, "People's budget" projects); territorial public self-government (TPSG); village head; public hearings, public discussions; citizens' meeting; citizens' conference (meeting of delegates); citizens' survey; citizens' appeals to local self-government bodies, etc.

Various forms of residents' participation are distributed among Russian municipalities extremely unevenly (due to the unsettled nature of many issues of their functioning, as well as insufficient dissemination of best practices of their activities). Their efficiency and effectiveness also differ.

According to the Ministry of Justice of the Russian Federation, "local referendums in 2021 were held 73 times in the municipalities of four constituent entities of the Federation (72 of them were referendums on the introduction of self-taxation). In 2021, 4.5 thousand election campaigns for local self-government bodies were held in 84 constituent entities of the Federation"¹.

According to the Ministry of Justice, "gatherings of citizens in 2021 were held 1.6 thousand times to elect village heads; 2 thousand times – to resolve issues about the introduction of self-taxation; 3 thousand times – on the issues of nomination and selection of participatory projects; 2.5 thousand times – on issues of exercising the powers of representative bodies of settlements; 149 times – to discuss issues of changing the territorial organization of LSG. Public hearings in 2021 were held

¹ Information from the Ministry of Justice of the Russian Federation (extract from the report on the results of the annual monitoring of the organization and development of local self-government in the Russian Federation in 2021). Committee of the State Duma of the Russian Federation on Regional Policy and Local Self-Government. Available at: [http://komitet4.km.duma.gov.ru/upload/site28/2._INFO_MINYuSTA\(2\).pdf](http://komitet4.km.duma.gov.ru/upload/site28/2._INFO_MINYuSTA(2).pdf)

67.6 thousand times, public discussions – 20.2 thousand times, citizens’ meetings – 38 thousand times, conferences (meetings of delegates) – 4.3 thousand times. Civil law-making initiatives were considered about 65 times by local self-government bodies, in 55 cases the result of such consideration was the adoption of relevant municipal legal acts. Surveys of citizens in 2021 were conducted 1.3 thousand times, and their results were taken into account when developing appropriate solutions by local self-government bodies (and in some cases by state authorities)”. “As of the end of 2021 there were approximately 35 thousand TPSG bodies, whose charters are registered with local self-government bodies, within the boundaries of 6.6 thousand municipal formations (34% of the total number of municipalities in Russia). At the same time, about 16.4 thousand TPSG bodies (46.8% of their total number) are located in rural settlements, 12.6 thousand (39.2%) – in urban okrugs, 4.2 thousand (12%) – in urban settlements, 5 thousand (4.4%) –

in municipal okrugs. About 2.9 thousand TPSG bodies (8.3% of their total number) have the status of legal entities and about 3.6 thousand TPSG bodies (10.4% of their total number) have concluded contracts (agreements) with local self-government bodies providing for the use of local budget funds in the implementation of TPSG activities for the improvement of territories and other economic activities. Village heads are appointed to 27.9 thousand settlements located within 5.9 thousand municipalities”.

Next, let us consider the results of a questionnaire survey conducted among the heads of municipal formations of the Vologda Oblast in 2022.

The lack of opportunities (financial; legal – in terms of the availability of appropriate powers; organizational, etc.) to solve key problems and tasks in many areas of municipalities’ development remains the major issue in the functioning of the municipal level of government. Thus, at least a third of the heads of Vologda Oblast districts (*Tab. 5*)

Table 5. Distribution of answers of Vologda Oblast municipalities’ heads to the question “Please evaluate the capabilities of local governments of your municipal formation to address issues in the following spheres”, proportion of respondents who chose the answers “extremely low” and “low” capabilities, %

Sphere	Type of municipal formation			
	MD	RS	High	Low
Providing housing to population	66.7	46.4	37.5	59.1
Increasing tourist attractiveness	41.7	50.0	43.8	45.5
Road construction and maintenance in relation to local highways	41.7	39.3	31.3	31.8
Housing and communal services	33.3	57.1	37.5	45.5
Unemployment and employment	33.3	55.6	37.5	38.1
Formation of the economic base of the municipality	33.3	46.4	37.5	36.4
Increasing the level of social activity	33.3	29.6	25.0	27.3
Providing residents with transport services	25.0	53.6	43.8	36.4
Ensuring social protection of population	16.7	32.1	31.3	18.2
Small business development	16.7	64.3	43.8	45.5
Improvement of the territory	16.7	25.9	31.3	9.5
Ensuring public order	8.3	42.9	37.5	18.2
Providing quality education	8.3	46.4	25.0	27.3
Environmental protection	8.3	32.1	37.5	13.6
Organizing recreation and culture	0.0	14.3	6.3	4.5

Designations here and in the following tables are as follows:
MD – municipal districts (on average, according to the number of heads of municipal districts who filled in the questionnaire);
RS – rural settlements (on average, according to the number of heads of rural settlements who filled in the questionnaire);
High – on average, according to the number of respondents from municipal districts with a high level of socio-economic development;
Low – on average, according to the number of respondents from municipal districts with a low level of socio-economic development.
Source here and further: the results of a questionnaire survey of the heads of municipal formations of the Vologda Oblast, conducted in 2022.

pointed out extremely low and low opportunities for managerial influence in the areas of development of housing, tourism, road construction and maintenance, housing and communal services, employment, economic base for the formation of the local budget, and civic engagement. In rural areas, transport services and small business development also have troublesome issues. Among the respondents from municipalities with a low level of development, there is a greater proportion of those who indicate poor opportunities for independent solution of relevant tasks and problems; this emphasizes, among other things, the reliability of the questionnaire survey of municipalities' heads and the adequacy of the methodology used to assess the level of socio-economic development of municipalities.

The attitude of Vologda Oblast municipalities' heads toward the key aspects of the new municipal reform (the draft of the new federal law on local self-government) is generally ambiguous. More than a quarter of all the municipalities' heads taking part in the survey (*Tab. 6*) show a negative attitude toward the establishment of two lists of issues of local self-government and the strengthening of the responsibility of heads to the highest official of the constituent entity of the Federation. Naturally, heads of rural settlements are extremely negative about the liquidation of the settlement level (43% of all respondents against 8% among district heads). From 17 to 37% of respondents also negatively

assess the increasing role of various forms of self-organization of the population (TPSG, village heads, participatory projects). This can be due to the fact that the functioning of these forms has not been streamlined so far, as well as the procedure of their interaction with local governments, their real role in the development of municipalities and specific localities. Heads of municipalities with a lower level of development generally have a more negative attitude toward the main provisions of the new local government reform.

Respondents point out the aspects and problems that should be solved within the framework of the new reform of local self-government, primarily related to increasing the financial and economic independence of municipalities (more than 74% of heads; *Tab. 7*), ensuring that the scope of powers corresponds to the volume of resources for their execution, and specifying the issues of local significance and the powers of local self-government bodies. Heads of rural settlements also highlight the importance of the possibility of maintaining an independent settlement level of administration.

As for raising financial and economic independence, according to the majority of the surveyed heads, the revenue base of local budgets needs to be more than doubled (33% of district heads and 30% of rural settlement heads chose this answer; *Tab. 8*). Many respondents also indicated the need to increase the revenue by more than 50%.

Table 6. Distribution of answers of Vologda Oblast municipalities' heads to the question "How would you assess the key changes in the system of local self-government provided for by the draft federal law "On general principles of organizing local self-government in the unified system of public authority"?", proportion of respondents who chose the answers "negative" and "sooner negative", %

Direction of the local self-government reform in the draft of the new federal law	Type of municipal formation			
	MD	RS	High	Low
Transition to a single-level organization of local self-government (abolition of settlements, transformation of municipal districts into municipal okrugs)	8.3	42.9	25.0	40.9
Establishment of a list of 27 powers of local self-government bodies to address issues of direct provision of vital activity of the population and a list of 27 powers that can be contained in the law of the constituent entity of the Russian Federation	25.0	25.9	20.0	31.8
Strengthening the responsibility of heads of municipal formations and heads of local administrations to the highest official of the constituent entity of the Russian Federation	25.0	29.6	31.3	31.8
Increasing the role of territorial public self-government, village heads, participatory projects in the management of municipality's development	16.7	37.0	18.8	36.4

Table 7. Distribution of answers of Vologda Oblast municipalities' heads to the question "What key points, in your opinion, should be reflected in the new federal law on local self-government and implemented as part of the new reform of local self-government?", % of respondents

Desired direction of local self-government reform, which should be reflected in the new federal law	Type of municipal formation			
	MD	RS	High	Low
Increasing the financial and economic independence of municipal formations, securing new revenue sources of local budgets (for example, directing part of the income tax to local budgets)	91.7	74.1	82.4	81.0
Unconditional provision of the principle of compliance of the functions and powers of local self-government bodies with the volume of revenue sources assigned to this level of local budgets for their implementation	83.3	59.3	64.7	71.4
Establishing a specific, closed list of issues of local importance, powers of local self-government bodies (specification, elimination of general or unclear formulations of powers, etc.)	66.7	48.1	58.8	42.9
Ensuring guarantees of real independence of local self-government in solving issues and tasks of local importance, eliminating excessive control and supervision of local self-government bodies on the part of state authorities and other inspection and control structures	41.7	37.0	47.1	47.6
Possibility of a differentiated approach to the territorial organization of local self-government in various constituent entities of the Federation (including possible preservation of the settlement level of management)	16.7	44.4	23.5	33.3
Ensuring the implementation of a differentiated approach to the directions and measures of state support for socio-economic development of territories, taking into account the demographic situation, characteristics of the settlement system, level and dynamics of economic development, and specific natural conditions	16.7	48.1	41.2	42.9
Ensuring real guarantees and the role of various forms of direct implementation of local self-government by the population (referendum, elections, citizens meeting, territorial public self-government) and forms of participation of the population in the implementation of local self-government (survey, public hearings, public discussions, citizens assembly, participatory projects, village head) in the development of municipalities	25.0	37.0	29.4	38.1
Creating conditions for the effective development of existing and new forms of intermunicipal cooperation (for example, the possibility of creating intermunicipal enterprises and intermunicipal companies)	8.3	18.5	11.8	23.8

Table 8. Distribution of answers of Vologda Oblast municipalities' heads to the question "By how many percent, in your opinion, is it necessary to increase the revenue base of the budget of your municipal formation for a complete and qualitative solution of all issues and problems of local importance?", % of respondents

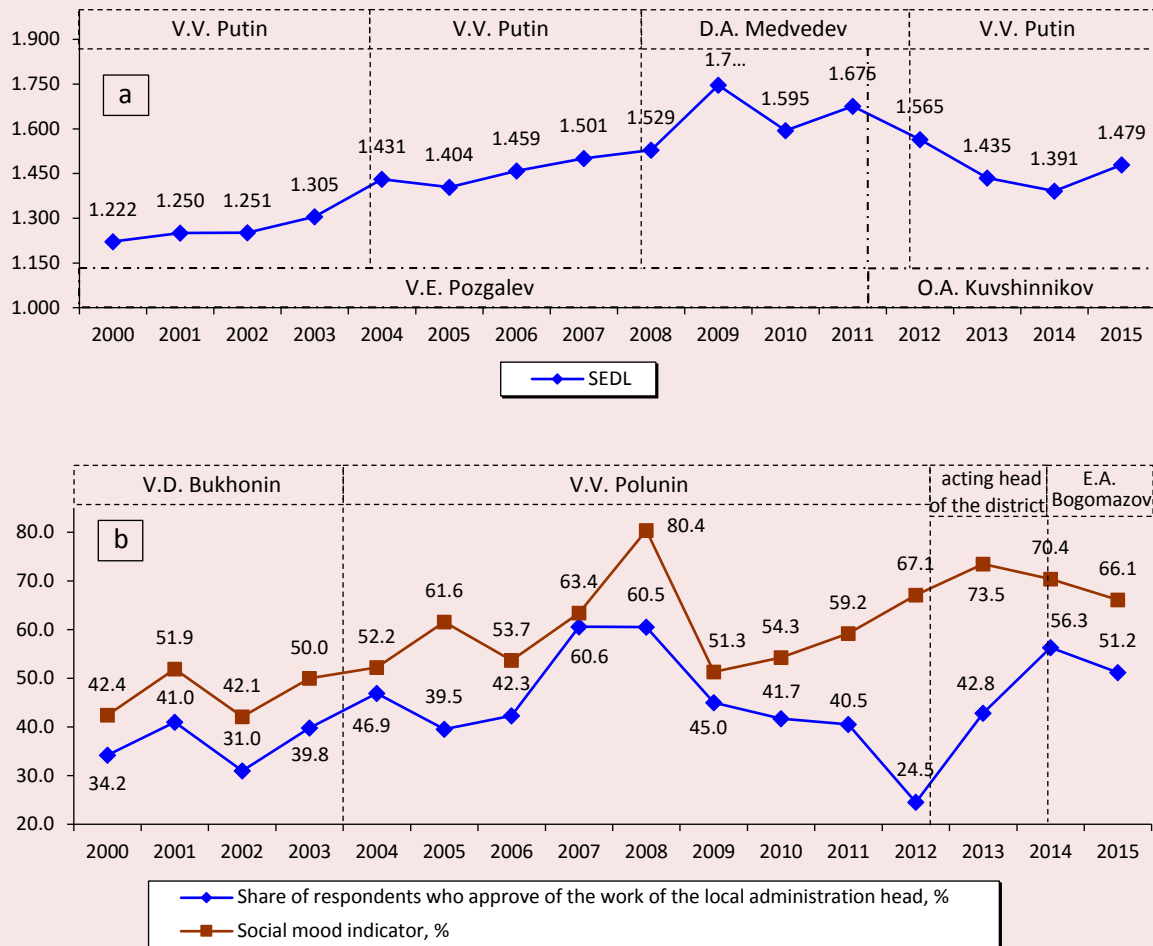
Desired percentage of increase in the revenue base of the local budget	Type of municipal formation			
	MD	RS	High	Low
By 10–20%	0.0	3.7	0.0	0.0
By 21–30%	0.0	3.7	5.9	0.0
By 31–50%	16.7	22.2	5.9	19.0
By 51–70%	25.0	11.1	11.8	23.8
By 71–100%	16.7	22.2	5.9	33.3
By more than 100% (more than twice)	33.3	29.6	58.8	19.0
It's difficult to answer	8.3	0.0	0.0	4.8

Next, let us consider the influence of the political and managerial factor on the development of two districts of the Vologda Oblast – one with a high and the other with a low level of socio-economic development.

Throughout the analyzed period (2000–2015), Sheksninsky District was included in the group with a high level of development. From 2000 to 2009, Sheksninsky District showed a positive trend in the values of the integral indicator of the level of socio-economic development, from 2010 to 2014 – their decline, and in 2015 – an increase (Fig. 1).

In 2000–2008, the level of approval of the work of the local administration head in the district increased from 34 to 61% (see Fig. 1b). However, in subsequent years, it changed: in 2012, only a quarter of the population approved of the activities of the head, which led to his resignation at the end of the year. The acting head of the district and the newly elected head E.A. Bogomazov on the whole managed to regain a sufficient level of public trust in 2013 and 2014. The value of the indicator of social mood in Sheksninsky District was the maximum in the pre-crisis 2008, 80%; it sharply decreased in

Figure 1. Dynamics of the level of development of Sheksninsky Municipal District of the Vologda Oblast and people’s estimates regarding the activities of the head of the municipality and their social mood



Designations hereinafter: SEDL – socio-economic development level; indicator of social mood – proportion of respondents who chose the answer option “Good mood, normal, fine condition”, %.

Source: Socio-Economic Development of Municipal Districts. 2000–2015. Issue 4. Vologda: VoIRC RAS, 2017. 64 p. (Public administration efficiency).

2009 (51%), and its growth was then observed in subsequent years.

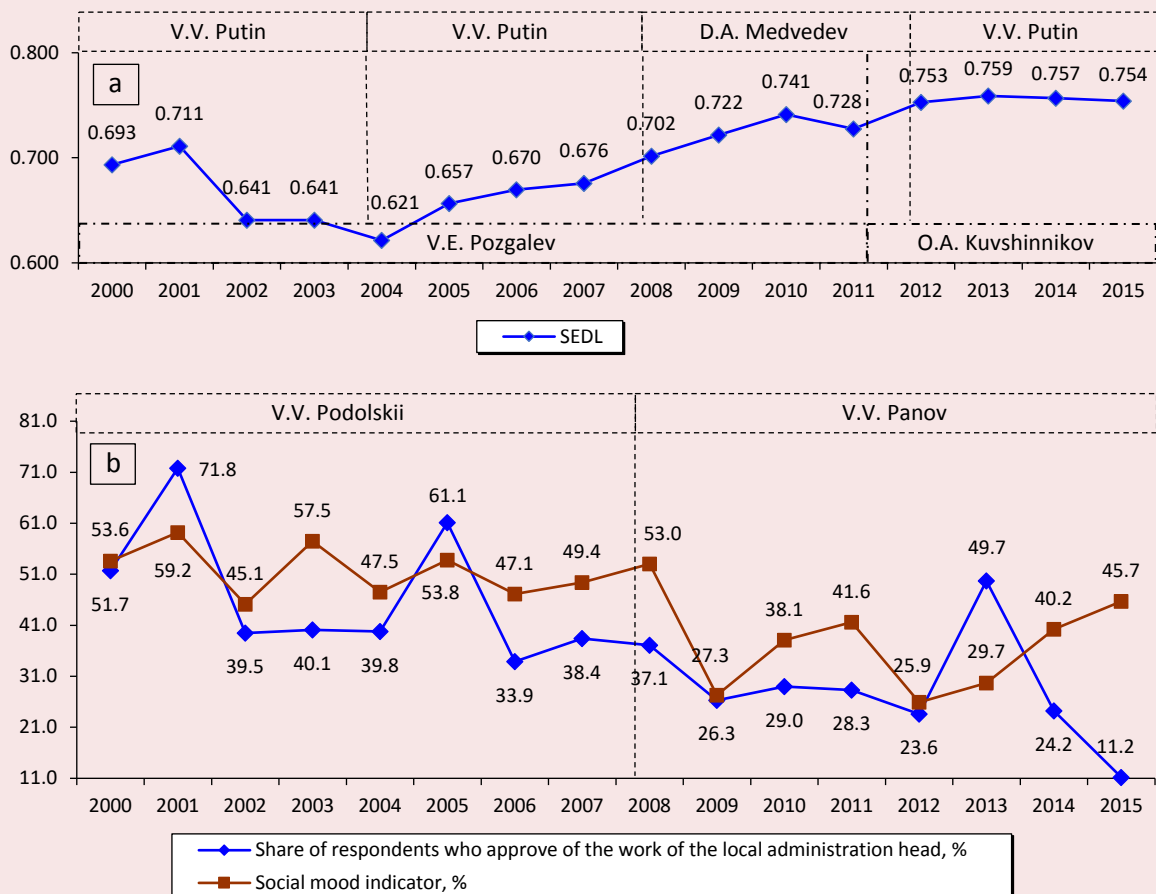
Nikolsky District was in the group with a low level of socio-economic development throughout the analyzed period, but since 2005 there has been a slight increase in this indicator (Fig. 2).

At the same time, there were significant fluctuations in the level of approval of the activities of the district head. The work of district head V.V. Podolsky during his entire term in office was assessed positively by 34–72% of district residents, which is more than his successor (V.V. Panov) – from 11 to 50% (see Fig. 2). Social sentiments are

also unstable: from 26% of district population in 2012 to 59% in 2001 noted a good mood and an even condition.

According to the presented assessments, we can conclude that the activities of certain political figures at the federal, regional or local level do not significantly affect the overall level of development of the municipalities under consideration. Current trends and problems in the development of local territories are due to many different factors, and the key ones are the state policy in the field of local self-government, the position and role of this institution in the unified system of public power in the country.

Figure 2. Dynamics of the level of development of Nikolsky Municipal District of the Vologda Oblast and population estimates regarding the work of the municipality head and their social mood



Source: Socio-Economic Development of Municipal Districts. 2000–2015. Issue 4. Vologda: VolRC RAS, 2017. 64 p. (Public administration efficiency).

Next, let us consider the specifics of the course of electoral processes at the local level². Among such processes, only the elections of rural settlements' heads are standard and regular (in accordance with the amendments made to federal and regional legislation, in many regions, including the Vologda Oblast, the heads of districts, urban okrugs and urban settlements are not directly elected by the

population, but are appointed by the representative body of the municipality, based on the results of a competition conducted by the relevant competition commission).

Analyzing the results of the elections of rural settlements' heads in the Vologda Oblast for 2018–2022 (77 election campaigns), we found that the turnout ranged from 18 to 71% (Tab. 9); the

Table 9. Results of voting at the elections of heads of rural settlements of the Vologda Oblast in 2018–2022

Date	Settlement, district	Permanent population at the end of 2020, people	Voter turnout, %	Number of candidates, people	Number of parties represented by candidates, units	Share of votes for the winning candidate, %
13.05.2018	Irdomatskoye RS, Cherepovetsky	2403	22.1	4	3	45.4
09.09.2018	Lipinoborskoye RS, Vashkinsky	3682	25.2	2	1	57.3
09.09.2018	Opokskoye RS, Velikoustyugsky	1016	62.2	4	3	66.6
09.09.2018	Verkhovazhskoye RS, Verkhovazhsky	5581	29.2	4	2	43.3
09.09.2018	Nizhnekuloiskoye RS, Verkhovazhsky	667	70.8	4	2	38.6
09.09.2018	Spasskoye RS, Vologodsky	4977	22.2	6	5	57.3
09.09.2018	Argunovskoye RS, Nikolsky	874	51.4	2	1	53.7
09.09.2018	Krasnopolyanskoye RS, Nikolsky	5254	33.4	3	2	73.8
09.09.2018	Zavrazhskoye RS, Nikolsky	982	52.5	6	3	45.8
09.09.2018	Zelentsovskoye RS, Nikolsky	873	47.6	2	1	86.7
09.09.2018	Kemskoye RS, Nikolsky	1231	35.6	2	2	85.6
09.09.2018	Semigorodneye RS, Kharovsky	1055	43.3	2	1	87.9
09.09.2018	Sizemskoye RS, Sheksninsky	1389	50.4	3	3	79.1
09.09.2018	Zheleznodorozhnoye RS, Sheksninsky	613	47.4	4	4	52.0
16.12.2018	Devyatinskoye RS, Vytegorsky	4070	18.0	3	3	56.4
24.03.2019	Nikolskoye RS, Kaduysky	1559	48.3	3	2	83.5
24.03.2019	Spasskoye RS, Tarnogsky	920	59.1	3	2	55.8
24.03.2019	Zhelyabovskoye RS, Ustyuzhensky	2035	44.4	3	2	62.9
26.05.2019	Fedotovskoye RS, Vologodsky	4183	40.5	6	3	41.8
08.09.2019	Ankhimovskoye RS, Vytegorsky	1491	58.4	3	3	53.6
08.09.2019	Talitskoye RS, Kirillovsky	1437	49.2	3	2	86.5
08.09.2019	Alyoshinskoye RS, Kirillovsky	861	56.4	3	2	76.4
08.09.2019	Lipovskoye RS, Kirillovsky	724	69.3	3	2	80.1
08.09.2019	Charozerskoye RS, Kirillovsky	578	55.6	3	2	81.4
08.09.2019	Verkhovskoye RS, Tarnogsky	502	66.1	2	2	77.6
08.09.2019	Nikolskoye RS, Sheksninsky	1359	55.3	2	2	77.5
15.12.2019	Ramenskoye RS, Syamzhensky	868	68.7	3	2	89.0
15.03.2020	Minkovskoye RS, Babushkinsky	2233	41.3	3	3	49.1
15.03.2020	Mardengskoye RS, Velikoustyugsky	1008	69.3	4	3	65.6
15.03.2020	Samotovinskoye RS, Velikoustyugsky	3011	53.4	7	3	54.6
15.03.2020	Chebsarskoye RS, Sheksninsky	1299	36.7	3	2	91.3
13.09.2020	Babaevskoye RS, Babaevsky	952	49.3	3	2	83.8

² The analysis of election campaigns at the federal and regional levels is presented in the issues of the information and analytical bulletin published by VoIRC RAS (see, for example: *Socio-Economic Development of Municipal Districts (2000–2021). Issue 9*. Vologda: VoIRC RAS, 2022. 108 p.).

End of Table 9

Date	Settlement, district	Permanent population at the end of 2020, people	Voter turnout, %	Number of candidates, people	Number of parties represented by candidates, units	Share of votes for the winning candidate, %
13.09.2020	Borisovskoye RS, Babaevsky	3092	44.9	3	2	91.3
13.09.2020	Podbolotnoye RS, Babushkinsky	1328	59.1	4	2	56.9
13.09.2020	Sholskoye RS, Belozersky	1193	39.6	3	2	73.3
13.09.2020	Antushevskoye RS, Belozersky	1026	45.3	3	2	76.4
13.09.2020	Artyushinskoye RS, Belozersky	1494	55.8	4	2	47.8
13.09.2020	Andreevskoye RS, Vashkinsky	1355	34.4	3	2	65.4
13.09.2020	Kisnenskoye RS, Vashkinsky	1342	37.3	3	2	73.3
13.09.2020	Krasavinskoye RS, Velikoustyugsky	996	36.8	3	2	86.9
13.09.2020	Tregubovskoye RS, Velikoustyugsky	1665	41.5	3	2	86.0
13.09.2020	Verkhovskoye RS, Verkhovazhsky	827	54.3	3	2	71.6
13.09.2020	Yuchkinskoe RS Vozhegodsky	1016	51.9	3	2	91.9
13.09.2020	Spasskoye RS, Vologodsky	4977	20.5	4	4	70.8
13.09.2020	RS Simezerye, Kaduisky	1496	39.7	3	2	52.9
13.09.2020	Ferapontovskoye RS, Kirillovsky	1528	51.5	3	2	90.5
13.09.2020	Staroselskoye RS, Mezhdurechensky	850	58.1	3	2	74.8
13.09.2020	Nikolskoye RS, Nikolsky	2028	43.9	3	2	65.6
13.09.2020	Nyuksenskoye RS, Nyuksensky	5569	43.9	5	3	55.4
13.09.2020	Dvinitzkoye RS, Sokolsky	733	46.4	3	2	56.6
13.09.2020	Prigorodnoye RS, Sokolsky	1701	33.5	3	2	81.2
13.09.2020	Kalininskoye RS, Totemsky	1382	49.3	3	2	79.9
13.09.2020	Pyatovskoye RS, Totemsky	5644	28.6	3	2	69.8
13.09.2020	Ustyanskoye RS, Ust-Kubinsky	4785	48.1	4	2	57.9
13.09.2020	Lentyevskoye RS, Ustyuzhensky	840	54.4	4	2	85.4
13.09.2020	Ilyinskoye RS, Kharovsky	464	55.7	3	2	89.9
13.09.2020	Kubenskoye RS, Kharovsky	1182	65.6	4	3	57.2
13.09.2020	Kharovskoye RS, Kharovsky	1150	58.2	3	2	89.0
13.09.2020	Shapshinskoye RS, Kharovsky	774	61.3	3	2	68.2
13.09.2020	Ulomskoye RS, Cherepovetsky	3085	40.3	3	2	49.9
13.09.2020	Ershovskoye RS, Sheksninsky	848	59.2	3	3	46.1
13.09.2020	Ugolskoye RS, Sheksninsky	4926	69.0	3	2	86.9
19.09.2021	Babushkinskoye RS, Babushkinsky	4724	39.9	2	1	80.2
19.09.2021	Yudinskoe RS, Velikoustyugsky	2803	50.0	2	1	52.8
19.09.2021	Nizhne-Vazhskoye RS, Verkhovazhsky	1673	-	2	1	-
19.09.2021	Nizhneslobodskoye RS, Vozhegodsky	591	56.8	2	1	84.8
19.09.2021	Igmasskoye RS, Nyuksensky	520	51.5	2	1	65.6
19.09.2021	Noginskoye RS, Syamzhensky	2483	55.2	2	1	61.2
19.09.2021	Markushevskoye RS, Tarnogsky	566	61.3	2	1	66.7
19.09.2021	Mezhenskoye RS, Ustyuzhensky	544	48.3	2	1	67.6
19.09.2021	Belokretskoye RS, Chagodoshchensky	2082	53.2	2	1	78.7
19.09.2021	Klimovskoye RS, Cherepovetsky	2370	48.4	4	2	44.6
19.09.2021	Yugskoye RS, Cherepovetsky	3931	45.2	6	4	42.6
28.11.2021	Nizhne-Vazhskoye RS, Verkhovazhsky	1673	45.5	4	1	94.0
30.01.2022	Ust-Alekseevskoye RS, Velikoustyugsky	1148	63.9	6	2	57.2
30.01.2022	Chebsarskoye RS, Sheksninsky	1299	28.3	4	3	78.2
27.03.2022	Zarechnoye RS, Velikoustyugsky	818	38.8	2	1	91.3

Compiled according to: Election Commission of the Vologda Oblast (State automated system "Vybory"): website. Available at: <http://www.vologod.vybory.izbirkom.ru/region/vologod>

percentage of votes cast for the winning candidate – from 37 to 94%; from 2 to 7 candidates representing from 1 to 5 political parties in each individual election campaign participated in the campaigns. All this indicates a rather low participation of the population in the electoral processes and a rather weak legitimacy of the elected heads of settlements due to the extremely low turnout at the majority of municipal elections.

Let us proceed directly to analyzing the draft federal law “On the general principles of organizing local self-government in the unified system of public authority”. Without repeating most of the statements, opinions, judgments on this draft law, we will try to highlight some points that have not received widespread response and resonance, but are important for the new stage of municipal construction.

1. If the settlement level of government is liquidated (the abolition of urban and rural settlements), it is important to prevent a decrease in the accessibility of local authorities for residents. The possibility of creating territorial bodies of local administration provided for in the draft law (in the territories of urban and rural settlements being abolished) should be made mandatory, and all the details regarding their functionality, the number of employees, etc. should be elaborated thoroughly.

2. Municipalities will not be administrative-territorial units; thus, in some cases there will be a discrepancy between the municipal-territorial and administrative-territorial structure; this fact already causes many problems in the field of urban planning and land use (Bukhval'd et al., 2022), and also creates difficulties in the formation of reliable, complete and high-quality statistical information on municipalities. In the context of the new reform, it is important to eliminate all existing inconsistencies between the two types of territorial structure.

3. It is desirable to exclude the wording of one of the grounds for the removal of the head of a municipality (“systematic failure to achieve

performance indicators of local self-government bodies”, Paragraph 3 of Article 21 of the draft law); and if it is preserved, then it is necessary to make a specific regulatory and legal elaboration, taking into account the following points:

- determine the timing when there is “systematic failure to achieve the indicators” (six months, 1 year, 2–3 years, etc.);

- revise the list of indicators characterizing the effectiveness of the activities of local self-government bodies and the head of the municipality (currently, the indicators approved by Presidential Decree 607, dated April 28, 2008 and RF Government Resolution 1317, dated December 17, 2012 reflect the activities of not only one head of the municipality, but also all LSG bodies of the municipality, and the values of some indicators are formed under the influence of many various factors, not always connected with the direct activities of local self-government bodies (Bukhval'd et al., 2022);

- elaborate the criteria (threshold values, value boundaries) for achieving/not achieving performance indicators of the head of the municipality and LSG bodies as a whole and substantiate the very possibility of determining the values of performance indicators for several thousand municipalities of Russia that differ in many parameters (Bukhval'd et al., 2022).

In addition, Article 23 of the draft law provides for the following grounds for the dismissal of the head of the local administration: violations committed by the head when addressing issues of direct provision of the vital activity of the population. However, it is unclear what will be the criterion for this violation, given that the budgets of many municipalities objectively may not have enough funds to fully address all issues of local importance.

4. The new federal law on local self-government should contain not only restrictions, prohibitions, grounds for long-term termination of the

powers of officials (their number in the draft law under consideration is already clearly excessive), but also guarantees to local self-government bodies themselves to ensure their independence in addressing issues of local importance; guarantees of the necessary amount of financial resources for high-quality and effective execution of powers; guarantees of prevention of unjustified interference in the activities of local self-government bodies by state authorities, excessive control and supervision of their activities.

5. It is advisable to exclude or specify the authority of local self-government bodies contained in Article 32 to “ensure the availability of medical care”, given that all issues and tasks of the development of medicine at the regional level are currently being addressed by the state authorities of the constituent entity of the Federation.

6. Chapter 8 “Intermunicipal cooperation” lists the same forms of intermunicipal cooperation that exist in the current 131-FZ: participation in the associations of municipal formations, establishment of intermunicipal economic societies (in the form of PJSCs and LLCs), creation of non-profit organizations in municipal formations (in the form of autonomous NPOs and foundations), conclusion of contracts and agreements. However, as practice shows, cooperation between Russian municipalities is mainly carried out within the framework of the activities of various associations of municipalities, exchange of experience between local governments, conclusion of various “framework” agreements and agreements on cooperation and intentions of interaction, organization of joint events. The closest (“economic”) forms of cooperation (establishment of intermunicipal economic societies and nonprofit organizations) are distributed extremely poorly (about 500–600 municipalities out of 20 thousand are founders of such organizations) due to the presence of many regulatory, organizational, financial and other obstacles and restrictions. The

adoption of special normative legal acts in the field of intermunicipal cooperation would help to solve these problems. Thus, on September 4, 2020, the Ministry of Economic Development of the Russian Federation posted a package of draft laws (however, they have not been submitted to the State Duma for two years) on the federal portal of draft regulatory legal acts (<https://regulation.gov.ru/projects#npa=107906>); the draft laws are aimed at legal regulation of the development of urban agglomerations (draft federal law “On urban agglomerations”) and improvement of legal mechanisms of intermunicipal cooperation. In particular, it was envisaged to introduce new forms of intermunicipal cooperation: intermunicipal enterprises and intermunicipal companies.

In general, it seems that this draft law was developed most likely without any vision of the concept of the new reform of local self-government, without a detailed in-depth analysis of the real problems of municipal governance and the development of municipalities in Russia, without the broad involvement of representatives of municipalities, scientific and expert communities.

Analyzing and explaining the results obtained

The main question that needs to be answered based on the results of a detailed analysis of the situation related to the new reform of local self-government and an assessment of the current situation in this area: does the draft law solve all the existing problems in the functioning of the institution of local self-government? It is not yet possible to give an unambiguously positive or negative answer. And yet, we hope that the most fundamental shortcomings of the draft law will be taken into account in the framework of the work on its amendments before the adoption of the law in its final form, and the reform of local self-government itself (if it is implemented at all in the near future, and not postponed due to events taking place in 2022) will eventually be launched

taking into account the interests, positions, real requests, needs of local self-government bodies with the participation of leading experts, scientists and specialists in this field. For these purposes, it is also advisable for federal authorities to establish a special institution (for example, from 1999 to 2010, Federal State Scientific Institution “Russian Scientific Center for State and Municipal Administration” was functioning in Moscow), which will analyze the processes of the reform of LSG, communicate with municipalities, work out scientifically substantiated and coordinated proposals for improving local self-government and all legislation related to this institution of public authority, as well as other analytical and expert activities.

As a result of a questionnaire survey conducted in 2022 among the heads of Vologda Oblast municipalities, key directions for improving the state policy in the field of development of LSG were also identified (they were indicated by 25 to 92% of the surveyed heads of municipalities):

- revision of federal legislation regarding the assignment of additional sources of income to the local level of government and the clear establishment of the spheres of activity and powers of local self-government bodies;
- active development of clusters in the region (forestry, dairy, chemical, engineering, tourism);
- replacement of subsidies to the local budget with additional standards of deductions from individual income tax;
- development, together with municipalities, of a special state program of the constituent entity of the Federation to support and develop local self-government, including state support for territorial public self-government, local initiatives;

- constant dissemination of best practices of municipal management from the experience of the Vologda Oblast and other regions;
- mandatory search for compromise options together with the population and local authorities when optimizing the network of social institutions;
- inclusion of the territorial section in regional strategies and programs (targets, tasks and activities for each municipal district, etc.);
- assistance (consulting, methodological, etc.) in organizing various forms of intermunicipal cooperation.

The general directions outlined in the article concerning the revision of the draft federal law on local self-government and recommendations for the reform of this public authority institution certainly require further elaboration and substantiation so that they become real legal norms and appropriate effective management mechanisms. Our subsequent scientific research and publications will address these problems.

The ideas and recommendations proposed in the article are polemical; they open up opportunities for further effective discussions on this topical issue (among managers, scientists, experts and other interested persons). Thus, the contribution of the research, the results of which are presented in the article, to the development of theoretical science consists in a scientific understanding of the prerequisites and prospects for the functioning of the institute of local self-government in Russia, taking into account socio-economic, political and other factors; contribution to the development of applied science consists in substantiating specific recommendations for the adjustment of the draft of the new federal law on local self-government.

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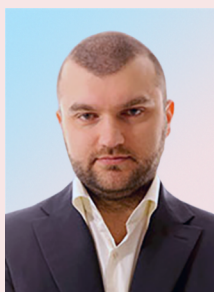
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Received August 17, 2022.

Consumer Society and Social Development: Modeling Statistical Relationships



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Abstract. The article attempts to empirically assess the links between the consumerization process and various indicators of social development. We consider these indicators, as well as the process of consumerization itself, at the macrosocial level, as characteristics of societies. The latter are equated with nation-states, whose sovereignty turns each of them into a kind of long-term social experiment. Based on such “experiments”, we attempted to determine how the degree of expansion of the consumer society in the same countries is related to the indicators of social development. To achieve this goal, we analyze ways to measure the consumerization of societies and their social development, and then conduct a correlation analysis of the available data. It allows testing two competing hypotheses: the negative or positive impact of the consumer society on aspects such as freedom, education, equality, security and happiness. This analysis of statistical relationships suggests that a higher level of consumerization is associated with a

For citation: Babich N.S., Batykov I.V. (2022). Consumer society and social development: Modeling statistical relationships. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 189–202. DOI: 10.15838/esc.2022.5.83.10

higher level of social development, at least on some indicators, such as the level of freedom, gender equality, and subjective well-being. The correlation with these indicators persists even after adjusting for per capita GDP. The presence of statistically significant stable links with social development and the absence of any links with social degradation allows drawing a preliminary conclusion about the refutation of the basic hypothesis of the consumerism criticism and the confirmation of its proponents' correctness. However, our analysis confirms the connection between consumer society and social development, based on data in a sense formatted by consumer society itself. Therefore, for the final verification of competing hypotheses, it is necessary to develop new, critically oriented quantitative indicators of social development.

Key words: consumerization, consumer society, social development, correlation analysis, freedom, equality, safety, education, subjective well-being, “good society”.

Introduction

The concept of “consumer society” became widespread in social sciences only since the middle of the 20th century (Sassatelli, 2007, pp. 2–3), with the preparation to its sociological comprehension and the main work on the interpretation of “consumption” phenomenon taking place in the neo-Marxist environment, within the framework of “critical theory” development and, above all, criticism of capitalism ways that seemed deadlocked then (Kellner, 1983). Negative assessments of various manifestations of consumerization were made by H. Marcuse (Marcuse, 1994), E. Fromm (Fromm, 1990), M. Horkheimer and T. Adorno (Horkheimer, Adorno, 1997) and other representatives of the Frankfurt School, whose rhetoric was later taken up by left-wing postmodernists, such as Jameson (Jameson, 2000) and J. Baudrillard (Baudrillard, 2006). The basic hypothesis underlying the critique of the consumer society is that it substitutes false values for true values by means of promotional methods, closing the door to meaningful social development (Gilbert et al., 2021). Due to the great influence of critical theory and postmodernism on the social sciences, the term “consumer society” itself has acquired strong negative connotations and has almost become a pejorative, today most often read as “a society of rampant consumerism” or “a society in which

consumption is paramount”. Russian sociologists (Il'in, 2005; Kozlovskii, 2011; Ovsyannikov, 2011) also largely adhere to this approach. For Russia, the justice of the critical approach is reinforced by the coincidence in time of the expansion of the ideology of consumerism and social degradation of the state in the 1980s–1990s. The collision between the consumerization of society and the growth of scarcity in the late Soviet Union is still poorly understood (Zubkova, 2020), but there is no doubt that it predetermines the traumatic perception of consumer culture throughout the post-Soviet space, including Russia (Yakovenko, 2021).

However, as is usually the case, there is also an opposing theoretical tradition in the history of social thought. Less popular, it nevertheless offers its own holistic interpretation of consumer society not as a dead end, but as a natural stage of economic and social development, associated with a saturation of basic material and cultural needs that exists for the first time in history (Katona, 1964). With its costs, such a society can obviously still be preferable to the societies of mass poverty that have existed in the past. And this preference is not limited only to relative satiety, health and amenities. Many theoretical models, such as A. Maslow's hierarchy of motivation (Maslow, 1999) or Rostow's stages of economic

development (Rostow, 1973), predict that meeting basic needs opens up new opportunities for cultural and personal growth, as well as political participation (Chessel, Dubuisson-Quellier, 2018). Consequently, a consumer society that surpasses previous stages of development in the provision of goods and services can actually be a bridge to the next – the cultural stage of social development. In any case, in historical retrospect, the formation of modern consumer culture appears to be closely tied to the ideas of the Enlightenment (Kwass, 2022).

At first glance, the contradictions between the two schools of thought on consumer society may seem intractable in principle, since they are based on different value approaches: in one case the dignity of man as a free and thinking being is prioritized, in the other – as deserving of comfortable and safe conditions of existence. But the search for a regulatory framework for evaluating societies, that is, attempts to develop models of a “good society”, has long been, if not a priority, then at least a very respectable area of social research (Fedotova, 2005). Thus, the question of how “good” the consumer society is, whether it represents a step forward in social development, has every reason to be raised and is quite often raised. Unfortunately, in the literature, it is not addressed through systematic statistical comparisons, but mostly through the analysis of individual trends, such as the role of consumerism in sustainable development (Cohen, 2016), ecology (Smart, 2010), or quality of life (Nevarez, 2011). This analysis often borders on journalism in the prevalence of impressionistic, subjective judgments of the author. The reason for this is the lack of strict definitions of consumer society (Lofgren, 1994, p. 50; Fine, 2002, p. 155) and, as a consequence, the lack of operationalization of this concept itself, the lack of its translation into the language of quantitative indicators.

The article attempts to assess empirically the connections between the process of consumerization and various indicators of social development. This assessment is of theoretical interest because it allows making arguments in favor of one of the two models of consumer society discussed above. The practical interest, however, is that a reasoned choice between criticism and support for the expansion of consumerism can assist in rational planning for social development. In our research the indicators measuring it, as well as the process of consumerization itself, are considered at the macrosocial level, as characteristics of societies. In the modern world, societies can be equated somewhat conventionally, but not unreasonably, with nation-states, since the sovereignty of the latter makes each of them a kind of prolonged natural social experiment. Based on the material of such “experiments”, we will try to determine whether the degree of development in those same countries correlates with indicators of social development, expressed to a different degree in different countries, with the degree of development of the consumer society. To achieve this goal, we will first discuss how to measure all of the parameters to be compared, and then conduct a correlation analysis of the available data. Thus, the subject of the study undertaken is certain correlations between the statistical data available to researchers, namely the question of which of the models of the consumer society these correlations correspond better.

Measuring the degree of consumerization

The common denominator of the numerous definitions of “consumer society” found in the literature is the primary role of certain social practices, which, for example, Z. Bauman aptly summarized as follows: “The way in which today’s society “shapes” its members is dictated first and foremost by the obligation to play the role of the

consumer. The norm our society instills in its members is the ability and desire to play this role” (Bauman, 2004, p. 116). But if consumption becomes the basis for social identity, and inequality in it becomes the basis for social structure, then the process of this transformation cannot be one-sided; it must affect both individual behavior and the macrosystemic characteristics of societies, that is, the solvent demand (Goodwin et al., 2018) and the supply of goods, above all symbolically expressed (Campbell, 2021). Then some indicator of the consumerization of societies can be constructed as a combination of the average per capita consumer spending (reflecting individual demand, because purchasing decisions are always made by specific people) and the average per capita number of registered trademarks (reflecting the macro-social intensity of supply). Previous studies have shown empirically that the natural logarithm of the product of these two variables has a fairly high validity as an index of consumerization, namely, it acquires high values in the group of countries with a deliberately developed consumer society and low values in the group of countries with a deliberately undeveloped one, and also, in full accordance with theoretical predictions, positively and strongly correlates with the level of information society development, economic and cultural globalization (Babich, Batykov, 2022a) and secularization (Babich, Batykov, 2022b). Thus, we will use the index calculated according to the formula $IC = \ln(T \times S)$, where T is the number of active registered trademarks per capita, S is consumer spending per capita, IC is the consumerization index. The number of active trademarks in national states is known from the statistics of the World Intellectual Property Organization¹, and the population and average per capita consumer spending can be

obtained from the World Bank database². The most complete and up-to-date data on both indicators are available for 2017, so we will set the level of consumerization of societies at this point in time.

Since the formation of the consumer society is closely connected with economic development in general, we can suggest that it is the latter – expressed, for example, in the average per capita level of GDP – that is the real factor influencing the quality of social systems. For example, in economically developed countries, the quality of education may be higher not as a result of the expansion of mass consumption, but because the state can afford the higher costs of educational institutions. Then the observed correlations between the development of the consumer society and the characteristics of a “good” society would be false. To rule out this possibility, we will consider all correlations not only by themselves, but also adjusted for average per capita GDP (this indicator is also available in the World Bank database).

Measuring characteristics of a “good society”

In interpreting social development, we will not be bound by theoretical discussions of consumerism and propose to consider a “good” society as a free, enlightened society that ensures the equality, security and happiness of its constituent people. Such an interpretation has no firm theoretical foundation and takes a position close to “common sense” or, one might even say, “everyday reasoning”. In this case, however, the distinction between “first- and second-order constructs” (Schütz, 2003) is not so much ignored as the direct genetic connection between them is recognized. In other words, we accept the fact that in the eyes of any researcher a “good” society is that in which they themselves would like to live, and therefore the comparison criteria used should represent a reflexive subjectivity.

¹ WIPO IP Statistics Data Center. Available at: <https://www3.wipo.int/ipstats/index.htm> (accessed: May 4, 2022).

² DataBank. Available at: <https://databank.worldbank.org> (accessed: May 4, 2022).

Thus, we will assess social development as a movement toward a freer, more enlightened society that ensures the equality, security and happiness of its constituent people. All indicators that represent these characteristics must also be measured at the level of nation-states. Modern cross-country studies and international statistics provide us with a sufficiently rich arsenal of indicators to cover all selected areas of social development. Let us consider them in order.

We will assess the level of freedom in different countries of the world on the basis of Freedom House's "Freedom in the World" rankings³. It is a consensus of expert assessments based on regional studies, current news, government and nongovernmental organization reports, etc. Aspects of freedom analyzed include the electoral process, political pluralism and participation, the functioning of government, freedom of speech, the right to assemble and organize, the rule of law, personal autonomy, and individual rights. As an expert assessment, the Freedom House's freedom ranking can undoubtedly undergo subjective distortions arising both from political events and from the way information is perceived. However, it is not only the best-known indicator of its kind, but also the one most actively used in research. Therefore, while we should not overestimate the accuracy of countries' positions in the ranking, individual possible distortions do not devalue it as an indicator of freedom as a correlate of consumerization.

The most natural indicator of the level of enlightenment in a society is the extent to which education is widespread in it. But the heterogeneity of educational systems and, more importantly, the difference in their quality, make any comparative analysis very difficult. And if the first circumstance can still be overcome, for example, by bringing

³ Freedom in the World. Available at: <https://freedomhouse.org/report/freedom-world> (accessed: May 4, 2022).

the indicators of education to a single quantitative measure, such as the years spent on education, the second becomes a much more significant obstacle. It is clear that one year of education received by a person in Switzerland is not at all equivalent to the same year of education received in Afghanistan. In order to somehow eliminate these inconsistencies in cross-country comparisons, it is desirable to use an assessment of the overall quality of the education system, given by a single numerical scale. Such an assessment can be found in the World Economic Forum's Global Competitiveness Reports⁴. It is based on the results of a survey of 14,375 business leaders in 148 countries conducted from February to June 2017. All leaders answered the question, "How well does your country's educational system meet the needs of a competitive economy?" on a scale from 1 (not at all consistent) to 7 (fully consistent). Although this question has an economic rather than an educational focus, it cannot be overlooked that the most important pragmatic purpose of the education system is to meet the demand for a skilled workforce, so the opinion of employers can serve as a good indicator of the quality of education in general.

The next aspect of social development that interests us is the reduction of inequality. It can go in different directions, of which two seem to be universal and the most important: economic and gender. There are divisions between rich and poor and between men and women in all modern societies, and it is these divisions that affect most people in every country in one way or another. We will analyze economic inequality using an indicator proposed for this purpose by the United Nations Development Programme⁵. It is the ratio of the

⁴ Reports – World Economic Forum. Available at: <https://reports.weforum.org> (accessed: May 4, 2022).

⁵ United Nations Development Programme Human Development Reports. Income inequality, quintile ratio. Available at: <https://hdr.undp.org/en/indicators/135106> (accessed: May 4, 2022).

income of the richest 20% of each country to the income of the poorest 20%. The Gender Inequality Index, used by the same Development Programme⁶, takes into account differences in the status of men and women in terms of reproductive health, rights, and labor market.

By security of living in society we will understand first of all domestic, everyday security, the most obvious threat of which is usually criminal violence. We used the number of murders per 100,000 people as an indicator of security. It is most suitable for analysis for two reasons. First, it is probably the most reliable statistical indicator of crime, since murder is the hardest of all ordinary crimes to conceal or fabricate, hence there is the least chance for murder statistics to be understated or overstated. Second, it is the crime that directly and most strongly affects security. The homicide rate statistics were obtained from the UN Office on Drugs and Crime database⁷.

Finally, the last aspect of social development under consideration – happiness – is among the most difficult to define. We propose to consider it in two dimensions: attitudes and behavior. In the behavioral dimension, the level of happiness can be judged on the contrary, considering the suicide rate given by the World Health Organization as an inverse indicator⁸. Of course, this indicator, like any other, is not ideal, because it can be influenced by cultural features (for example, attitudes toward

suicide differ significantly in different religious traditions). Nevertheless, suicide seems to be not only a fairly obvious consequence of an unhappy life, but also an action that requires the utmost effort on the part of the actor, and if it is committed, it is evidence of a very strong motivation. It is, so to speak, a behavioral indicator par excellence. In terms of measuring attitudes, self-reports from residents of different countries are important to us. One of the most extensive collections of such self-reports can be obtained from the International Happiness Index database⁹. It represents country-averaged self-assessments of life satisfaction on a “ladder” scale, with the worst possible life on the bottom rung and the best possible life on the top rung. These self-assessments were collected in the Gallup World Poll.

Data analysis

The indicators discussed in the previous two sections are summarized in *Table 1*, which allows calculating the relationships we need. It presents 59 states, for which data are available for each series – the consumerization index, GDP per capita, level of freedom, quality of education, income inequality, gender inequality, homicide rate, suicide rate, and subjective well-being. All figures are as of 2017. Certainly, the sample of countries is not complete, but it is limited by the availability of relevant information. That is, this sample represents one of the best possible slices of the processes under study today. In addition, 59 observations are sufficient to obtain statistically significant correlation coefficients. Their magnitude (modulo) can be meaningfully interpreted as follows: less than 0.1 – insignificant relationship, in the range from 0.1 to 0.3 – weak, from 0.3 to 0.5 – medium, and over 0.5 – strong relationship (Cohen, 1988, pp. 79–80).

⁶ United Nations Development Programme Human Development Reports. Gender Inequality Index (GII). Available at: <https://hdr.undp.org/en/indicators/68606> (accessed: May 4, 2022).

⁷ United Nations Office on Drugs and Crime. Victims of intentional homicide, 1990–2018. Available at: <https://dataunodc.un.org/content/data/homicide/homicide-rate> (accessed: May 4, 2022).

⁸ World Health Organization. Global Health Observatory data repository. Suicide rate estimates, age-standardized. Estimates by country. Available at: <https://apps.who.int/gho/data/node.main.MHSUICIDEASDR> (accessed: May 4, 2022).

⁹ Happy Planet Index. Available at: <https://happyplanetindex.org/countries/> (accessed: May 4, 2022).

Table 1. Comparison of indicators of social development and consumerization

Country	Consumerization index ¹	GDP per capita (in constant dollars, 2010) ²	Level of freedom (Freedom House scale) ³	Quality of education (on a scale of 1 to 7) ⁴	Income inequality (ratio of income of the top 20% of the population to the bottom 20%) ⁵	Gender Inequality (Gender Inequality Index) ⁶	Homicide rate (per 100,000 population) ⁷	Suicide rate (per 100 thousand people) ⁸	Subjective well-being (on a scale of 0 to 10) ⁹
Australia	6.7	56 095.19	98	5.2	6.3	0.1	0.79	11.8	7.26
Austria	5.67	49 112.73	95	4.5	4.9	0.08	0.79	10.8	7.29
Argentina	4.92	10 404.26	82	3.3	8.8	0.33	5.21	8.7	6.04
Bangladesh	-1.83	1 127.27	47	3.5	4.8	0.54	2.22	3.7	4.31
Belarus	4.05	6 375.29	20	4.7	3.6	0.13	2.54	18.5	5.55
Bulgaria	3.68	8 350.66	80	3.3	7.3	0.21	1.45	6.7	5.1
Bosnia and Herzegovina	3.11	5 772.85	55	2.5	5.4	0.16	1.25	8.1	5.09
Brazil	3.55	11 021.72	79	2.6	18.1	0.43	30.83	6.2	6.33
United Kingdom	5.62	43 010.71	95	4.8	5.4	0.13	1.2	7.2	7.1
Hungary	3.82	15 809.77	76	2.9	4.9	0.24	2.49	12.6	6.07
Ghana	0.94	1 739.47	83	3.9	10.3	0.54	2.09	11.3	5.48
Guatemala	3.36	3 286.74	54	2.6	11.9	0.51	26.07	6	6.33
Germany	5.65	46 916.82	95	5.3	5.1	0.08	0.98	8.3	7.07
Denmark	6.04	62 733.02	97	5.1	4	0.04	1.24	8.3	7.59
Dominican Republic	4.16	7 273.35	68	2.7	10.5	0.46	11.57	6	5.61
Israel	5.7	34 243.01	80	4.7	8.5	0.11	1.49	5	7.33
India	0.29	1 986.63	77	4.5	5.5	0.53	3.12	12.5	4.05
Ireland	6	71 755.97	96	5.5	5	0.11	0.86	9.3	7.06
Iceland	8.47	51 045.94	97	5.3	4	0.07	0.9	11.7	7.48
Spain	5.71	32 282.9	94	3.8	7.3	0.08	0.66	5.8	6.23
Italy	5.1	35 086.48	89	3.8	7	0.08	0.61	4.8	6.2
Kazakhstan	2.52	10 867.74	22	3.7	3.8	0.19	5.06	21.2	5.88
Canada	6.15	51 170.48	99	5.2	6.2	0.1	1.8	11.7	7.41
Cyprus	6.77	30 650.24	94	4.1	5.3	0.09	0.59	3.3	6.06
China	3.45	7 346.61	15	4.3	7.1	0.17	0.56	6.9	5.1
Colombia	3.46	7 622.28	64	3.3	13.4	0.43	25.02	4.5	6.16
Costa Rica	5.58	9 775.85	91	4.6	12.3	0.31	12.18	5.8	7.23
Kyrgyzstan	0.42	1 072.49	37	3.1	3.8	0.38	4.14	9.2	5.63
Latvia	4.82	15 429.7	87	3.8	5.8	0.21	4.15	17.1	5.98
Lithuania	4.96	16 855.42	91	4	7.2	0.13	4.53	23.5	6.27
Mauritius	4.76	10 199.48	89	4.2	5.9	0.39	2.61	9.6	6.17
Malta	6.42	27 750.68	96	4.8	4.5	0.19	2.06	4.8	6.68
Morocco	1.82	3 305.42	41	2.8	7	0.46	2.14	7.3	5.31
Mexico	4.05	10 301.36	65	3	8.8	0.34	25.71	5.9	6.41
Mongolia	2.27	3 997.49	85	3	5.1	0.32	6.13	19.1	5.33

End of Table 1

Country	Consumerization index ¹	GDP per capita (in constant dollars, 2010) ²	Level of freedom (Freedom House scale) ³	Quality of education (on a scale of 1 to 7) ⁴	Income inequality (ratio of income of the top 20% of the population to the bottom 20%) ⁵	Gender Inequality (Gender Inequality Index) ⁶	Homicide rate (per 100,000 population) ⁷	Suicide rate (per 100 thousand people) ⁸	Subjective well-being (on a scale of 0 to 10) ⁹
Norway	7.42	91 549.04	100	5.4	4.1	0.05	0.53	10.4	7.58
Pakistan	-0.45	1 155.36	43	3.7	4.8	0.54	3.96	10	5.83
Panama	5.29	11 530.07	83	3.4	15.9	0.42	9.67	3.2	6.57
Peru	3.73	6 314.29	72	2.6	10.3	0.41	7.91	2.7	5.71
Poland	4.05	15 845.25	89	3.6	4.6	0.13	0.76	11.1	6.2
Portugal	5.73	23 380.69	97	4.3	6.4	0.09	0.74	7.9	5.71
Russian Federation	3.19	11 550.53	20	3.7	6.6	0.24	9.13	24.4	5.58
El Salvador	3.69	3 441.36	70	2.3	7	0.38	61.71	6.2	6.34
Serbia	2.93	6 560.32	76	3.2	4.2	0.15	1.06	0.3	5.12
Slovakia	4.52	19 829.82	89	2.9	4.1	0.19	1.47	9.6	6.37
USA	5.52	53 382.76	89	5.1	9.4	0.23	5.32	14.4	6.99
Thailand	2.91	6 135.47	32	3.7	6	0.43	2.58	7.5	5.94
Turkey	4.65	14 874.78	38	3.2	8.5	0.33	3.09	2.3	5.61
Ukraine	2.19	2 988.5	61	4	3.5	0.27	6.18	16.9	4.31
Uruguay	5.57	14 437.38	98	3	7.8	0.29	8.26	18.5	6.34
Finland	6.15	48 086.67	100	5.7	3.9	0.06	1.25	14.4	7.79
France	5.68	43 015.21	90	4.5	5.2	0.06	1.27	10.4	6.64
Croatia	4.1	15 350.44	87	3.1	5.3	0.13	1.1	10.9	5.34
Czech Republic	4.85	22 754.75	94	3.9	3.7	0.13	0.62	11.2	6.79
Switzerland	7.06	77 684.05	96	6.2	5.2	0.04	0.53	10.4	7.47
Sweden	5.84	57 467.25	100	4.7	4.6	0.04	1.14	12.5	7.29
Estonia	6.05	19 109.31	94	4.6	5.4	0.12	2.2	15.2	5.94
South Africa	3.33	7 476.39	78	2.3	28.4	0.41	35.7	25.8	4.51
Japan	5.99	48 510.61	96	4.4	5.4	0.1	0.24	13.5	5.91

¹ Source: compiled according to WIPO IP Statistics Data Center. Available at: <https://www3.wipo.int/ipstats/index.htm> (accessed: May 4, 2022); DataBank. Available at: <https://databank.worldbank.org> (accessed: May 4, 2022).

² Source: DataBank. Available at: <https://databank.worldbank.org> (accessed: May 4, 2022).

³ Source: Freedom in the World. Available at: <https://freedomhouse.org/report/freedom-world> (accessed: May 4, 2022).

⁴ Source: Reports – World Economic Forum. Available at: <https://reports.weforum.org> (accessed: May 4, 2022).

⁵ Source: United Nations Development Programme Human Development Reports. Income inequality, quintile ratio. Available at: <https://hdr.undp.org/en/indicators/135106> (accessed: May 4, 2022).

⁶ Source: United Nations Development Programme Human Development Reports. Gender Inequality Index (GII). Available at: <https://hdr.undp.org/en/indicators/68606> (accessed: May 4, 2022).

⁷ Source: United Nations Office on Drugs and Crime. Victims of intentional homicide, 1990–2018. Available at: <https://dataunodc.un.org/content/data/homicide/homicide-rate> (accessed: May 4, 2022).

⁸ Source: World Health Organization. Global Health Observatory data repository. Suicide rate estimates, age-standardized Estimates by country. Available at: <https://apps.who.int/gho/data/node.main.MHSUICIDEASDR> (accessed: May 4, 2022).

⁹ Source: Happy Planet Index. Available at: <https://happyplanetindex.org/countries/> (accessed: May 4, 2022).

Since almost all scales have a metric or pseudometric (representing the average of rating scores) level of measurement, it is logical to choose the well-known Pearson correlation coefficient, which allows revealing linear relationships between variables, as the main tool for discovering the relationships of interest to us. In addition, it is easy to calculate a partial correlation for the Pearson coefficient, which allows testing the hypothesis about the falsity of the statistical relationship between consumerization and social development. *Table 2* shows the results of the Pearson correlation coefficient calculations between the variables of interest.

The data in *Table 2* show that the consumerization index is quite expectedly strongly correlated with the level of GDP. However, the structure of the links of GDP and consumerization with indicators of social development is significantly different. The first indicator shows significant correlations with the level of freedom, quality of education, gender inequality, and subjective well-being, while the second correlates significantly

with all indicators of social development, except the suicide rate.

Obviously, correlation analysis does not allow establishing the direction of the relationship: it remains unknown whether better education leads to increased consumption or, on the contrary, the quality of education increases with the development of consumption. Nevertheless, it is clear that the expansion of consumer society can still be associated with positive social development rather than degradation. Societies with higher levels of consumerization have, on average, higher levels of freedom, quality of education and subjective well-being, and less gender inequality. However, the question remains: aren't these correlations simply due to the great wealth of the respective societies? To answer this question, let us consider the partial correlation coefficients (*Tab. 3, 4*).

Table 3 shows that consumerization is not really related to the quality of education, but countries with a more developed consumer society have, on average, higher levels of freedom and subjective well-being and lower levels of gender

Table 2. Matching Pearson correlation coefficients

	Consumerization index	GDP per capita	Freedom level	Quality of education	Income inequality	Gender inequality	Homicide rate	Suicide rate	Subjective well-being
Consumerization index	1.00	0.74**	0.65**	0.56**	-0.08	-0.74**	-0.18	-0.02	0.76**
GDP per capita	0.74**	1.00	0.59**	0.78**	-0.27*	-0.72**	-0.34**	0.02	0.76**
Freedom level	0.65**	0.59**	1.00	0.41**	-0.02	-0.47**	-0.15	-0.04	0.55**
Quality of education	0.56**	0.78**	0.41**	1.00	-0.42**	-0.61**	-0.51**	0.10	0.61**
Income inequality	-0.08	-0.27*	-0.02	-0.42**	1.00	0.47**	0.59**	0.01	-0.16
Gender inequality	-0.74**	-0.72**	-0.47**	-0.61**	0.47**	1.00	0.46**	-0.14	-0.54**
Homicide rate	-0.18	-0.34**	-0.15	-0.51**	0.59**	0.46**	1.00	0.00	-0.10
Suicide rate	-0.02	0.02	-0.04	0.10	0.01	-0.14	0.00	1.00	-0.10
Subjective well-being	0.76**	0.76**	0.55**	0.61**	-0.16	-0.54**	-0.10	-0.10	1.00

Note: Hereinafter, two asterisks denote values significant at the 0.01 level, one asterisk denotes values significant at the 0.05 level, other values are statistically insignificant.
Source: own compilation.

Table 3. Partial Pearson correlation coefficients when GDP per capita is excluded

	Consumerization index	Freedom level	Quality of education	Income inequality	Gender inequality	Homicide rate	Suicide rate	Subjective well-being
Consumerization index	1.00	0.39**	-0.05	0.19	-0.45**	0.12	-0.05	0.44**
Freedom level	0.39**	1.00	-0.11	0.18	-0.07	0.07	-0.07	0.18
Quality of education	-0.05	-0.11	1.00	-0.34**	-0.11	-0.42**	0.14	0.03
Income inequality	0.19	0.18	-0.34**	1.00	0.40**	0.55**	0.02	0.08
Gender inequality	-0.45**	-0.07	-0.11	0.40**	1.00	0.34*	-0.18	0.02
Homicide rate	0.12	0.07	-0.42**	0.55**	0.34*	1.00	0.00	0.26*
Suicide rate	-0.05	-0.07	0.14	0.02	-0.18	0.00	1.00	-0.18
Subjective well-being	0.44**	0.18	0.03	0.08	0.02	0.26*	-0.18	1.00

Source: own compilation.

Table 4. Partial Pearson correlation coefficients when the influence of the level of consumerization is excluded

	GDP per capita	Freedom level	Quality of education	Income inequality	Gender inequality	Homicide rate	Suicide rate	Subjective well-being
GDP per capita	1.00	0.22	0.66**	-0.32*	-0.38**	-0.32*	0.05	0.46**
Freedom level	0.22	1.00	0.07	0.04	0.03	-0.05	-0.04	0.11
Quality of education	0.66**	0.07	1.00	-0.45**	-0.36**	-0.50**	0.14	0.34**
Income inequality	-0.32*	0.04	-0.45**	1.00	0.61**	0.59**	0.01	-0.15
Gender inequality	-0.38**	0.03	-0.36**	0.61**	1.00	0.51**	-0.23	0.05
Homicide rate	-0.32*	-0.05	-0.50**	0.59**	0.51**	1.00	-0.01	0.05
Suicide rate	0.05	-0.04	0.14	0.01	-0.23	-0.01	1.00	-0.13
Subjective well-being	0.46**	0.11	0.34**	-0.15	0.05	0.05	-0.13	1.00

Source: own compilation.

inequality, even when adjusted for average per capita GDP. This last variable turns out to be generally more significant for the selected social development indicators, as it demonstrates correlations not only with subjective well-being and gender inequality, but also with quality of education and homicide rates (see Tab. 4). On the other hand, the connection of GDP with such an important indicator as the level of freedom disappears if we adjust for the degree of consumerization.

As we can see, the development of the consumer society can indeed be associated with positive social change, but change of a special nature, connected more with culture than with material wealth. Levels of freedom, gender inequality, and subjective well-being can be classified as “ideological”, “superstructural” aspects of social systems, while income inequality, murder rates, and quality of education (variables related to GDP but not to consumerization) are more like “basic” aspects.

Table 5. Profile of Russia relative to the average for the sample of countries

	Con- sume- rization index	GDP per capita (in constant 2010 dollars)	Level of freedom (Freedom House scale)	Quality of education (on a scale of 1 to 7)	Income inequal- ity (ratio of income of the top 20% of the population to the bottom 20%)	Gender inequality (Gender Inequality Index)	Homicide rate (per 100 thousand people)	Suicide rate (per 100 thousand people)	Subjective well-being (on a scale of 0 to 10)
Russian Federation	3.19	11 550.53	20	3.7	6.6	0.24	9.13	24.4	5.58
Average for a sample of countries	5.99	48 510.61	96	4.4	5.4	0.1	0.24	13.5	5.91

Source: data from Table 1, own compilation.

The connection between consumerization and social development can also be illustrated by private examples. Thus, if we consider the profile of the Russian Federation in comparison with the average values for the sample of states analyzed (*Tab. 5*), we see that our country is characterized by significantly less development of the consumer society and at the same time by a significantly worse situation with the level of GDP per capita, freedom, quality of education, inequality, violence, and suicide rates. Let us note that the comparison is made not with the world values, but only with 59 national states, which were included in the analysis, so the presented statistics cannot be considered pessimistic for Russia. But it clearly demonstrates the need to improve the indicators of social development of Russian society. And it would seem that the correlations revealed directly indicate the possibility of such improvement through consumption. In any case, prominent Russian economists consider consumer demand as an important factor, if not the basis, influencing economic growth (Aganbegyan, 2019; Grigor'ev et al., 2019; Ivanter, 2019). However, for example, Z. Bauman points out that increased consumption combined with inequality can be destructive to the social fabric (Bauman, Donskis, 2016, p. 43), and inequality in Russia turns out to

be relatively high. In addition, consumer society trends themselves may be subject to historical change, and new economic relations over time may simply supplant consumerism as a driver of development (Castells, Hlebig, 2017, p. 180). All of this demonstrates the need to be extremely cautious in drawing practical implications from the models of statistical relationships between developmental indicators that we have examined.

Conclusion

The analysis of the statistical relationships that can be established between the development of the consumer society and social development suggests that higher levels of consumerization are associated with higher levels of social development, at least on some indicators, such as levels of freedom, gender inequality, and subjective well-being. For none of the six social development indicators examined was there a link between the expansion of the consumer society and social degradation. Correlational analysis does not allow establishing the direction of causality, so we cannot say whether, for example, consumerization leads to greater freedom or greater freedom leads to consumerization. But the presence of statistically significant stable links with social development and the absence of any links with social degradation make it possible to draw a preliminary conclusion about the refutation of the

basic hypothesis of the criticism of consumerism and confirm the correctness of the proponents of the approach of gradual saturation of hierarchically organized needs. Moreover, the correlation of the development of the consumer society with cultural, ideological aspects such as freedom, gender equality and subjective well-being further confirms the validity of hierarchical models that predict the spiritual fulfillment of individuals and social communities after they have satisfied basic material needs.

Although the conclusions drawn are based on a fairly plausible statistical foundation, it is necessary to dwell separately on their preliminary nature. Of course, further research involves a more extensive chronological and methodological analysis, the inclusion of an extended period rather than a single year, and the identification of cause-and-effect relationships, not just correlational ones. However, this direction with a high probability will only confirm our conclusions on a more detailed material. The possibility of refuting them opens in another perspective

– the perspective of rethinking and complete replacement of the indicators used. Indeed, our analysis has confirmed the connection between consumer society and social development, based on data in a sense formatted by consumer society itself. For where else but there live the experts who make up the Freedom House's freedom ranking, and where else but from consumerized mass communication do Gallup World Poll respondents draw their ideas of happiness. So it is possible that the positive correlations of consumer society with freedom and subjective well-being are simply programmed into the models of perception of both. In this case, the connection between consumerization and social development is not as straightforward as it appears at first sight, and the hypothesis of the substitution of values and the closure of social development by consumerism may still be true. But in order to test it, we need to develop new, critically oriented quantitative indicators of social development. It is this direction that seems to us most promising for further studies of consumer society.

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Received July 4, 2022.

The Impact of Employment Barriers on the Employment Characteristics of Persons with Disabilities



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Abstract. Disability is a complex phenomenon that generates a number of negative socio-economic consequences including working-age population decrease. At the same time, disability is not always accompanied by a complete loss of the ability to work. Usually, persons with disabilities of the second and third groups retain the opportunity to work in the presence of suitable conditions, but in practice the realization of their labor potential is limited by a number of circumstances. The purpose of this work is to substantiate the negative impact of barriers to employment of disabled people on the characteristics of their employment. Based on the statistical data analysis, we have shown a modern socio-demographic portrait of working disabled people, and analyzed the characteristics of their employment and economic activity. We have found that for a long period the highest economic activity was shown by persons with the third disability group. The paper proves that their higher representation in the composition of employed persons with disabilities is due, on the one hand, to less pronounced health disorders and relatively low need to create specialized jobs, and on the other hand, has economic prerequisites. We have shown that the realization of the labor potential of disabled people is not always accompanied by a significant increase in their material well-being. Employment for some disabled people may be a forced step, which confirms the prevalence among them of employment not in their specialty, as well as on the basis of an oral agreement, without official employment. The final part of the article outlines recommendations that can contribute to the fuller realization of the labor potential of disabled people and improve their financial situation.

Key words: disability, work activity of disabled people, assistance in employment of disabled people, specialized workplaces, quotas of jobs for disabled people, gender and age structure of the contingent of employed disabled people.

For citation: Natsun L.N. (2022). The impact of employment barriers on the employment characteristics of persons with disabilities. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 203–220. DOI: 10.15838/esc.2022.5.83.11

Introduction

The World Health Organization estimates that 15% of the world's population has some form of disability. Overall, there are more than 1 billion people with disabilities in the world¹. Experts predict an increase in the scale of this acute problem due to demographic aging. In developed countries, chronic non-communicable diseases that accompany aging become the leading causes of disability and significantly reduce the quality of life². The works of Russian and foreign authors have repeatedly demonstrated the relationship between the subjective assessments of health expressed by respondents and their socio-demographic characteristics (Maksimova, Lushkina, 2014; Pautova, Pautov, 2015; Fylkesnes, Førde, 1992; Idler, 1993). The Russian Federation is characterized by a significant decrease in self-assessments and objective health indicators of the population in the transition to older age groups (Denisova et al., 2018; Kaneva, 2016). It is this contingent of the population that constitutes the main risk group for the onset of disability.

In Russian conditions, the importance of the issues of preserving public health is closely related not only to the need to maintain its reproduction, but also to solving the problem of providing the economy with labor resources. Given the irreversibility of the demographic aging process and the inertia of behavioral practices of the population in the field of health care, we can assume that the issue of disability will not lose relevance in the next 10 years³. In this regard, it is important to analyze the labor potential possessed by persons with disabilities, as well as the socio-demographic portrait of working disabled people.

¹ Disability. World Health Organization. Available at: https://www.who.int/health-topics/disability#tab=tab_1 (accessed: June 29, 2022).

² Disability and health. World Health Organization. Available at: <http://www.who.int/mediacentre/factsheets/fs352/ru/> (accessed: May 2, 2022).

³ Vasin S.A. (2007). Light burden of disability. *Demoscope Weekly*, 283–284. Available at: <http://www.demoscope.ru/weekly/2007/0283/analit07.php> (accessed: April 23, 2020).

In developed countries, the involvement of disabled people in work is in the focus of social policy. In practice, several different approaches are used to promote their employment, corresponding to the chosen concept of social policy. The “supported employment” schemes demonstrate the greatest effectiveness, which involve the search for suitable jobs for applicants with disabilities in the free labor market while simultaneously implementing a number of measures that increase their competitiveness (Natsun, 2017). In addition to these support mechanisms, new employment opportunities for disabled people are associated with the development of flexible employment forms. However, such practices by themselves do not demonstrate the expected positive effect of employment growth among disabled people and should to be improved. For instance, the Italian experience shows that the state programs “flexicurity” (“flexible guarantees of security in the labor market”) are an attempt to take into account both the employers’ interest in a flexible workforce, and the workers’ need for security – confidence that they will not face long-term unemployment. But these programs, being focused mainly on employment assistance, do not provide guarantees of employees’ protection from subsequent dismissal (Agovino, Rapposelli, 2016a; Agovino, Rapposelli, 2016b). In practice, we recorded the negative impact of active policy of promoting the employment of people with disabilities on their employment indicators. The main reason for this paradox is that employers consider the employment of a person with disabilities economically unprofitable: the costs they carry out are not recouped by the tax benefits provided by the state (Agovino, Parodi, 2014).

The image of people with disabilities in society is formed on the basis of a number of stereotypes that prevent changes in the unfavorable situation in the field of protection of their rights and interests (Tarasenko, 2004) including in the labor market

(Olkhina et al., 2019). When finding employment, people with disabilities face many barriers including those associated with a negative attitude on the part of employers and psychological unwillingness to protect their interests (Smoleva, 2018). The lack of opportunities for people with disabilities to freely realize their own labor potential makes them dependent on social benefits consolidating vulnerable position in society. However, the fact of employment in itself does not mean the elimination of problems of social discrimination and social exclusion of people with disabilities. If these problems disappeared immediately after a disabled person got a job, then such phenomena as the deformity of the niche that disabled people occupy in the labor market and the very structure of their employment by type of economic activity⁴, the discrepancy between the education, qualifications of working disabled people and the requirements of the jobs they occupy would not be registered. These phenomena indirectly indicate the existence of significant obstacles to improving the financial situation of people with disabilities through the promotion of their employment⁵. The problems

of overcoming discrimination against people with disabilities in the sphere of realizing their labor potential are not limited to the stage of finding a suitable job, but extend as a whole to the entire system of their social support.

Materials and methods of research

The information base of the research consists of the results of statistical including sample, observations on socio-demographic problems conducted by Rosstat, as well as data posted on the information portal of the Federal State Information System “Federal Register of Persons with Disabilities”.

The scientific problem of our research is to identify factors that reduce the effectiveness of employment as a tool for improving the material well-being of people with disabilities who are ready and willing to work. The research hypothesis is that with the observed employment characteristics of people with disabilities, employment does not make a significant contribution to improving their material well-being. The purpose of the work is to substantiate the negative impact of employment barriers on the employment characteristics of people with disabilities. Within the research framework, we have solved the following tasks: analysis of the socio-demographic portrait of employed people with disabilities, the employment effectiveness of people with disabilities, their employment characteristics, the contribution of labor income to the total monetary income of people with disabilities, as well as the formulation of recommendations to promote employment of people with disabilities.

To identify the current situation on the basis of statistics, we have made an assessment of the degree of inclusion of people with disabilities in work, and analyzed the employment features of people with disabilities in Russia, socio-demographic determinants of the employment and its impact on the material and social status of people with

⁴ Structure of the employed population with disabilities by type of economic activity in the main job. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/l6rFTHYB/tab4-10.html> (accessed: April 20, 2022); Kolybashkina N., Sukhova A., Ustinova M., Dem'yanova A., Shubina D. (2021). *Analysis of Barriers and Opportunities for the Participation of People with Disabilities in the Labor Market in the Russian Federation*. World Bank. Available at: <https://documents1.worldbank.org/curated/en/099335011302129130/pdf/P175164082c1900f10b0d300c9326d7e3c8.pdf> (accessed: July 10, 2022).

⁵ The presence of a specialty and its compliance with the work performed by disabled people aged 15 years or more. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/tab4-17.html> (accessed: April 20, 2022); Kolybashkina N., Sukhova A., Ustinova M., Dem'yanova A., Shubina D. (2021). *Analysis of Barriers and Opportunities for the Participation of People with Disabilities in the Labor Market in the Russian Federation*. World Bank. Available at: <https://documents1.worldbank.org/curated/en/099335011302129130/pdf/P175164082c1900f10b0d300c9326d7e3c8.pdf> (accessed: July 10, 2022).

disabilities. Taking into account the research results and the secondary analysis of literary sources, we have justified the necessity of applying an individual approach to the employment of persons with disabilities.

Research results

People with disabilities as a socio-demographic group: population dynamics, gender and age structure of the contingent

The total number of people with disabilities in the period from 2000 to 2021 exceeded 10 million people. The maximum value of the indicator was registered as of January 1, 2011 – 13.2 million people, the minimum – in 2000 – 10.5 million people. The value of this indicator grew in the period from 2000 to 2011; then there was a continuous downward trend. The dynamics of the indicator of primary disability is somewhat at odds with the dynamics of general disability. First of all, this indicator is characterized by more pronounced fluctuations in values: a distinct peak occurs in 2006. According to the research of Russian authors, in addition to changes in disability criteria, the main legislative changes that influenced primary disability were the expansion of the concept of “disability” itself (in 1996), the introduction (in 2005) and the subsequent abolition (in 2010) of linking the right to a disability pension to the degree of limited ability to work, “benefits monetization” (in 2005), abolition of the right to indefinite disability for persons of retirement age (in 2006) (Vasin, 2017; Demyanova, 2015; Kulagina, 2016). In contrast to the general indicator of the number of people with disabilities, after 2006, the number of people recognized as disabled for the first time has been continuously decreasing. Every year, the primary access of the population to disability ensured the replenishment of the total contingent of people with disabilities by 0.5–1.8 million people, which was from 5 to 14% of the total number of people with disabilities. The

largest proportion of those recognized as disabled for the first time among their total contingent was recorded in 2006, and since 2016 it has not exceeded 5% (Fig. 1), which is determined by two points. First, a relatively high level of general disability remains against the background of a reduction in primary disability. Second, it is the specifics of the procedure of statistical accounting of disability. Cases of primary disability are registered on the basis of data on the population’s appeal to disability medical exam institutions for primary or repeated disability, which leads to an under-accounting of its cases – the formation of latent disability⁶. Since this problem can greatly affect the prediction of the dynamics of population health indicators, methodological approaches to identifying the level of “latent” disability using data from representative sociological studies are discussed⁷ (Natsun, 2021).

The structure of the contingent of people with disabilities is shifted toward older age groups. In 2020, among people with disabilities aged 15–72, the proportion of people aged 60–72 was 65.1 %⁸. We should note that it was the elderly population who reacted the most to changes in the state policy in the field of establishing disability criteria and the amount of social benefits. For instance, during the period of a sharp rise in primary disability in 2005–2006, the greatest contribution to the formation of the upward dynamics was made by applications for disability from persons of retirement age, which is confirmed by data on primary disability among the working-age population: there was no sharp peak

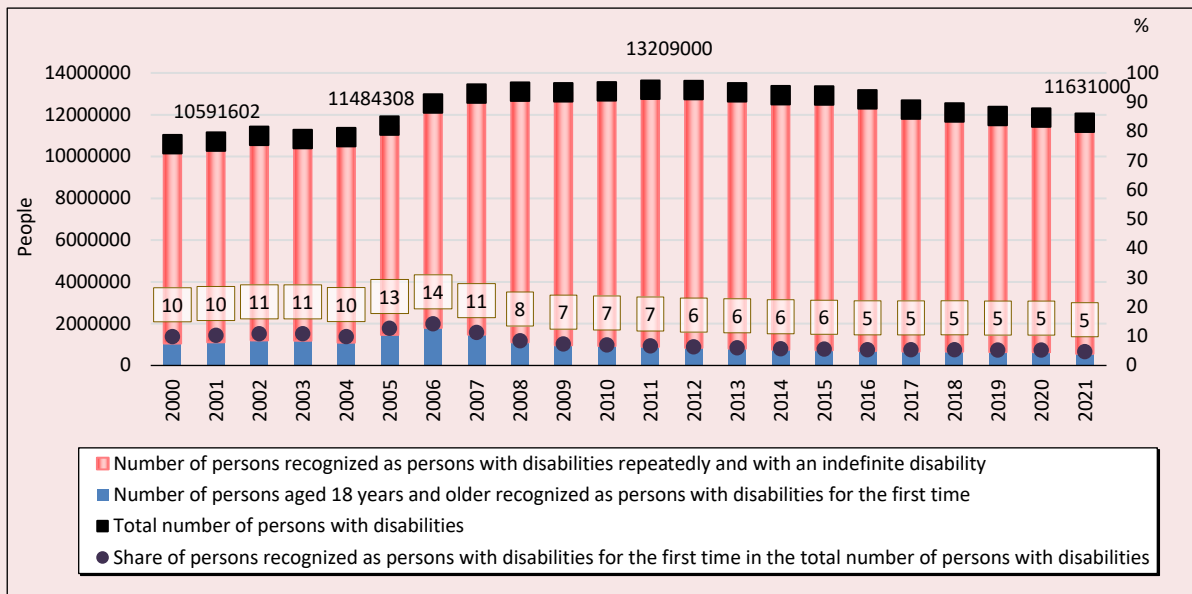
⁶ Vasin S.A. (2007). Light burden of disability. *Demoscope Weekly*, 283–284. Available at: <http://www.demoscope.ru/weekly/2007/0283/analit07.php> (accessed: April 23, 2020).

⁷ Makarentseva A.O., Vasin S.A., Khasanova R.R. (2016). How to estimate the number of disabled people in Russia. *Demoscope Weekly*, 695–696. Available at: <http://demoscope.ru/weekly/2016/0695/tema01.php>

⁸ Structure of persons with disabilities by labor force participation status and age groups. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/Axpg9ymi/tab4-8.html> (accessed: April 20, 2022).

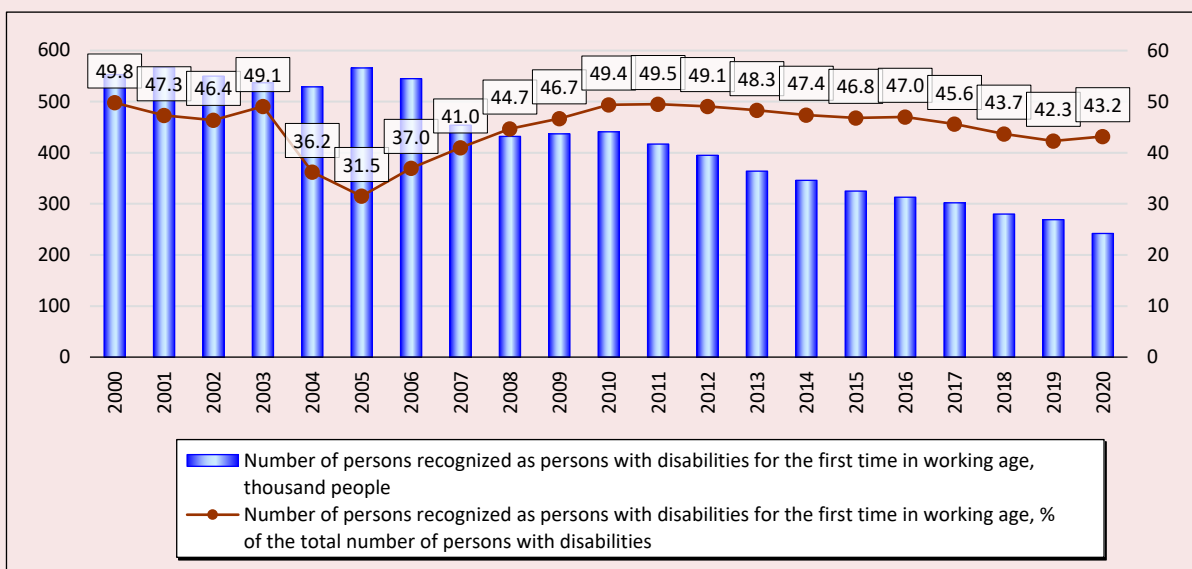
in this category during the same period. Moreover, after the abolition of the right to establish indefinite disability for persons of retirement age since 2006, the share of people with disabilities of working age in the contingent of people with disabilities began growing again (Fig. 2).

Figure 1. Dynamics of general, recurrent and primary disability of Russia's adult population



Source: Situation of persons with disabilities. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/folder/13964> (accessed: April 20, 2022).

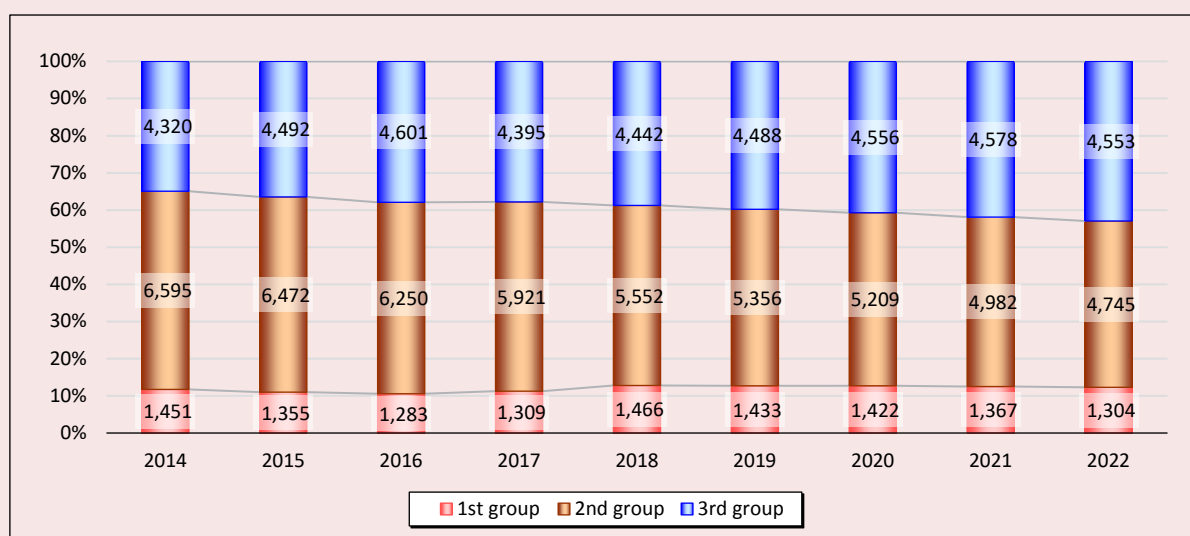
Figure 2. Dynamics of primary disability of working age adults in 2000–2020



Note: data are given taking into account changes in the limits of the retirement age for men and women.

Source: Number of persons aged 18 and older who were recognized as people with disabilities for the first time. Healthcare in Russia. Available at: <https://rosstat.gov.ru/folder/210/document/13218> (accessed: April 20, 2022).

Figure 3. Distribution of persons with disabilities aged 18 years and older by disability groups, thousand people



Source: Total number of persons with disabilities by disability groups in Russia's entities. Federal State Statistics Service. Available at: https://rosstat.gov.ru/storage/mediabank/pi_1.3.xlsx (accessed: April 20, 2022).

As of January 1, 2022, more than 10 million adults with disabilities lived in Russia. In the period 2000–2022, population with disabilities was numerically dominated by persons with the second disability group, whose share gradually decreased (from 51 to 42%) against the background of an increase in the proportion of persons with the third disability group (from 33 to 40%) and the relatively stable proportion of persons with the first disability group (11.0% in 2017 and 11.5% in 2022; Fig. 3).

Socio-demographic portrait of employed persons with disabilities

In Russia, as of January 1, 2022, the number of employed persons with disabilities of working age amounted to 1.1 million people, among them women accounted for 44%, men – 56%⁹. The employment rate among women with disabilities

⁹ Information on the number of disabled persons with disabilities including those who worked, by Russia's entities. Federal Register of Persons with Disabilities. Available at: <https://sfri.ru/analitika/zanyatost/svedeniya-o-chislennosti-rabotayushchih-invalidov> (accessed: April 22, 2022).

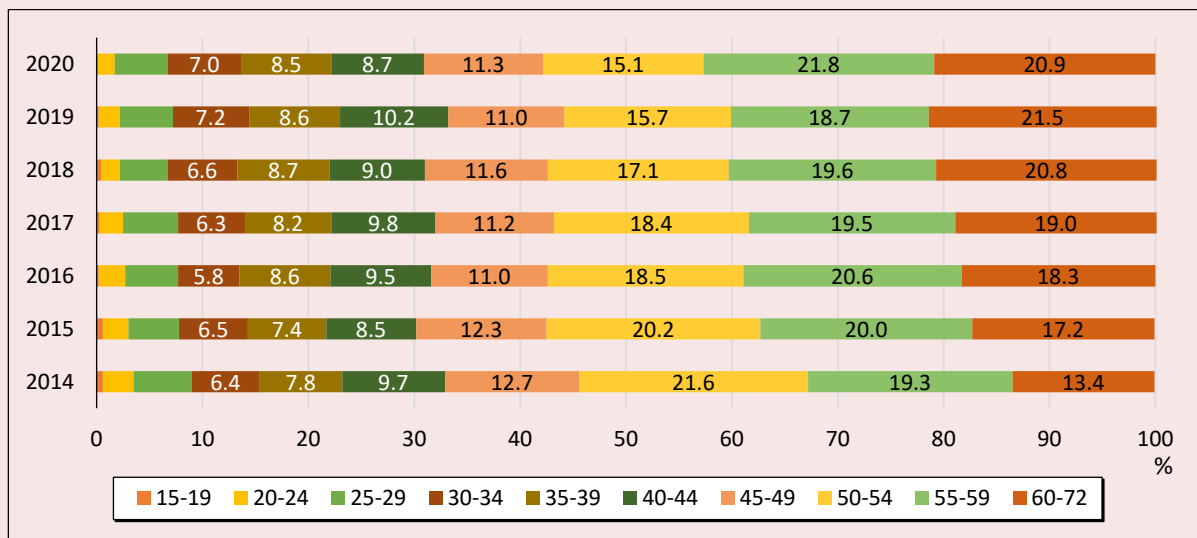
aged 15–72 years was lower than among men during the entire period 2014–2020¹⁰.

In the structure of employed persons with disabilities, the largest share fell on older age groups: 50–54 years is 15.1%, 55–59 years – 21.8%, 60–69 years – 16.9%. This pattern was typical for the group of employees under consideration throughout the entire period 2014–2020, for which there are available statistical data (Fig. 4).

Among the working persons with disabilities, the largest share is made up of persons with the third disability group. This is due to a number of circumstances, primarily objectively a better state of health (in comparison with persons of the first and second disability groups) because the third disability group is established in the case of the least severe disorders and the least pronounced limitations of functioning. On the part of employers, hiring

¹⁰ Note: until 2016 (inclusive), persons with disabilities aged 15 to 72 years were taken into account, since 2017 – at the age of 15 years and older.

Figure 4. Structure of employed persons aged 15 years and older with disabilities by age group, %



Note: until 2016 (inclusive), persons with disabilities aged 15 to 72 years were taken into account, since 2017 – at the age of 15 years and older.

Source: Structure of persons with disabilities by the participation status in the workforce and age groups. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/Axpg9ymi/tab4-8.html> (accessed: April 22, 2022).

persons with the third disability group is the least burdensome, since it is usually not required to create specially equipped workplaces for them. Also, persons with the third disability group have a greater economic interest in having a labor source of income, since the average size of disability pensions for them is lower than for persons with the first and second disability groups.

Employment is also influenced by the leading disability type. According to Rosstat sample observation, in 2021, among persons with disabilities aged 18 to 52 (57)¹¹, a relatively high employment rate was observed in persons of the second and third disability groups whose disability was associated with walking (46.4% — among persons with the third disability group, 12% — among persons with the second disability group)

¹¹ The upper limit is the pre-retirement age limit for women and men established as of 2021.

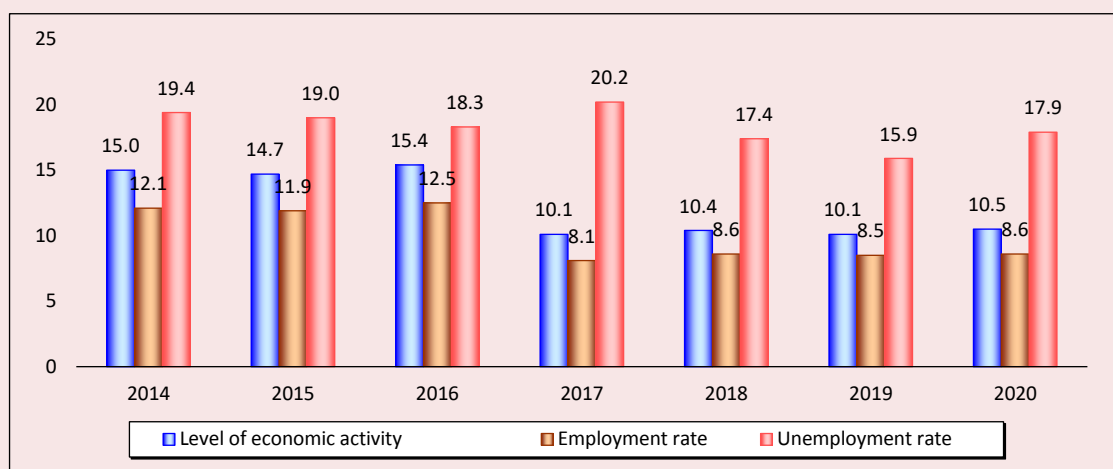
or vision (44.4% — among persons with the third disability group, 15% — of the second group)¹².

Employment barriers and employment features of persons with disabilities in Russia

Persons with the third disability group, which allows them to work, make up a significant share in the structure of the contingent of adults with disabilities. However, the involvement of persons with disabilities in work remains low. For example, the employment rate among persons with disabilities in 2014–2020 remained low (from 8 to 12.5% in different years of observation), while the unemployment rate was 1.5–2 times higher than

¹² The shares are indicated in % of the number of all persons with disabilities of this age group who have this type of disability and disability group. Source: microdata of Selective monitoring of the quality and accessibility of services in the fields of education, health and social services, employment promotion, 2021. Federal State Statistics Service. Available at: https://gks.ru/free_doc/new_site/GKS_KDU_2021/index.html (accessed: May 22, 2022).

Figure 5. Rate of economic activity, employment and unemployment of persons with disabilities



Note: until 2016, persons aged 15–72 years were taken into account, since 2017 – persons aged 15 years and older.

Source: Participation rate in the labor force, employment and unemployment rate of persons with disabilities. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/Ld0jHXOX/tab4-6.html> (accessed: April 21, 2022).

the employment rate. In 2020, the employment rate was 8.6% (Fig. 5). These circumstances indicate that persons with disabilities underutilize their own labor potential due to limiting circumstances. Identifying these obstacles and overcoming them is a necessary condition for achieving a higher income rate for persons with disabilities and solving the issue of social integration.

According to the Federal Register of Persons with Disabilities, regionally, the highest employment rates of people with disabilities of working age were registered in Saint Petersburg (35%), the Belgorod Oblast (34%), and the Kursk Oblast (33%). The lowest employment rate of persons with disabilities of working age was noted in the republics of Tyva, Khakassia, Buryatia, the Jewish Autonomous Oblast, Astrakhan and Ivanovo oblasts¹³.

Saint Petersburg's leadership in addressing issues of promoting the employment of persons with

disabilities is to a certain extent ensured by the implementation of original developments in this area including its own approach to the use of job quotas for persons with disabilities. Among the unique solutions are the legally established possibilities for employers to conclude agreements on the organization of workplaces for the employment of people with disabilities to quota jobs in another organization, on the referral of specialists with disabilities to temporary positions in other organizations, on the employment of specialists with disabilities by private agencies, on the creation of joint jobs with other employers based on the established quota¹⁴. In Saint Petersburg, employers are provided with subsidies to create jobs for persons with disabilities, the amounts of which are among the highest in the country¹⁵.

¹³ Employment of persons with disabilities of working age in the context of the Russian Federation entities. Federal Register of Persons with Disabilities.. Available at: <https://sfri.ru/analitika/zanyatost/zanyatost/zanyatost-v-razreze-sub-ektov> (accessed: August 21, 2022).

¹⁴ Kolybashkina N., Sukhova A., Ustinova M., Dem'yanova A., Shubina D. (2021). *Analysis of Barriers and Opportunities for the Participation of People with Disabilities in the Labor Market in the Russian Federation*. World Bank. Available at: <https://documents1.worldbank.org/curated/en/0993335011302129130/pdf/P175164082c1900f10b0d300c9326d7e3c8.pdf> (accessed: May 10, 2022).

¹⁵ Ibidem. P. 49.

In general, quotas and the creation of special jobs remain key mechanisms to support employment among persons with disabilities. At the same time, in 2020, only 6.2% of persons with disabilities who found a job after applying to the employment service were employed thanks to the quota mechanism. At the same time, the employment rates of persons with disabilities through services have been declining for a long period – from 2008 to 2020¹⁶. The number of employed decreased by 29%¹⁷ including for quota places for the same period – by 56%¹⁸. The share of persons with disabilities who have found a job from among those who applied to the employment service also decreased – by 4 percentage points by 2020 compared to 2008. These processes were observed against the background of a decrease in the number of persons with disabilities who applied for employment assistance to the employment service by 37% in 2008–2020. The reasons for the current trends may be a drop in the confidence of persons with disabilities in state employment promotion systems, a decrease in interest in employment, a reduction in the effectiveness of the work of the employment service bodies in terms of promoting the employment of persons with disabilities including for quota jobs.

An objective prerequisite for reducing these indicators could also be an increase in the number of persons with disabilities in need of special working conditions. However, in the period 2013–2017, for which relevant data are available, the

number of such persons with disabilities¹⁹ did not increase, but, on the contrary, decreased by 48%. The ratio of the number of persons with disabilities in need of special and ordinary working conditions has also changed insignificantly over the specified period: in 2013, 42% of the examined persons with disabilities needed special working conditions; in 2017 their share was 41% (*Tab. 1*).

According to the 2017 data, the majority of persons with the third disability group aged 18 years and older (99.7%) were recommended employment under normal conditions. Such a high level of the indicator remained throughout the entire period of 2013–2017. Among persons with disabilities of the same age of the first and second groups, on the contrary, during the entire observation period, the majority were those who were recommended employment in specially created conditions (see *Tab. 1*).

The fact that barriers continue operating in the Russian labor market in relation to people with disabilities is evidenced by the large average duration of the period of their job search in comparison with the general population. The average value in 2021 was 8 months, and among the general population – 6.3 months. The most common reason for the refusal of persons with disabilities from offered vacancies in 2020–2021 was low wages (30% of refusals). Applicants with disabilities were somewhat more likely, compared with the general population, to refuse the offered workplace due to working conditions (26 and 25%, respectively) and the remoteness of the workplace from home (25 and 24%, respectively). At the same time, persons with disabilities were less likely, relative to the general population, to refuse a vacant position if they were

¹⁶ Number of citizens belonging to the category of persons with disabilities who have applied for assistance in finding a suitable job to the employment service bodies. Available at: <https://rosstat.gov.ru/storage/mediabank/grevYvAr/4-2.doc> (accessed: April 21, 2022).

¹⁷ Number of citizens belonging to the category of persons with disabilities who have applied for assistance in finding a suitable job to the employment service bodies. Available at: <https://rosstat.gov.ru/storage/mediabank/grevYvAr/4-2.doc> (accessed: April 21, 2022).

¹⁸ Employment of citizens by the employment service of the population for quota jobs. Available at: <https://rosstat.gov.ru/storage/mediabank/63moFLyE/4-3.doc> (accessed: April 21, 2022).

¹⁹ Number of persons with disabilities aged 18 years and older who need employment in specially created working conditions and at home, according to recommendations for the rehabilitation of citizens recognized as persons with disabilities except victims of industrial accidents and occupational diseases. Federal State Statistics Service. Available at: https://gks.ru/free_doc/new_site/population/invalid/tab2-6.htm (accessed: April 21, 2022).

Table 1. Number of persons with disabilities who are recommended employment in normal and special working conditions according to the survey results

Indicators	2013	2014	2015	2016	2017	Increase, 2017 to 2013, %
All persons with disabilities who have passed the examination, people	1,342,151	1,102,388	835,947	730,049	712,518	-47
Among them, employment is recommended:						
In normal terms, people	775,093	629,562	587,144	431,757	418,699	-46.0
<i>in % of the total number</i>	57.8	57.1	70.2	59.1	58.8	-
Among them are:						
Persons with the 1st disability group	51	43	55	68	91	78.4
Persons with the 2nd disability group	10,459	6,537	7,183	6,648	6,429	-38.5
Persons with the 3rd disability group	764,583	622,982	579,906	425,041	412,179	-46.1
In special terms, people	567,058	472,826	248,803	298,292	293,819	-48.2
<i>in % of the total number</i>	42.2	42.9	29.8	40.9	41.2	-
Among them are:						
Persons with the 1st disability group	6,720	7,322	3,680	4,161	5,042	-25.0
Persons with the 2nd disability group	557,148	463,879	243,393	292,865	287,720	-48.4
Persons with the 3rd disability group	3,190	1,625	1,730	1,266	1,057	-66.9
Source: Number of persons with disabilities aged 18 years and older who need employment in specially created working conditions and at home, according to recommendations for the rehabilitation of citizens recognized as persons with disabilities except victims of industrial accidents and occupational diseases. Federal State Statistics Service. Available at: https://gks.ru/free_doc/new_site/population/invalid/tab2-6.htm (accessed: April 21, 2022); Number of persons with disabilities aged 18 years and older who need employment in normal production conditions with the provision of appropriate working conditions, according to recommendations for the rehabilitation of citizens recognized as persons with disabilities except victims of industrial accidents and occupational diseases. Federal State Statistics Service. Available at: https://gks.ru/free_doc/new_site/population/invalid/tab2-5.htm (accessed: April 21, 2022).						

not satisfied with the nature of the work (22 and 31%, respectively) or it did not correspond to their specialty (12 and 17%, respectively).

The availability of higher professional education increases the chances of persons with disabilities to find a suitable job. As of 2020, the proportion of those with higher education was noticeably higher among the employed persons with disabilities (22%) than among jobless (16%) and unemployed (12%)²⁰. At the same time, employment of persons with disabilities outside of their specialty remains a common problem; 46% of people with disabilities who have a specialty confirmed by a diploma of education in 2020 did not work in their

specialty, and in rural areas the proportion is even higher – 47%. For comparison: among the working population with vocational training, 33% did not work in their specialty²¹.

It is necessary to focus separately on how the employment relationship between the employer and employees with disabilities is formed. Throughout the entire period for which statistics are available, the predominant type of registration of labor relations was an indefinite employment contract (84% in 2020). However, the share of those who did not enter into any formal agreements with the employer, limited only to an oral agreement, remained stable (9% in 2020; *Tab. 2*). This practice

²⁰ Structure of persons with disabilities by participation status in the workforce and education level (according to a sample population survey on employment problems, in percentage). Situation of persons with disabilities. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/GVyDuj5t/tab4-13.html> (accessed: April 26, 2022).

²¹ Presence of a specialty and its compliance with the work performed by persons with disabilities aged 15 years or more (according to the Comprehensive Monitoring of the living conditions, in percentage) Situation of persons with disabilities. Federal State Statistics Service. Available at: <https://rosstat.gov.ru/storage/mediabank/tab4-17.html> (accessed: April 26, 2022).

Table 2. Structure of employed persons with disabilities aged 15 years and older, employed, by type of employment contract, % of the number of the employed

Contract type	2014	2015	2016	2017	2018	2019	2020
Based on permanent employment contract	83.6	84.6	84.6	85.6	85.4	84.4	84.1
Based on fixed-term employment contract	4.1	4.5	5.4	2.7	3.6	4.2	4.4
Based on employment contact for work at home (home-based worker)	0.1	0.2	0.1	0.0	0.2	0.2	0.2
Based on civil law contact	1.3	1.3	1.3	1.1	1.2	1.9	2.3
Based on oral agreement with no paperwork	10.7	9.2	8.6	10.5	9.6	9.3	9.0

Note: until 2016 (inclusive), disabled people aged 15 to 72 years were taken into account, since 2017 – at the age of 15 years and older.
Source: Structure of employed persons aged 15 years and older, employed and with disabilities, by type of employment contract. Available at: <https://rosstat.gov.ru/storage/mediabank/25IMRkgb/tab4-11.html> (accessed: April 22, 2022).

creates risks primarily for employees, since in the absence of official registration of labor relations; they lose part of the privileges in terms of the regime and labor intensity. The same applies to the creation of comfortable jobs.

On the one hand, the informal employment of persons with disabilities is a response to the need for employers to comply with strict rules when hiring persons with disabilities, and on the other hand, allows them to act more flexibly responding to the current economic situation and changes in their own financial situation. At the same time, various employment forms can also perform such a positive function, providing for greater flexibility regarding the terms of labor relations and choosing the localization of the workplace: home work, remote work, work under civil law contracts and fixed-term employment contracts. However, these methods of registration of labor relations are weaker than an oral agreement (see Tab. 2).

Employment contribution to improving the material well-being of persons with disabilities

In general, for the absolute majority of persons with disabilities (10.31 million people or 87% of the total number) in 2020, material well-being was mainly determined by the amount of state disability pensions, which grew in the period 2014–2022. However, the ratio of the disability pension and the pensioner's minimum wage was low, which indicates that persons with disabilities

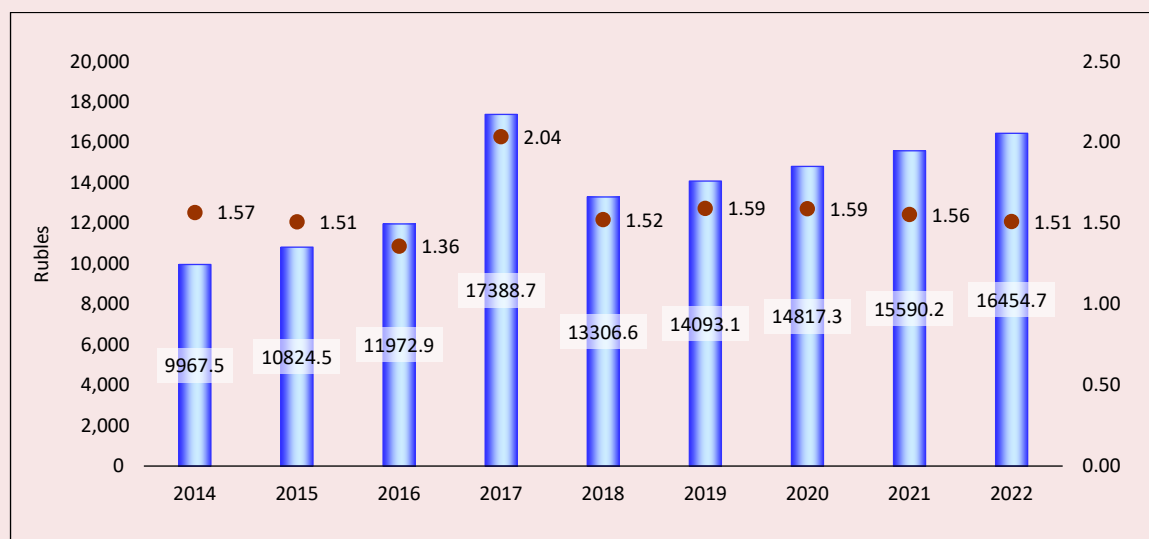
in Russia are guaranteed only a minimum standard of consumption that can provide only survival conditions, but is not a tool for the development and realization of human potential (Fig. 6).

It is worth noting that the amount of pension payments is tied to the disability group, for persons with the third disability group, it is the lowest. When comparing the size of disability pensions with the minimum wage level of pensioners, it becomes obvious that it is for persons with the third disability group (especially for the persons with disabilities since childhood) that the issues of increasing the income rate are most relevant (Tab. 3).

According to the sociological survey conducted in 2018 among persons with disabilities living in the Vologda Oblast²², the contribution of wages of working persons with disabilities to the total household income ranged from 9 to 67%. Moreover, the average wage of working persons with disabilities was 10,875 rubles, and its contribution to household income was 24%. In general, wages made a significant contribution to the incomes of households of persons with disabilities when their value exceeded 20,000 rubles. However, this or a higher wage level was observed only in 10% of working persons with disabilities (Tab. 4).

²² The survey was conducted in Vologda, Cherepovets, Sokol and Veliky Ustyug among persons with disabilities aged 18 and older. The sample size is 139 people; 41 people of them have a job. Sampling error is no more than 5%.

Figure 6. Ratio of the average size of disability pensions to minimum wage



Source: Average size of the assigned pensions of persons with disabilities registered in the Pension Fund of the Russian Federation. Available at: https://rosstat.gov.ru/storage/mediabank/pi_3.1.doc (accessed: April 26, 2022); Amount of the minimum wage for the purpose of establishing social supplement to pension in the Russian Federation. Available at: <https://rosstat.gov.ru/storage/mediabank/2.8.docx> (accessed: April 26, 2022).

Table 3. Ratio of disability pensions and minimum wage

Indicator	2014	2015	2016	2017	2018	2019	2020	2021	2022
Amount of minimum wage in order to establish a social supplement to a pension in the Russian Federation, rubles	6,354	7,161	8,803	8,540	8,726	8,846	9,311	10,022	10,882
Amount of pension payments, rubles:									
Persons with the 1st disability group	12787.4	13907.4	15315.4	20893.8	17310.6	17977.5	18909	19940.3	21054
<i>Relation to minimum wage value</i>	2.01	1.94	1.74	2.45	1.98	2.03	2.03	1.99	1.93
Persons with the 2nd disability group	10379.4	11266.6	12479.3	17861.6	13717	14619.5	15411.3	16223.5	17132.4
<i>Relation to minimum wage value</i>	1.63	1.57	1.42	2.09	1.57	1.65	1.66	1.62	1.57
Persons with the 3rd disability group	8447.3	9203.3	10308.1	15643.3	11519.7	12336.2	13056.1	13801.5	14722.6
<i>Relation to minimum wage value</i>	1.33	1.29	1.17	1.83	1.32	1.39	1.40	1.38	1.35
Children with disabilities	9579.3	11205.8	12339	17837.4	13030.8	13402.1	13675.9	14500.3	14998.4
<i>Relation to minimum wage value</i>	1.51	1.56	1.40	2.09	1.49	1.52	1.47	1.45	1.38
Persons with disabilities since childhood:									
1st group	9776.4	11405.7	12546.6	18107.3	13341.3	13739.3	14079.8	14953.1	15505.1
<i>Relation to minimum wage value</i>	1.54	1.59	1.43	2.12	1.53	1.55	1.51	1.49	1.42
2nd group	8145.8	9542.6	10479.3	15853.7	11028	11356.6	11618.7	12334.6	12787.2
<i>Relation to minimum wage value</i>	1.28	1.33	1.19	1.86	1.26	1.28	1.25	1.23	1.18
3rd group	4505.4	5089.6	5871.8	11126.4	6423.7	6618.4	6860.3	7203.7	7458
<i>Relation to minimum wage value</i>	0.71	0.71	0.67	1.30	0.74	0.75	0.74	0.72	0.69

Source: Average amount of pensions granted to persons with disabilities registered with the Pension Fund of the Russian Federation. Available at: https://rosstat.gov.ru/storage/mediabank/pi_3.1.doc (accessed: April 26, 2022); Amount of minimum wage for the purpose of establishing social supplement to pensions in the Russian Federation. Available at: <https://rosstat.gov.ru/storage/mediabank/2.8.docx> (accessed: April 26, 2022).

Table 4. Contribution of wages of working persons with disabilities to their total household incomes

Contribution of wages of persons with disabilities to the total household income	Statistics	Total household income, rubles	Share of labor income of a person with disabilities in the total household income, %	Average monthly wage, rubles
From 0 to 10% (5% of the number of households)	Average value	48,300	8.8	4,250
	Median	48,300	8.8	4,250
	Minimum	39,000	8.7	3,500
	Maximum	57,600	8.9	5,000
From 10 to 20% (44% of the number of households)	Average value	60,900	15.7	9461.11
	Median	62,000	15.5	10,000
	Minimum	30,000	12.9	5,000
	Maximum	88,000	18.8	15,000
From 20 to 30% (24% of the number of households)	Average value	38,400	24.3	9,370
	Median	34,000	24.9	8,100
	Minimum	18,000	20.8	4,500
	Maximum	75,000	26.8	17,000
From 30 to 40% (12% of the number of households)	Average value	28,880	32.4	9,300
	Median	30,000	31.3	10,000
	Minimum	23,000	30.3	8,000
	Maximum	33,000	36.9	10,000
From 40 to 50% (7% of the number of households)	Average value	46,400	43.7	20,000
	Median	45,000	44.4	20,000
	Minimum	22,200	41.7	10,000
	Maximum	72,000	45.1	30,000
From 60 to 70% (5% of the number of households)	Average value	42,000	66.6	28,000
	Median	42,000	66.6	28,000
	Minimum	38,000	65.8	25,000
	Maximum	46,000	67.4	31,000
All respondents	Average value	48,610	24.3	10,875
	Median	47,000	19.8	10,000
	Minimum	18,000	8.7	3,500
	Maximum	88,000	67.4	31,000

Source: Sociological survey of persons with disabilities aged 18 and older living in the Vologda Oblast (2018). Number of working respondents – 41 people, 40 people responded to questions about income.

These data indicate that the contribution of the monetary income of persons with disabilities from work to the total income is usually small. At the same time, for some persons with disabilities, even a small additional income may be of interest if their household's disposable income is generally low.

Thus, the performed analysis allows making a number of generalizations. The first thing is that unrealized labor potential has been accumulated among persons with the third disability group against the background of their unfavorable

financial situation compared to persons with the first and second disability groups. Second, the employment barriers in the labor market are mainly overcome by those applicants with disabilities who have a low level of claims regarding the amount of wages and agree to work outside their specialty, and sometimes without formalizing labor relations. Third, combination of these factors leads to the fact that the labor potential of persons with disabilities is realized, but does not provide a significant increase in material well-being.

Discussion

Persons with the third disability group have the greatest potential for involvement in labor activity. At the same time, it is among them that the maximum unemployment rate is recorded, which indicates that there are problems with finding a suitable job. Considering that labor activity on average makes an insignificant contribution to the total disposable income of households of persons with disabilities, the question arises as to how much such employment is “forced”, that is, due to the unsatisfactory standard of living of persons with disabilities.

In Russia, there is a significant regional differentiation in the employment rate of persons with disabilities. Moreover, the employment of persons with disabilities is related to the amount of disability pension, social protection rate and labor market situation. For example, O.V. Kuchmaeva points out: first, “an insignificant amount of disability pension stimulates the employment of people with disabilities”, and second, “in regions where the poverty level is lower, even with a high wage level, employment of persons with disabilities is minimal, which is due to both a higher level of social guarantees and competition between people with and without disabilities for jobs places” (Kuchmaeva, 2020). The researcher also proves that, potentially, with the creation of favorable conditions for the employment of people with disabilities, labor market could receive an additional 165.8 thousand people as labor resources, and if the employment rate of people with disabilities in all regions of the country reaches 20%, the number of additional employees involved would amount to 611.5 thousand people (Kuchmaeva, 2020).

The researchers note that persons with disabilities are characterized by a concentration of employment in low-skilled professions (Demianova, 2018). According to observations conducted by specialists of the Resource Training and Methodological Center in the Northwestern Federal District, graduates with disabilities report a

lack of professional qualifications as an obstacle to employment (Denisova et al., 2018).

The data indicate that an important incentive to find work among persons of the third disability group in conditions of a low level of pension provision can really be the desire to increase the disposable income rate. However, in the conditions of the Russian labor market, people with disabilities are at a disadvantage. At the stage of finding a suitable job, they face a number of problems, including those caused by the existence of negative stereotypes about hiring workers with disabilities (Shkurko, Kozyakov, 2018), insufficient information, lack of suitable vacancies and individual support during employment (Starobina et al., 2015). Quota places also do not solve pressing problems, providing only a small contribution to the promotion of employment of people with disabilities. As a result, a contingent of working people with disabilities is formed, the most typical representatives of which are older people, men, people of the third disability group, and persons with higher or secondary vocational education.

The specific employment structure of people with disabilities is also reflected in the general level of their satisfaction with their work and its various aspects. Among workers with disabilities, the proportion of those who are unsatisfied with the amount of wages (12%), the reliability of work (5%) and the duties performed (4%) is higher, in contrast to the general population (the corresponding values were 9, 3 and 2%). Slightly higher, in comparison with the general population, is the proportion of people with disabilities who do not experience professional (8 and 5%) and moral satisfaction (6 and 3%, respectively) from their work²³. At the same time, satisfaction with various characteristics of the workplace is a significant criterion for the quality of a person’s working life (Belekhova, 2019).

²³ Job satisfaction of persons with disabilities aged 15 years or older. Available at: <https://rosstat.gov.ru/storage/mediabank/tab4-16.html> (accessed: July 26, 2022).

Its low rates among persons with disabilities indicate that the jobs in which they are employed do not fully contribute to the disclosure and realization of their labor potential and to improving the quality of life in general.

The prospects for changing the current situation in terms of increasing the possibilities of realizing the labor potential of people with disabilities are associated with the development of information resources, on the one hand, expanding the ideas of people with disabilities about vocational education opportunities, employment options in the specialty in their native region, and on the other hand, aimed at increasing employers' awareness of the benefits of hiring people with disabilities, overcoming negative stereotypes, about people with disabilities in society. Russian researchers have already made specific proposals on the architecture and substantive content of such information systems (Denisova et al., 2018).

Positive changes in the sphere of work of state employment promotion centers are associated with the expansion of the use of individualized algorithms for working with applicants with disabilities. For instance, in the Vologda Oblast, the employment services are implementing targeted technology to provide people with disabilities with services to assist in finding a suitable job. Information about each person with disabilities in need of such services comes from the institution of medical and social expertise. Then this information is used to establish the professional preferences of people with disabilities and create an individual electronic "employment passport" and "individual employment plan"²⁴. To accompany a person with

disabilities during the job search, they are provided with a personal employment manager²⁵.

An individual approach to the provision of employment services is a common practice in developed countries. But it has some disadvantages. For instance, the authors of a systematic review of studies published in 2002–2008 on the effectiveness of measures to promote the employment of people with disabilities in the UK noted that the use of personal consultants and individual case management helped people with disabilities and long-term illnesses to return to work, however, time constraints and performance targets of employment consultants led to the fact that they initially, applicants who were more ready to work were selected for the programs, as well as difficulties with building trust on the part of customers, which is necessary for the effective management of individual cases (Clayton et al., 2011). Of course, when developing Russian regional programs, it is necessary to take into account the existing world experience in promoting the employment of people with disabilities in order to avoid the most obvious mistakes and use the most effective practices.

One of the examples of successful practice in overcoming barriers to employment of people with disabilities is the annual All-Russian competitions of professional skills among people with disabilities since 2015. The Abilympics movement currently covers all regions, volunteers, instructors and experts are involved in it. The Abilympics national championships are held within the framework of the national project "Education". The participants and winners of the competition in their nomination have opportunities to find a job in the specialty in a friendly environment of the leading enterprises of the industry²⁶.

²⁴ On the approval of the Administrative Regulations for the provision of state services for the organization of support with the assistance of employment of persons with disabilities: Order of the Department of Labor and Employment of the Vologda Oblast, dated January 11.2019, no. 13 (edited July 16, 2019). Available at: <https://depzan.gov35.ru/deyatelnost/uchastie-v-gosudarstvennykh-i-tselevykh-programmakh/realizatsiya-tselevoy-programmy/normativno-pravovye-akty/> (accessed: April 28, 2022).

²⁵ Mentoring and targeted approach to employment of people with disabilities. Available at: https://vologda-oblast.ru/novosti/novosti_organov_vlasti/nastavnichestvo_i_adresnyy_podkhod_pri_trudoustroystve_invalidov/ (accessed: April 28, 2022).

²⁶ About the Abilympics movement. Available at: <https://abilympics-russia.ru/mmupid/23#/> (accessed: July 26, 2022).

Promotion of employment is only one of the areas of support that people with disabilities need when realizing the right to work. Finding a suitable vacancy and getting a job become the first step in professional activity. Directly at the workplace, people with disabilities can also encounter various difficulties related both to the nature of the work performed, and to the features of corporate culture, relationships in the team, the quality and completeness of employers' compliance with labor legislation. The foreign study, devoted to the comparative assessment of the quality of jobs and satisfaction with them, shows that the proportion of those who have a high quality of work (an integral value calculated based on an assessment of four variables: professional position, hourly wage, employment stability, training received and subjective job satisfaction) is noticeably higher among workers without disability than among people with disabilities (Agovino, Parodi, 2014). These facts actualize studies aimed at assessing the quality of working life of persons with disabilities including in relation to the problems of precarious employment and social inequality.

Conclusion

People with disabilities are poorly included in the workforce. In their contingent, there is a growing proportion of people with the third disability group with the highest economic activity. At the same time the indicators of their employment rate are decreasing, the unemployment rate remains high, as well as the employment practice without a formal contract with the employer. Taken together, these phenomena lead to the accumulation of unrealized labor potential among persons with the third disability group, against the background of their unfavorable financial situation as compared to persons with the first and second disability groups. The barriers to employment in the labor market are mostly overcome by applicants with disabilities, who agree to work for low wages, often not in

their specialty and without formal employment relations. The combination of these factors leads to the fact that employment does not provide people with disabilities with a significant increase in their material well-being.

The key areas of measures to promote the realization of the labor potential of persons with disabilities are the development of remote employment practices for low-mobile categories of persons with disabilities, the replication of successful practices and projects of supported employment of persons with disabilities, the improvement of support for job seekers with disabilities at all stages of the service to find a suitable job and employment. It is also necessary to take an individual approach to addressing the employment of persons with disabilities. Regional integrated information systems containing information about vacancies available to job seekers with disabilities, as well as about the job seekers themselves, can serve as a tool for improving public services in this area. Further support of existing and development of new projects aimed at increasing the competitiveness of people with disabilities in the labor market and overcoming negative stereotypes of employers about their hiring is necessary.

The scientific novelty of the conducted research consists in substantiating the thesis that in the current conditions the employment of persons with disabilities does not contribute to a significant improvement of their financial situation, since its characteristics are formed under the influence of barriers to the realization of the labor potential of persons with disabilities, in conditions of their low disposable income level. The need for an individualized approach in providing employment assistance services to persons with disabilities is substantiated. The research results may be of interest to specialists engaged in the study of the quality of life of persons with disabilities.

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Received June 3, 2022.

Sustainability Strategies of Socially Oriented NPOs: Grant Support Mechanism



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Abstract. The amount of grant support allocated by the state to the non-profit sector of social services is increasing annually; the number of social projects and the volume of their funding are growing as well. The state's interest in the qualitative development of socially oriented non-profit organizations and expansion of the segment of their participation in social services is determined by the opportunities that non-profit organizations possess as new performers of social services, capable of introducing innovation in addressing social problems of citizens in need of support. In Russia, the Presidential Grants Foundation is the major grant operator that accumulates public funds and distributes them on a competitive basis among non-profit organizations. Its unique competitive system complies with modern standards for supporting project applications and supports socially oriented non-profit organizations in the process of implementing winner projects. The Foundation is also distinguished by a more significant amount of funds allocated to

For citation: Starshinova A.V., Borodkina O.I. (2022). Sustainability strategies of socially oriented NPOs: Grant support mechanism. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), DOI: 221–236. DOI: 10.15838/esc.2022.5.83.12

support grants in comparison with other grantmakers, including private foundations. The problem that determined the focus of the issues considered in the article is the contradiction between the significant amount of support provided to regional socially oriented non-profit organizations in the process of their formation as providers of social services, and the continuing low efficiency of these organizations. We investigate major strategies for raising funds by socially oriented non-profit organizations and show that their income portfolio consists mainly of the funding that comes from grant support, which is accompanied by risks of financial instability of organizations and an increasing dependence on grant funds as the main source of income. The empirical base of the study includes open source data and interviews with representatives of regional socially oriented non-profit organizations, resource centers and grantgivers (n = 27). Based on the analysis of interviews with the participants of the study, the article examines the possibilities of income diversification for non-profit organizations and the risks each strategic perspective may entail. We reveal the readiness of non-profit organizations to develop strategies aimed at attracting donor funding and income-generating activities. We also define conditions under which organizations are able to implement the discussed strategies in practice.

Key words: grant support, socially oriented non-profit organizations, financial vulnerability risks, sustainability strategies, subsidies, Presidential Grants Foundation.

Acknowledgment

This article was carried out with support of the Russian Science Foundation (RSF) according to the project 19-18-00246-P “Challenges of the transformation of Welfare State in Russia: institutional changes, social investment, digitalization of social services”, implemented at Saint Petersburg University.

Introduction

The arrival of socially oriented non-profit organizations (SONPOs) as new service providers in the social services sphere characterizes one of the trends in the transformation of welfare states in the transition from social welfare models based on social security to modern social service models. In Russia, the sphere of social services is among the priority development goals¹, and the achievement of this goal involves state support for SONPOs as partners in intersectoral cooperation regarding social issues.

¹ On non-profit organizations: Federal Law 7-FZ, dated January 12, 1996 (amended July 2, 2021). Available at: http://www.consultant.ru/document/cons_doc_LAW_8824/87a16eb8a9431fff64d0d78eb84f86accc003448/?resource=cons&target=doc (accessed: May 30, 2022).

The state provides SONPOs with various forms of support², primarily budget subsidies, including grants³. Grants represent an effective way of direct support for non-profit organizations (NPOs) due to their targeted nature, which helps to address current social issues using innovative methods. The expected effectiveness of grant support, including private grants, is achieved through compliance with the

² On the foundations of social services for citizens of the Russian Federation: Federal Law 442-FZ, dated December 28, 2013. Available at: http://www.consultant.ru/document/cons_doc_LAW_156558/8aa93e4372acfa5dd8c704830619f2f65aa84528/ (accessed: March 2, 2022).

³ On non-profit organizations: Federal Law 7-FZ, dated January 12, 1996 (amended July 2, 2021). Available at: http://www.consultant.ru/document/cons_doc_LAW_8824/87a16eb8a9431fff64d0d78eb84f86accc003448/?resource=cons&target=doc (accessed: May 30, 2022).

rules when writing an application, the mechanism of competitive selection, and reporting standards on the funds received; this ensures control over the expenditure of funds provided to organizations, and minimizes excessive formalization. In accordance with Russian legislation, budget subsidies in the form of grants are provided directly to organizations and through intergovernmental transfers, i.e. through the allocation of financial resources to the regions for grants to be distributed among NPOs operating in their territories. Grants funded by budgets of various levels are a tool of state social investment in the non-profit sector of social services (Borodkina et al., 2022) through which organizations develop and obtain new opportunities for applying innovative approaches to meet the needs of their target groups. Non-profit organizations can also use grant funds to attract additional resources for their own activity.

The relevance of studying the emerging approaches of NPOs to grant support is primarily determined by the following aspects: public expectations related to the realization of the potential of NPOs as performers of social services; the interest of the state in the expansion and qualitative development of the non-profit sector, since the sphere of social services embodies the system of public welfare and represents the sphere of state responsibility; significance of the support provided by state grants, endowing them with financial stability in the period of formation. The Government of the Russian Federation has adopted an action plan (roadmap) for 2016–2018 “Support for access of non-governmental organizations to the provision of services in the social sphere”⁴ and “The set of measures aimed at ensuring phased access of

socially oriented non-profit organizations operating in the social sphere to budget funds allocated for the provision of social services to population for 2016–2020”⁵. In 2019, the standard for the development of competition in RF constituent entities was approved, which provides for the inclusion of measures for the development of SONPOs and social entrepreneurship in regions’ roadmaps. Nevertheless, according to the results of Russian research, the potential of budget financing in the distribution of grant funds to support SONPOs remains low (Martynov, 2019; Stepanov, 2020).

Given the increasing amount of funding for grant support to NPOs and the high demand for grants at the initial stage of the functioning of organizations in the field of social services, it is necessary to study how they manage to implement the opportunities they obtain when receiving grants and overcome the emerging risks of financial instability. These issues determined the subject of our study, the results of which are presented in the article. The purpose of the work was to analyze the role of grant funds in the income generation strategies of regional SONPOs in order to achieve the stability they need in order to perform their functions in the process of entering the emerging market of social services. The analysis was based on interviews with managers and employees of non-profit organizations, including representatives of resource centers and the grantgiver, the Presidential Grants Foundation (PGF). The article focuses not only on the advantages, but also on the risks of grant support, which may hinder the development of non-governmental providers of social services. The obtained research findings contribute to the

⁴ On the approval of the action plan (“road map”): RF Government Resolution 1144-r, dated June 8, 2016. Available at: http://www.consultant.ru/document/cons_doc_LAW_199767/ (accessed: December 10, 2021).

⁵ “The set of measures aimed at ensuring phased access of socially oriented non-profit organizations operating in the social sphere to budget funds allocated for the provision of social services to population for 2016–2020”. Available at: <http://docs.cntd.ru/document/456050188> (accessed: December 10, 2021).

understanding of the practice of using grants as a form of support for SONPOs in the context of dramatic changes in the Russian system of public welfare.

NPOs income portfolio and financial vulnerability risks

Grant support for NPOs is in the focus of researchers' attention and is discussed, as a rule, in the context of the financial situation of organizations within the framework of the concepts of financial vulnerability of non-profit organizations. The financial situation of organizations directly affects the likelihood of receiving grants (Paarlberg et al., 2017), since the sustainability of NPOs in this aspect is an indicator of their viability (Bowman, 2011; Green et al., 2021). In this regard, one of the key research questions presented in most of the articles devoted to this topic is to study the capabilities and ability of organizations to diversify income sources in order to predict and overcome financial vulnerability (Mazanec, Bartosova, 2021; de Andres-Alonso et al., 2016; Tevel et al., 2015). The results obtained demonstrate that a diversified income portfolio provides more stability and, therefore, largely determines the life expectancy of organizations (Carroll, Stater, 2009). The availability of several funding streams and a certain combination of earned income, government contracts, grants, private donations and attracted funds create conditions under which NPOs can avoid excessive dependence on any one source of income, stabilize their financial situation and thereby reduce the risk of financial crises or interruptions in financing (Frumkin, Keating, 2011). Moreover, the need for diversification within the source of income, in particular public financing, is substantiated in order to obtain greater benefits and prevent financial risks, especially when it comes to large organizations capable of managing multiple financial flows (Zhao, Lu, 2019).

Modeling the optimal combination of financial flows is based on financial portfolio theory (Kingma, 1993). At the same time, supporters of the modern portfolio theory (MPT), in addition to the requirement of diversification, pay attention to a more subtle approach to the income strategy of non-profit organizations (Qu, 2019). Portfolio risks, in their opinion, depend on the income structure. Organizations that have donations as their main income or that do not have a main income at all face greater financial risk. NPOs engaged in commercial activities or those whose income structure includes mainly government subsidies are significantly less likely to face financial crisis risks. However, in the latter cases, the risks of commercialization and restrictions associated with public financing may be a challenge for NPOs. Analysts most often consider the partnership of NPOs and the state in the production of social services as a significant factor in the financial stability of organizations; nevertheless, public financing can increase financial risks. Risks are associated with competition within the non-profit sector; and in Russia, NPOs at the same time compete with state social institutions for budget subsidies (Starshinova, Borodkina, 2020). Moreover, NPOs have to deal with the requirements of budget austerity and the need to respond to the increasing demand for social services (Cortis, Lee, 2019).

According to experts, the conditions under which non-profit organizations providing social services at the expense of budgetary funds can cope with potential financial risks are the ability of organizations to increase resources and manage them accordingly, including not only financial, but also human resources, awareness-raising activities, targeted programs and services, including management strategies, leadership issues, etc. (Searing et al., 2021). At the same time, researchers have different opinions when assessing the role of

state financing in diversifying the portfolio of non-profit organizations; state financing can either displace other flows or, on the contrary, facilitate the search for new sources of income. A widespread claim concerning the effect of reducing the entrepreneurial activity of NPOs in the presence of public financing (De Wit et al., 2017) in the context of changing social policy toward reducing public spending on social needs is largely disputed by the results of studies proving that NPOs are forced to develop entrepreneurial strategies to ensure their financial stability precisely in order to obtain or maintain public financing (Miko ajczak, 2018).

Grant dependence, according to some researchers, is a risk factor for the financial well-being of NPOs (Green et al., 2021). Government decisions on allocating grants to non-profit social service providers may be influenced by the rates of administrative costs of organizations (Ashley, Faulk, 2010). It has been established that the professionalization of the non-profit sector, measured by operational and administrative costs, has a small, but, according to the authors, practically and statistically significant positive relationship with the allocation of grants by foundations (Stewart, Faulk, 2014). At the same time, professionalization should not add unnecessarily bureaucratic burden to organizations, i.e. make them administratively inefficient. Such a risk is possible under continuous government funding (Lu, Zhao, 2019). The procedure for allocating grants to NPOs provides for the following: in order to become grantees, initially NPOs are checked not only in terms of financial well-being; the legitimacy of the organization is also taken into account, as well as the compliance of the activities performed with the stated mission; in the future, organizations with a high degree of legitimacy are provided with incentives so that they can maintain partnership relations with the grantgiver (Paarlberg et al., 2017).

Of particular importance is the network inclusion/integration of NPOs, which creates competitive advantages when gaining access to financial resources in competitive markets, in particular grants (Faulk et al., 2017). Organizations with a high level of social capital acquired and built up in the process of networking are more prosperous and have a better chance of receiving grant support (Dell et al., 2022).

According to the theory of the life cycle of non-profit organizations, most Russian SONPOs are still in a formative stage, having a relatively short history of functioning, and are experiencing an acute financial deficit (Starshinova, Borodkina, 2020); therefore grants at this stage of their development are one of the most popular ways to maintain SONPOs' income (Stepanov, 2020).

The identified theoretical and methodological aspects of research presented in the literature are of fundamental importance for further understanding of domestic practice concerning grant support for organizations of the non-profit sector of social services. They were taken into account when analyzing the empirical data of our study.

Research methods and materials

The information base of the study includes statistical data on the financing of regional SONPOs, published in open sources, documents, legal and normative acts regulating the development of the non-profit sector of social services.

The methodology is based on methods of collecting sociological information through semi-structured interviews with SONPOs representatives who received grants, interviews with specialists of resource centers that support organizations in preparing grant applications, including with a representative of the Presidential Grants Foundation, conducted as part of a study of the development of the non-profit sector in Russian regions in 2019–2022 (n = 27). The composition of

the interview participants, on the one hand, allowed us to form an idea of how the main interacting actors, grantees and grantgivers, understand the role of grant support in the development of new performers of social services, on the other – the interviews were selected in such a way as to show the positions of various SONPOs operating in different Russian regions (Southern, North Caucasian, Ural and Far Eastern federal districts, Republic of Tatarstan, and Moscow).

The article also uses data from a sociological survey conducted in 2020 in all RF federal districts, dedicated to studying the level of digital development of regional social services, including through grant support. The sample set of the study included 22 SONPOs included in the regional registers of social service providers operating in large and small urban settlements, as well as rural areas. The questionnaire comprised questions about grants as sources of financing for digitalization, which made it possible to compare non-profit and state providers of social services according to this indicator.

Research findings

Organizing grant support for regional SONPOs.

The main organization in Russia providing grant support to SONPOs is the Presidential Grants Foundation (PGF), which was finally formed in 2017 as a single state grant-giving fund from several funds operating since 2006 and established at the expense of budgetary funds. Currently, the PGF accumulates and distributes grant funds for the development of civil society, holds competitions and provides grants to Russian NPOs for the implementation of projects in 13 areas, including “Social services, social support and protection”⁶.

⁶ Presidential Grants Foundation. Available at: <https://президентскиегранты.рф/> (accessed: January 22, 2022).

The PGF performs the functions of not only a grant operator; it also provides information, educational, legal and other support for non-profit organizations on social project planning. The number of supported projects submitted by NPOs to PGF competitions increased annually until 2020 inclusive, and the amount of funding also increased. *Table 1* contains data on the “Social services, social support and protection” area and on the area close to the subject of our study “Support for family, motherhood, fatherhood and childhood”; the presented data reflect the dynamics of grant support for SONPOs over the past five years. For comparison, we note that the social services financing area of the PGF competition ranks second in terms of funding (85 projects in the amount of 4,945,000 rubles), the area of supporting young talents in the field of culture and art (18 projects in the amount of 228 112 040 rubles) ranks first; the third place in terms of funding is the support of projects in the field of culture and art (46 projects in the amount of 64,469,765 rubles). In general, the foundation held nine competitions with participation of 27 thousand non-profit organizations that submitted 77 thousand social projects, of which 15,877 project applications totaling 32.8 billion rubles⁷ were supported based on competition results. Consequently, the foundation supported every fifth submitted NPO project (approximately 20% of the total number of grant applications from NPOs).

Socially oriented NPOs also receive grants from private Russian foundations. The fundamental differences of the PGF, as follows from an interview with its representative, consist in the amount

⁷ The results of a special competition for the provision of Presidential grants for non-profit organizations have been summed up. Available at: <http://kremlin.ru/events/administration/63960> (accessed: January 20, 2022).

Table 1. Dynamics of grant support provided by the PGF to NPO projects in 2017–2021 (in two competition areas)

Area of support	Target audience of the projects	Year	Number of supported projects	Total amount of financing, rubles
Social services, social support and protection	Persons of no fixed abode, persons in a difficult life situation, persons with disabilities, patients with cancer and their loved ones, poor families, alcohol and drug addicts, adolescents and youth with disabilities, persons released from prison.	2017	9	9 787 240
		2018	15	31 109 525
		2019	13	28 070 470
		2020	26	51 688 556
		2021	22	47 100 996
		Total in the area	85	4 945 000
Support for family, motherhood, fatherhood and childhood	Orphans and children left without parental care, teenagers on file with the Minors Affairs Department, specialists of social rehabilitation centers for minors, children with disabilities, youth and students, teachers, parents, large and poor families, pregnant women	2017	6	9 751 010
		2018	9	13 583 518
		2019	6	14 456 802
		2020	14	33 632 253
		2021	9	16 281 488
		Total in the area	44	87 705 071

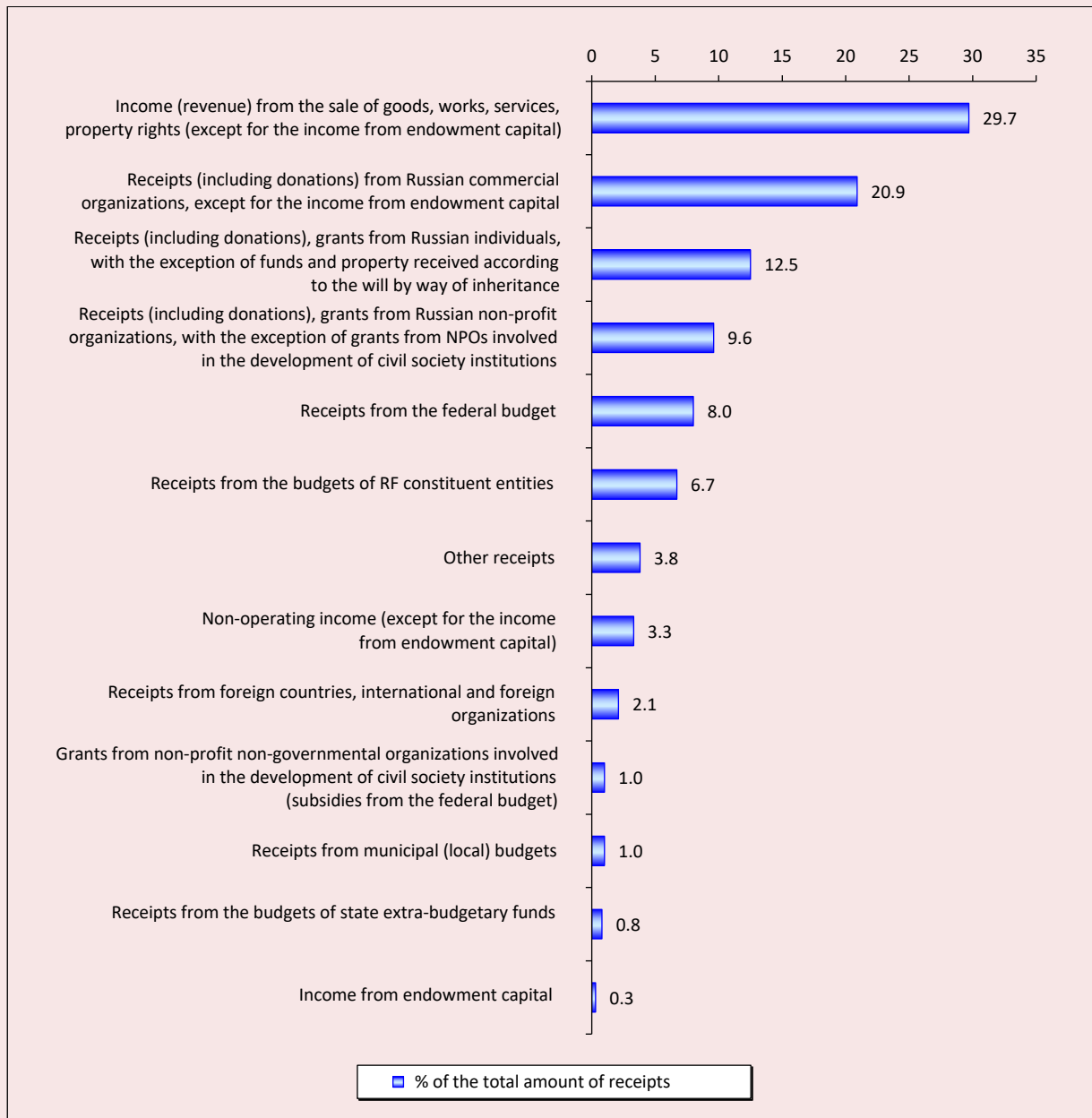
Source: Presidential Grants Foundation. Available at: <https://президентскиегранты.рф/>

of grant support and, no less importantly, in the developed ecosystem for NPO support: “In general, 80% of the Foundation’s work related to the support of existing projects rather than competitions. Each project is assigned a curator and a financial analyst. <...> The Presidential Grants Foundation implements a comprehensive approach – it provides significant financial support, develops competence systems in the field of social design and management, and also helps in the support and implementation of projects” (Presidential Grants Foundation, deputy head, Moscow, 2021). The PGF plans to disseminate the competition model in RF constituent entities.

The total volume of funds and other assets of Russian SONPOs in 2020 amounted to 895 million 345 thousand rubles. *Figure* shows different sources of grant funds and other sources of income of NPOs.

The analysis of the data in *Figure 1* shows that budget funds allocated to support NPOs account for 17.5% compared to 45% of the funds that organizations receive from private sources. Organizations obtain almost a third of their income through income-generating activity. Let us consider the positions of non-profit organizations themselves, the strategies that are really developing to attract income, and possible prospects for their diversification.

Sources of funds and property of SONPOs (100% = 895,345,000 rubles)



Source: Sources of formation of funds and other property of socially oriented non-profit organizations for 2020. Federal State Statistics Service. Available at: <https://clck.ru/aqGe2>

Grants in the income structure of SONPOs

Grants are the most popular way among SONPOs to obtain funding, especially at the initial stage of their creation. It is confirmed by representatives of NPOs: “Now all NPOs are developing at the expense of grants” (Autonomous NPO, specialist, Yekaterinburg, 2022). Similar opinion is shared by specialists from resource centers, whose functions include grant, information, legal and other support of regional NPOs: “Basically, all [NPOs] rely on grants, <...> after some time, when they become more developed, they launch business <...> and put forward their projects, attract business, i.e. they start receiving donations from legal entities, but it all starts with grants” (Resource center, deputy director, Rostov Oblast, 2021).

Heads of non-profit sector organizations understand the purpose of grants as incentives for innovation in social services and emerging opportunities for the development of new social projects: “By winning grants you get a good start for your project” (Private social institution, head, Rostov-on-Don, 2021). Grants are also considered as a source for attracting new funds and specialists: “The grant “Obnimi tsifru” (Embrace a figure) allowed me to hire a fundraiser for a year” (Autonomous NPO, director, Rostov-on-Don, 2021).

Taking a priority place in the structure of financial sources, grants, according to informants, ensure stability of the organization: “We need a stable income. Grant competitions allow us to obtain it” (Charitable foundation, director, Sverdlovsk Oblast, 2022). At the same time, grants are increasingly becoming a way of survival, in particular a source of wages for employees and other operating expenses: “It so happened that I had no money to pay my employees. <...> I sat down and I started preparing for grants. And as a result, last

year we won four grants and two more this year” (Autonomous NPO, director, Rostov-on-Don, 2021).

By attracting grants, organizations are currently striving to build a kind of continuous strategy at the expense of grant funds, providing income for the future: “We won a grant, it provided us with wages for six months, in February we won another grant, which provides wages for the whole of 2021; now in June we hope that we will receive a grant for another year and a half; that is, it is so cyclical, because the Presidential Grants Foundation makes it possible to obtain and implement two grants simultaneously” (Autonomous NPO, executive director, Rostov-on-Don, 2021).

Nevertheless, the grant strategy for obtaining funding has its serious risks, especially in situations where grants are the main source of income. Already at the beginning of the work on a project, there is a risk of not winning a grant for its implementation. Due to a small number of specialists, which is typical of regional NPOs, managers have to restructure the work schedule of the entire organization in accordance with the competition periods and focus all efforts on preparing applications. Expectations of funding from the next grant form a kind of dependence, and the risk of financial instability after the grant is completed is destructive, because new areas developed within the framework of a social project are often suspended and even terminated: “We can’t ensure stability because there are cases when we don’t win a grant <...> We had a problem with a speech therapist, <...> a great specialist; but we did not win the grant and have no opportunity to pay them” (Regional Organization of the Disabled, head, Rostov-on-Don, 2021). When receiving grants designed to stimulate the development of NPOs in various directions, after the completion of the project in the absence of other sources of income, organizations are at risk of returning to

their original positions: “If an organization lives off grants alone, it can be viable and sustainable, but not interesting to society, to others. It doesn’t evolve” (Autonomous NPO, head, Yekaterinburg, 2021).

The need to anticipate such risks is recognized by all the leaders of SONPOs: “Grants just provide an incentive to come up with new projects, but what to do with old projects? <...> It is necessary to think from the very beginning what you will do with this project after the grant ends” (Private social institution, head, Rostov-on-Don, 2021). The position regarding the role of grants was quite definitely formulated by a grantgiver: “We believe that after all, the project and receiving a grant are a kind of startup; after that, the activity should be self-organized” (Presidential Grants Foundation, deputy head, Moscow, 2021). Consequently, it is becoming more and more obvious to grantgivers and grantees themselves that grant dependence really exists and organizations need to learn how to find alternative ways of financing.

Heads of regional SONPOs seek to identify constructive ways to overcome grant dependence: “I don’t believe that grants should be the main income of the organization in general. <...> My plan is to get off this grant needle and start raising money through private corporate donors. We have one more idea, an entrepreneurial one, <...> we are even thinking of applying to a startup accelerator, we won’t make it on our own, <...> we need to learn how to develop a business, calculate everything, understand how to start on the market. <...> So far, we have assembled a team, <...> we are thinking about how much money is needed” (Autonomous NPO, director, Rostov-on-Don, 2021).

On the other hand, the heads of NPOs working in the field of prevention of socially dangerous behavior note that projects aimed at helping groups of risky behavior (drug users, homeless, etc.) rarely

receive the support of Russian grantgivers. “We barely survive, like other NPOs” (NPO, head, Kazan, 2022). These organizations used to obtain grants from foreign foundations, and the withdrawal of international organizations and foundations from Russia undermined the activities of a significant part of NPOs working with these target groups.

Diversification of SONPOs income

Recognizing the dependence on grant support as a largely understandable and predictable financial strategy, all SONPOs are currently concerned about the need for income diversification. An analysis of interviews with representatives of NPOs shows that organizations’ strategies for generating income include fairly similar funding sources that do not always provide long-term financial stability; besides, each of the sources has certain risks. The survey participants identified a certain set of income sources that characterizes possibilities of diversification of financing, changes in the financial situation, in which only grant funds prevail so far. First of all, these include subsidies from regional budgets for carrying out activities in the interests of target groups, reimbursement of costs for providing services at the expense of budgetary funds or performing state tasks when entering the registers of social service providers, donations from donors, volunteer resources, income-generating activities, and income from endowment capital.

The subsidies received are usually regarded as insignificant and costly in terms of the ratio of the amount of money allocated and the efforts spent by employees on their implementation: “We receive state subsidies from the Ministry of Labor, but the amounts are small” (NPO, chairman, Yakutsk, 2020). Nevertheless, sometimes organizations manage to receive targeted subsidies from the regional budget for the employment of specialists providing certain areas of activity, including management, that is, for the salaries of heads

of organizations. Such subsidies were received, including in the form of grants: “I am officially employed under a grant” (Regional Organization of the Disabled, head, Rostov-on-Don, 2021). In general, the informants agreed that the amount of subsidies is significantly reduced and the possibility of obtaining them does not help the organizations to achieve a stable state.

When a SONPO is included in the regional registers of social service providers, it obtains opportunities for reimbursement of costs at the expense of the budget funds of the regions or fulfillment of state tasks. However, all organizations face the problem of low tariffs, which is a serious obstacle to increasing income: “About the risk of social service providers. <...> The tariffs are so low that it is impossible. Entering a register is not an option, not an option at all. We tried to calculate, but realized that there was no way. <...> Our document flow will devour more than what we earn, with all the tax deductions” (Regional Organization of the Disabled, specialist of the Development Center, Rostov-on-Don, 2021). Entry into other registries that create opportunities to increase the prestige and recognition of NPOs, does not solve the problem, but even aggravates it: “Now we are working on a document on entering the register of performers of socially useful services; we are facing a problem: the register exists, but there are no tariffs” (Private social institution, head, Rostov-on-Don, 2021).

The strategy of attracting income at the expense of donors is becoming more and more realistic, thorough and appropriate, according to the survey participants: “Myself and many organizations have a mission to restructure in order to attract more private and corporate donations. This is a more stable development scheme, more complex, longer-lasting. But we’re all going for it. The non-profit sector appeared in the country not so long

ago. The system of private corporate donations was born recently, and now it is only being formed” (Autonomous NPO, specialist, Yekaterinburg, 2022). In the meantime, funds from sponsors or donors are mainly targeted, including for the monthly salary of invited specialists. In cases where there is no regular income from sponsors, the organization is often unable to pay salaries to its employees: “Specialists may leave because I simply will not find money to pay them. And it is impossible to communicate to the sponsors that we just need to transfer money to pay our specialists, because we provide services to the entire population for free, <...> here is the problem” (NPO, director, Yekaterinburg, 2019). Thus, NPOs, especially those with longer work experience, are currently planning to raise funds more via private donations, mainly businesses. The implementation of such a strategy allows organizations to focus on providing social services to those social groups for which they were created: “... Social activists [NPOs] <...> should communicate with business. Now we need <...> not think about where to make money, just focus on the provision of services” (NPO, director, Yekaterinburg, 2019).

Giving preference to income in the form of donations from donors, NPO representatives understand typical risks of such a strategy: “We had four large donors who transferred a certain sum to us every month, <...> and several private donors, smaller ones. The crisis broke out, and our two largest donors quitted. <...> [The rest] simply stopped funding without explanation. <...> In April, the organization’s account had zero rubles” (Autonomous NPO, director, Rostov-on-Don, 2021).

Organizations provided with permanent financing from the founder are in a more favorable situation, but this is an exception rather than a common practice. Thus, a private charitable

foundation, which simultaneously performs the functions of social services for children with disabilities, managed to form a high-quality staff of professional employees corresponding to the level of modern organizational standards, thanks to the monthly receipts of the founder's financing: "We <...> have nine specialists, all of them are officially employed in the foundation, there are three specialists working under a civil contract, and the rest of the employees work under an employment contract, all have a full social package, a net salary. It's all thanks to the founder, because we form his image <...>. We receive a certain amount for charity every month, and a certain percentage goes to wages, <...> we work daily, according to a certain schedule, with certain job responsibilities. <...> We have a PR manager who works with grants, social media, and prepares applications" (Autonomous NPO, executive director, Rostov-on-Don, 2021).

The success of the strategy of attracting donations from donors is determined not only by the economic situation. The survey participants considered the relations of non-profit organizations and donors as mutual interested relations of the two parties. On the one hand, these are the organizations with experience, business partners, relations with whom have been formed over the years and are determined by the authority of the organization, public trust in it; on the other hand, these are donors of funds and, as SONPO representatives emphasized, a system of values, traditions, principles, i.e. a culture of donations that has not yet developed today. Donation is not on a systems basis so far; often sponsors, benefactors, and donors do not expect organizations to inform them about the funds spent; they even refuse to receive reporting: "They gave us the money and forgot about us. This, of course, is a fundamentally wrong approach. But we can't turn the situation around; we don't have the strength to do it. It looks like they are buying

us off" (Charity foundation, head, Yekaterinburg, 2022). The interaction between donors and organizations in need of donations in order to be effective should motivate participants to the practice that is emerging, and not vice versa.

Volunteering is a resource for the development of SONPOs, it can give quite tangible economic effects for the organization. SONPO managers and specialists working on a permanent basis were mostly invited by the founders while participating in volunteer events, during their internship as students, or while being engaged in volunteering as parents of "special" children receiving services in the organization. However, many survey participants expressed the following viewpoint: "Most often, if people work for free, they work poorly; after all, any kind of work should be paid for, and even volunteers also need this kind of incentive" (Autonomous NPO, executive director, Rostov-on-Don, 2021).

In contrast to gratuitous activities, NPOs are beginning to calculate in detail the development of income-generating activities, an area that is controversial for them, but is of interest in terms of possible benefits. At the same time, among the informants there were representatives of organizations that provide support to children with disabilities, so they do not consider business as an alternative source of income. The goods produced by such organizations are most often unable to compete in the market: "It is difficult to sell the goods made by such kids <...>, besides, we will have to pay the rent for the trading place. We expected that such goods would not pay off in any way" (Regional Organization of the Disabled, specialist, Rostov-on-Don, 2021). Having emerged back in the Soviet period, such organizations were managed and financed centrally for a long time without obtaining the necessary skills to conduct commercial activity. The opposite position is held by the heads of

organizations with business experience in the conditions of market development: “At the moment we are completely self-sufficient. We work only because we manage to earn from the sale of goods our workshops produce” (Autonomous NPO, head, Yekaterinburg, 2022). At the same time, income-generating activities can correspond to the profile of services that SONPOs provide to their target groups. Without abandoning the idea of business development, SONPO representatives critically assessed the possibilities of the strategy, the main barriers to which are shortage of human resources, lack of the necessary level of qualifications and necessary competencies in the business. In addition, they believe that governing bodies are suspicious about any kind of business conducted by non-profit organizations in the field close to their core activity, since the core activity is free-of-charge for its recipients and NPOs are reimbursed the related costs from regional budgets. In this case, organizations are at risk of losing budget funding. The main problem of business development in NPOs is related to the lack of “free” employees: “We have a shortage of experienced managers” (Autonomous NPO, head, Yekaterinburg, 2022). According to the Ministry of Economic Development, the average number of employees in Russian SONPOs ranges from three to seven people; the data confirm the above problem. The survey participants are convinced that a strategy based on income-generating activity is suitable mainly for large organizations. However, representatives of one of the regions with a population of over four million people noted that there are only several such organizations in the entire region.

Another promising strategy for SONPOs is to receive income from endowment funds: “We are now seriously discussing the creation of endowment capital with our donors. <...> This is a long-term

solution to the problem of sustainability for our organization, <...> it’s good to live off donations, but you don’t know what will happen next (Private social institution, head, Rostov-on-Don, 2021). To implement this strategy in the framework of the current legislation, it is necessary to have an endowment fund that cannot be less than three million rubles, and it is also necessary to have partners in the business, banking, and management sectors. Not all SONPOs have the appropriate level of trust, recognition, and involvement in the business sphere. None of the informants representing SONPOs from different Russian regions had experience in creating such a fund, so the idea of generating income using such a financial instrument remains an attractive prospect rather than a strategy that is close to practical implementation.

The development of social capital due to the network involvement of non-profit organizations and their integration into network interactions could contribute to increasing their authority, “visibility” and recognition by potential business partners. This is largely determined by the level of SONPOs digital development and their financial capabilities. According to our survey, the whole range of the sources of funding allocated to the digitalization of SONPOs activities, grant funds account for 18.8%, the rest of the funding is generated from self-earned income or provided by donors. In this respect, non-profit organizations are inferior to state social service institutions that develop their digital trajectories mainly through budget financing (Arkhipova, Borodkina, 2021). Despite the representation of regional SONPOs in various areas of the digital space, this direction of their development so far involves more significant investment efforts in comparison with the dividends it brings.

Conclusions

For Russian socially oriented non-profit organizations, grant support is a mechanism that provides a certain financial stability, which allows them not only to remain in the emerging market of social services, but also develop innovative social projects. The Presidential Grants Foundation created a competition model fundamentally different from others, since it provides sufficiently large amounts of grant funding for NPOs and has a unique ecosystem of support for contestants; thus, the model contributes to the involvement of a large number of NPOs in the social design process in a relatively short period of time. However, along with the benefits of grant subsidies, which complement the grants of private foundations, there emerge certain risks of the grant strategy of income generation, which is currently most in demand among non-profit organizations. Choosing this strategy as the main and often the only one increase the financial vulnerability of organizations, constraining the possibilities of other ways of attracting income, including interaction with potential donors, business development, participation in the implementation of government contracts, search for acceptable financial instruments offered by banks, etc. At the same time, constant participation in grant competitions does not guarantee the development of the organization, which is implied when a grant is issued, since the receipt of a new grant is usually accompanied by the completion of activities supported by the previous grant, and the probability of losing in the next grant competition poses threats not only to the implementation of planned new directions, but also to the realization of current activities. One of the main reasons for the identified risks lies not so much in the lack of understanding by representatives of NPOs of the need to combine the activities that form the income portfolio, but rather in the lack of

conditions and resources to create fundamentally new approaches to ensuring financial stability.

The question of how to overcome the increasing dependence of SONPOs on grant funds remains relevant, since representatives of organizations participating in the survey have not put forward any unambiguous solution. Obviously, there are certain limits to increasing the volume of state financing, including grant funds. This is evidenced by the reduction in the size of subsidies and the small size of tariffs for social services, which makes these funding sources less and less attractive for SONPOs. In 2021, the number of social projects supported by the PGF decreased.

At the same time, the discussed opportunities for the development of other sources of financial support associated with the promotion of SONPOs' business initiatives indicate the emerging trends of a constructive approach to the designated problem. The development of business activities and building relationships with donors, sponsors, and benefactors as resources of SONPOs' promising strategies implies the presence of experience and relevant competencies of personnel, changing organizational culture, as well as expanding the staff of NPOs. In order to move from discussing the ways to diversify income to their practical implementation, organizations need to diversify and learn how to combine income strategies, taking into account their capabilities. The growing interest in these strategies, despite the associated risks, motivates representatives of organizations to participate in social accelerator programs and other modern forms of education (Starshinova, Chikova, 2021). The culture of charity and the demand for the formation of a partner environment, according to the survey participants, directly determine the development of strategies to ensure sustainability of non-profit organizations. However, the creation of appropriate conditions in this regard requires systems changes and time.

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Received June 22, 2022.

Manifestations of Digital Socialization among Young People: Findings of a Pilot Survey of High School Students



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Abstract. In the modern world, the processes of socialization (personality formation) are gradually moving from the real world to the online space. However, due to the increasing risks of digitalization, the impact of digital socialization on the younger generation becomes an object of controversy among scientists and the public. The paper proposes our own two-stage typology of Internet users, based on the signs of manifestation of online temperament as a behavioral model formed in the course of digital socialization. According to the classification, Internet users have features of the following types: “opportunist / idealist” (using the Internet for deception), “enthusiast / skeptic” (trust / distrust of the content), “aggressor / tolerant” (manifestation of online aggression), “addictive / autonomous” (presence of Internet addiction). Combinations of features of particular types make up the general types of users (adaptive, substitutional, passive), which reflect the results of digital socialization and network acculturation. We propose an algorithm for identifying the types of Internet users in the course of a sociological study. Having tested the proposed solution within the framework of an intelligence study (in the case of a pilot group of schoolchildren from the city of Vologda) we formulate working hypotheses about the diverse impact of digital socialization on modern schoolchildren; dynamics, instability and flexibility of online behavior models of the younger generation; close connection of the socializing influence of the Internet with the development of interpersonal communication. The hypotheses will be taken into account in the course of elaboration of the research topic. The article puts forward a model

For citation: Golovchin M.A. (2022). Manifestations of digital socialization among young people: Findings of a pilot survey of high school students. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 237–256. DOI: 10.15838/esc.2022.5.83.13

for organizing digital socialization based on the harmonization of interests of the widest possible range of agents. The findings of the research can be used in the formation of strategic plans for the development of the digital industry and educational policy. Scientific novelty of the research consists in the development of a new methodological solution for using the socializing influence of the Internet environment in the process of generalization.

Key words: digital socialization, expected socialization, non-expected socialization, network acculturation, typology of users, sociological survey.

Introduction

Digitalization poses new challenges not only for the economy and society, but also for socialization as a complex process of organizing human interaction with the environment, through which, in turn, personality develops (Gunina, Dudina, 2020). The process of socialization during the formation of attitudes, values, actions and behavior turns a person into a social being, as a result of which social integration and identity of the individual are manifested¹. The socialization mechanism is based on the synergy of individual personality characteristics (gender, age, character, etc.) methods and forms of information transmission (language, control mechanisms, parenting practices, etc.), as well as structures of behavior culture (social roles, social status, morality, ethics, etc.) (Pescaru, 2018).

The phenomenon of socialization in science is interpreted from the point of view of different theoretical approaches. Each of them represents this phenomenon in terms of a certain process: biogenetic; sociogenetic; interactionist; socio-ecological; cognitive; mastering sociality in the course of interaction with “significant others” within the framework of individual thesaurus configurations of knowledge and attitudes; appropriation and assimilation of social experience, characterized by multidirectional dynamics of progressive and regressive personality development, etc. (Lukov, 2002; Shamionov, 2013). The opinions

of representatives of different approaches are united by the fact that, within the framework of socialization tasks, they all emphasize the importance of transferring socially significant information from one subject to another. The difference lies in the essence of this information (social knowledge, social roles, social experience, cultural values, moral and ethical norms, thesauri, etc.).

Socialization tasks are performed by social institutions as a set of roles and statuses (according to N. Smelser’s terminology), as well as by agents as holders of certain roles and statuses (Shcheglov, 2016). The agents of primary socialization (traditional agents) usually include parents, teachers, mentors, educators, trainers, and the agents of the secondary socialization (secondary group) – employers, officials, representatives of state, law enforcement agencies, political parties, the church, as well as the media. Recently, the opinion has spread in science that the role of the secondary socialization institutions is actively performed by communication platforms on the Internet (Prokhorova, 2019).

Socialization is of particular importance for young people, as a child is born and grows up in social environment, and a young person, like no other, feels a constant need to be in a community of people (Schiopu, Verza, 1995). The period of child development (up to 17 years according to the periodization of L.S. Vygotsky) refers to the stage of primary socialization – one of the most active phases of this process. At this period, a child

¹ Mishra P. (2021). Socialization’s effect on personality development. *Indian Journal of Law and Social Sciences*, 1(1). Available at: <https://www.ijlss.csir.in/2021/11/socializations-effect-on-personality.html>

becomes a full individual and a member of society and later (at the stage of secondary socialization) learns specific social roles (Folieva, 2012).

Socialization, like learning, is a two-way (subject-subject) process. During socialization, personality formation occurs within the framework of the active use of norms, signs, imitation, copying, identification, adaptation, empathy, suggestion; during training – through the use of educational tools and methods (Khlebodarova, 2010). Also, the fundamental difference between socialization and learning is its final result. The expected learning outcome relates to the field of knowledge, and the expected result of socialization refers to the personal sphere (values, attitudes, orientations, etc.). Therefore, we can speak about two types of socialization – expected (socially approved) and unexpected (having the opposite effect to the given one) (Folieva, 2012).

In the modern world, the results of the expected socialization undergo significant transformations, since a person is forced to socialize in the space of two worlds – real and virtual (Ershova, 2019). According to Professor of Lomonosov Moscow State University G.U. Soldatova, “ICT today is the most important agent of socialization, which begins to compete with family and school” (Soldatova, 2018). With regard to the influence of the network environment on socialization, the term “digital (information or cyber) socialization” has been fixed in science, which is usually understood as the process of mastering and appropriating social experience acquired in online contexts by a person mediated by all available digital technologies (Soldatova, 2018); continuous process of introducing a person to the values of digital society, digital culture, formation of digital competence and adaptation in the digital environment (Grevtseva, 2022); the local process of qualitative changes in the structure of the personality, occurring in the process of its use of resources and communication with agents encountered by a person on the

global Internet (Pleshakov, 2012). There are four process components in digital socialization: digital culture (ideological and organizational values), digital learning (digital literacy and skills), digital personality development (digital personality, digital reputation), digital education (Dudina, 2021).

Strictly speaking, there are three approaches to the concept of “digital socialization” in science: 1) *fundamental* (E.V. Morozova, N.V. Plotichkina, K.I. Popova), which sees in this process the internalization (mastering) of external practices, norms, rules, roles of the network society, the introduction of world culture samples into the system of vital values (Morozova et al., 2019); 2) *broad* (N.A. Golubeva, V.A. Pleshakov, etc.), which recognizes the digital world’s unlimited independence in the formation of norms and values inherent in modern society (Golubeva, 2020); 3) *narrow* (G.A. Starodubtseva), which sees digital socialization as nothing more than an extension of the functionality of traditional socialization, i.e. the one that is realized through the efforts of family and educational institutions (Starodubtseva, 2021). In particular, A.G. Sutcliffe emphasized the inextricable link between online and offline socialization within the framework of the concept of the social brain (Sutcliffe et al., 2018).

The advantages of digital socialization usually include the possibility of the formation of a new style of communication by the Internet, involving independence, autonomy, emotional and intellectual openness, innovativeness; creation of new ways of forming identity and individuality in the digital space, leading to an increase in self-esteem (Tapscott, Barry, 2009). Thanks to the activity of the Internet as an agent of socialization, new trends appear in the process of forming a personality – personalization, gamification (Grevtseva, 2022), etc. At the same time, according to scientists, the effects of digital socialization are most effective if the socialized have motives for gaining maturity and social status (Smith et al., 2015).

The importance of digital socialization for children and youth has been repeatedly emphasized in science. In particular, Susan J. Danby from the Queensland University of Technology (Australia) writes about the new socio-cultural phenomenon of “digital childhood” as a special historical type of childhood (Danby et al., 2018). M. Prensky spoke about representatives of the younger generation as “digital natives” who have innate, not acquired knowledge about digital technologies, and are carriers of special (digital) language, quickly get used to the world of gadgets, video games and social networks. He contrasts “digital natives” with “digital immigrants” – a generation born before the widespread introduction of digital technologies (Prensky, 2001). Indeed, according to research, 87% of teenagers aged 13–17 have access to computer in the world, 58% have access to tablet devices, and more than 90% are active in social networks (Romm, Romm, 2021). It is worth noting that according to Kaspersky Lab, children from Russia spend relatively more time on the Internet than their peers from foreign countries: 56% of Russian minors spend almost all day online, in Europe – 51%, in the USA – 40% (Bochaver et al., 2019). At the same time, in the most developed regions of the country, Internet coverage exceeds 90%, and social media coverage exceeds 70% (Kozhevnikov, Maslikov, 2020).

One can often find the opinion that classical methods of socialization in the case of “digital natives” do not work in the modern world (Ignatova, 2017). Supporters of M. Prensky adhere to the point of view that the younger generation in the process of digital socialization forms network thinking, which radically changes the vision of the world and human relations². Apart from this discourse is the idea of a “digital personality” as a mental structure, which is fundamentally formed in a child during digital

socialization. Digital personality manifests itself in the process of the Internet communication; it has freedom of entry and exit from the communicative space, as well as global, indefinite multiple addressing; it is characterized by immediateness (reacts instantly, according to the principle of “then and there”); it has the possibility of the “extension” (creates the desired image, while giving special significance to individual facts) (Popova, 2019).

The formation of a new personality type in the process of digital socialization is reflected in the public culture. For instance, Yu.A. Kosik introduces the term “online acculturation” into scientific discourse. It means the process of long-term interaction of a person with the resources of the global network, as a result of which qualitative changes in consciousness occur, mediated by asynchrony, spaciousness, dynamism, interactivity, and variability. In this case, the values of personality, freedom and independence, knowledge and education, self-realization, spiritual development, social contacts, material wealth and self-expression are transformed (Kosik, 2015).

The scientific literature often discusses the advantages of the socializing potential of the digital environment. V.A. Pleshakov writes that life in cyberspace is especially important for those whose real life is interpersonally impoverished for one reason or another, which allows considering the Internet as an alternative to the immediate (real) environment, a kind of quasi-socializing environment (Pleshakov, 2009). Thus, digital socialization for a modern child is necessary as a resource that allows young people to build their identity and compensate for the deficit in other areas of social reality (Avdulova, 2011).

At the same time, a number of scientists have concerns about digital socialization related to the objective digitalization risks for human development. For instance, B. Zizek believes that interaction on the web critically lacks the key qualities of socializing influence on the personality,

² Cornu B. Digital natives: How do they learn? How to teach them? Policy brief. September 2011. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000216681>

since it is “unbound, filtered and untenable” (Zizek, 2017). According to the scientist, agents of digital socialization of a teenager are primarily anonymous interlocutors who usually express confidence that they should participate in the interaction superficially and without any serious impact on the personality. In this regard, digital socialization cannot compete with traditional forms of the process of personality formation. Y.N. Korotysheva highlights such disadvantages of digital socialization as the risk of negative result (development of cruelty, fears, psychological trauma inflicted on the psyche of a child when visiting questionable sites); a decrease in mental activity (due to rapid fatigue from the screen), which generates clip thinking³. T.A. Romm and M.V. Romm believe that the key issue of digital socialization is the question of combining traditional values with the values of digital culture, often accompanied by aggression and cruelty (Romm, Romm, 2021).

Based on a mass survey of schoolchildren aged 10–17 years, scientists concluded that the Internet has narrowed the information space of Russian teenagers to one or two communication channels, resulting in the devaluation of most existing sources of information about the world in the children’s minds (Tsybalenko et al., 2012). The negative impact of the Internet activity on social mood (Golovchin, 2019) and culture (Golovchin, 2022) is confirmed by the findings of regional studies.

Thus, at the present stage of the scientific development, due to the lack of a clear position on the results of digital socialization, a contradiction has formed in the research field that does not allow unambiguously interpreting the positive and negative sides of the socializing effect of the Internet environment. This contradiction consists in the simultaneous acceptance of both the advantages and risks of such a format of socialization without

a clear understanding of the impact mechanisms of the global network on the individual. Moreover, this contradiction forms hypertrophied myths about both the unconditional benefits of the influence of the global network on young people (which include the concept of digital childhood and cybersocialization, as well as the position “digitalization can no longer be stopped!”) and its unconditional harm (comparing the Internet with a “digital camp”). As a result, the lack of public consensus on these issues makes it difficult to understand the prospects for the development of socialization in the modern world, and the adaptation of the younger generation to it.

In the study, we intend to contribute to the controversy about the socializing role of the Internet for children and adolescents. We adhere to a narrow approach to the study of this phenomenon, according to which an incomplete (truncated) process of socialization is implemented in the digital world. From our point of view, digital socialization is not designed to create new values and norms (for which the family and education are responsible), but thanks to the representativeness of the Internet community, it powerfully affects the sphere of user behavior, forming a certain model of attitudes and reactions. In this regard, our view is consistent with the concept that digital socialization only complements the qualities of traditional socialization, is a superstructure of this process.

Thus, within the framework of our research, digital socialization is a process of personality formation determined by the purposeful influence of both family and education, as well as the Internet environment. The impact of the Internet environment includes the formation of personal behavior patterns in the network. This influence complements the formative influence of the primary agents of socialization, which create universal values, norms and cultural patterns, and is also realized in interaction with these agents.

³ Korotysheva Yu.N. Digital education. Risks and dangers of digital childhood. Available at: <https://spb.hse.ru/mirror/pubs/share/356124886.pdf>

Table 1. Conceptual model of digital socialization

Environment	Object	Institution	Agent	Function	Mechanism	Values	Norms	Patter of behavior	Result
Offline	Family	Parents	Teachers	Formation of a base for digital socialization by relaying norms, meanings, restrictions	Traditional (spontaneous)	Self-regulation, stimulation, safety, achievement, etc.	Generally accepted rules of social life	Masculinity, femininity, etc.	Basis formation for the expected socialization: universal values, norms and behavior patterns
	Education	Institutional							
Online	Personality	Internet	Network users, network community	Adaptation of generally accepted values, norms and patterns (basis for socialization) to the conditions of the Internet environment during communication with socially significant representatives of the network community	Inter-personal, stylized	Security in the use of network information; autonomy from the influence of the virtual world on interpersonal relationships in "real"	Conscious prohibition of using the network for deception and network aggression	Immediateness, transcendence, mobility, etc.	Critical attitude to the Internet content; restriction to the use of the Internet for deception; understanding the risks of Internet activity in relation to the psyche; constructive attitude to online communication

Source: own compilation.

We consider a certain ideal scenario of the digital socialization process assuming that digital socialization can be based on the joint efforts of traditional agents and the Internet community aimed at the formation of verified patterns of behavior in virtual reality. The results of socialization as a process directly depend on whether this scenario is implemented or not. In other words, ideally, both online and offline environments should be involved in the process of digital socialization. The alliance of traditional agents and the Internet community provides the expected socialization, and the replacement of the roles of one agent by another – unexpected. Below we present conceptual understanding of the nature of the object of our research (*Tab. 1*).

In the process of digital socialization, as well as in the process of socialization in general, a person (object), agent(s) and a reference pattern participate, the imitation of which forms a holistic picture of the world in the individual consciousness. As a result, the object either

clearly separates the rules of the virtual world from its real life, or integrates them. In the latter case, they replace reality, which for one reason or another does not suit them. In this regard, it is important to understand what behavioral patterns young people perceive in the online environment, how they react to them, and also what type of socialization this process corresponds to – expected or unexpected. The expected digital socialization, in our opinion, should be aimed at creating technological conditions to adapt an individual to the challenges of the modern world by creating a platform for remote interaction of network users (primarily in the format of communication) with the condition of maximizing the number of persons involved in this process. Unexpected one is associated with the digitalization risks for the younger generation and leads to the emergence of a hybrid type of self-regulation among young people (based on the layering of opposite patterns, values and norms into a single mental complex).

The purpose of the research is to develop a typology of the Internet users that describes various manifestations of expected and unexpected digital socialization among young people. To achieve this goal, we have performed the following tasks: generalized the ideas about the typologies of the Internet users formed in science; developed the author’s typology of the Internet users and the algorithm of research steps to determine the online temperament of representatives of the younger generation; tested the typology on the data of an intelligence sociological study; and formulated working hypotheses about the specifics of the young people’ behavior on the Internet. As part of the intelligence phase of the study, we have carried out the search for a methodological solution for classifying Internet users and testing this solution for strength. We propose a new scientific result – the author’s typology of the Internet users, which can be used to generalize the socializing influence of the Internet on the younger generation, as well as to identify the nature of the impact of this influence on the communicative abilities that are important for the adaptation of the population to the conditions of the BANI-world.

Research methodology

Attempts to classify network users in science began relatively recently. The earliest and most detailed classification was proposed in 2011 by the American sociologist B. Solis. He identified

eighteen different types of users on the basis of typical strategies that are used in communication in social networks: self-presentation, pragmatic, rhetorical, dialogic, semantic, and discrediting⁴. Later, the tradition of compiling such typologies was picked up by other scholars. Each of them tries to base their ideas on one or more signs of the Internet activity of users: goals, motives, intensity of network use, self-presentation online, etc.

The experience of compiling user typologies points to a number of important methodological conclusions. First, scientists admit that a user in the network can be both active and completely passive (i.e. be in the network formally). Second, along with universal typologies, there are those which take into account age features of users (V.S. Sobkin, A.V. Fedotova, G.U. Soldatova). Third, typologies virtually do not consider the impact of digital socialization; they group users based on goals and motives for using the Internet, rather than the possible results on the impact on the behavior and character of the individual. The authors of the typologies tend to avoid taking into account the socializing effects of digitalization and generally underestimate this phenomenon. The psychological categories (motivation, aggression, creativity, leadership, trust, etc.) used as bases for classification are applied outside the context of digital socialization. This underestimation, from our point of view, does not yet allow fully using the developed classifications to assess the impact of the Internet on the younger generation (*Tab.2*).

Table 2. Typologies of the Internet users in the scientific literature

Author	Basis for the typology	User type
B. Solis	Communication strategy in social networks	Benevolent, problem solver, commentator, researcher, conversationalist, curator, producer, broadcaster, marketer, web star, egocaster, self-promoter, observer, careerist, “EMI” (extremely much information), spammer, listener, complainer
Master Card Digital Sharing and Trust Project	Economic motives of users	Open users, online interlocutors, targeted buyers, passive users, proactive advocates

⁴ Solis B. Digital transformation: Executives need a sense of urgency to compete against digital natives. Available at: <https://www.briansolis.com/2019/11/digital-transformation-executives-need-a-sense-of-urgency-to-compete-against-digital-natives>

End of Table 2

Author	Basis for the typology	User type
WEB-Index	Device used to access the network	Dekstop users; mobile users
First Direct, E. Zekman	Patterns of activity in social networks	Ultras (possessed), casuals, deniers, newcomers, observers, peacocks, screamers, shifters, ghosts, informants, inquirers, approval seekers
O.N. Kondratyeva	Competence / incompetence	Experienced users ("surfers") who feel "at home" on the Internet ("residents"), and inept users ("lost travelers")
	Youth / maturity	Young users ("natives") and age users ("immigrants")
	Aggressor / victim	Virtual aggressors ("spiders"), their victims ("flies") and easily manipulated users ("hamsters")
	Creativity / copiability	Creative, creating new content ("spiders"), and passive consumers of other people's content ("flies")
E.V. Lazutkina	Opinion leadership	A user who has gained popularity in an offline environment; an expert author (providing news information on a narrow topic); a user who has gained popularity in an online environment
A. Morozova	Media activity level	Media maker, user maker, user
Yu.A. Kosik	General purpose of using the Internet	Consumer, communicator, productive
V.S. Sobkin A.V. Fedotova	Motivation for using the Internet	Users motivated by the desire for psychological compensation, avoiding conflicts and difficulties in real life, the desire for self-expression and the need to expand their cultural and economic opportunities; users focused on maintaining real communication due to interest in self-presentation on the web
E.V. Brodovskaya A.Y. Dombrovskaya	Network usage intensity; using the Internet for communication; intensity of content creation; types of preferred content; the level of trust in the content	Informational person, entertaining person, pragmatic person, traditional person, uninformative person
G.U. Soldatova T.A. Nestik E.I. Rasskazova E.Yu. Zotova	Purposes of activity in the Internet environment	Generalists, players, network readers, communicators focused on learning
P.B. Brandtzaeg	Purposes of using the network (procrastination, communication, controversy, self-realization)	Sporadic, secretive, socializers, debaters, activists
E. Ortega, etc.	Resources that are used by users (Internet services, departmental services, etc.)	Laggards, dissatisfied, experienced, subscribers
J.B. Horrigan	Showing interest in certain content	Omnivores, connectors, "dim veterans", productive, mobile centrists, "connected with difficulty", inexperienced experimenters, few, indifferent, offline users
S. Livingstone, E. Helsper	Purposes of using the Internet (obtaining information, media, etc.)	Basic, moderate, broad
C.F. Shih, A. Venkatesh	Diversity and extent of Internet usage	Intensive, specialized, non-specialized, limited
Source: Kosik, 2015; Kondratyeva, 2020; Lazutkina, 2017; Morozova, 2018; Sobkin, Fedotova, 2019; Brodovskaya, Dombrovskaya, 2014; Soldatova et al., 2013; Brandtzaeg, 2010; Horrigan J.B. <i>A Typology of Information and Communication Technology Users</i> . Pew Internet report. 2007; Livingstone, Heksper, 2007; Ortega et al., 2007, Shih, Venkatech, 2004; Solis B. Digital transformation: Executives need a sense of urgency to compete against digital natives. Available at: https://www.briansolis.com/2019/11/digital-transformation-executives-need-a-sense-of-urgency-to-compete-against-digital-natives ; Online temperament: Types of personalities on the web. Available at: https://www.marketing.spb.ru/mr/social/online_personality_types.htm ; Zeckman A. Five social media user types and tips for marketers to connect with each one. Available at: https://www.toprankblog.com/2012/11/5-social-media-user-types/		

As part of our approach to the category of “digital socialization”, we have developed the typology of the Internet users. The difference between our solution and the typologies of the Internet users existing in science consists in taking into account the socializing effects of the network environment. The typology was based on the category “online temperament”, which has not yet been fully worked out in science. By online temperament, we understand the basic determinant of the behavior of representatives of the younger generation on the Internet, which is formed both in the process of expected and unexpected digital socialization and reflects the result of this process in the categories of types of the Internet users. Based on the conceptual understanding of the results expected from digital socialization, we have identified the factors determining the online temperament of young people: trust in the content offered on the Internet; the use of the network for deception; a tendency to ward world network aggression and Internet bullying; persistent psychological dependence on the Internet.

We have identified eight particular types of users who are paired together in one way or another to manifest online temperament (*Tab. 3*). An *opportunist* is inclined to search the Internet for ready-made solutions to educational problems and present these solutions as their own. An *idealist* does not use such methods. An *enthusiast* tends to trust the content presented on the web as “the ultimate truth”. A *skeptic* checks the information obtained from the Internet in alternative sources of information. The sign of an *aggressor* is participation in the practices of insulting and pressure on the Internet users through online communication, as well as the desire to clarify relations in the network publicly. A *tolerant* type does not use fake accounts and nicknames to insult other users; avoids communicating online with obvious aggressors. An *addictive* type shows dependence on the Internet, which affects interpersonal relationships offline and the fulfillment of social responsibilities. An *autonomous* type is more selective about network

visits, does not form conflict situations with others about the frequency of visits and the content viewed (Golovchin, 2022).

To establish particular types, we suggest using a sociological questionnaire, where the questions are put together as cases (practical situations). We should recognize that the most sensitive aspect of the online experience is the Internet addiction disorder, the level of which can only be determined by a specialist psychologist in the order of regulated medical procedures. The additive and autonomous personality type of the Internet users is recommended to be distinguished by indirect questions. They do not concern the manifestations of addiction, but the impact of the global network on family relationships: the presence of conflicts with parents about the time spent on the Internet and the content viewed; neglect of communication with parents, lessons and household chores in order to spend more time online. In principle, the presence of such conflicts will indirectly indicate problems with network dependency.

According to our approach, each Internet user can manifest traits of several particular types at once, which are combined into a single behavioral complex reflecting the results of digital socialization. This complex can be generalized into three resulting types of users: adaptive, substitutive and passive. For example, the adaptive type combines the traits of an idealist, skeptic, tolerant and autonomous user; the replacement type combines the traits of an opportunist, enthusiast, aggressor and an addictive user. Passive users do not use the Internet as a platform for communication, network aggression, and information search. In general, the adaptive type indicates that in the course of network acculturation, a personality has formed that perceives the virtual and real world as distinctive and independent of each other phenomena. The replacement type will indicate acculturation, during which a person replaces the real world with a virtual one. The passive type will indicate that there is no impact on the personality from digital socialization.

Table 3. Typology of the Internet users by manifestations of online temperament among young people

Parameter	Indicator	Private types (reflect the influence of online temperament)								Common types (reflect the result of digital socialization)			
		Oppor- tunist	Idealist	Enthu- siast	Skeptic	Aggres- sor	Tolerant	Addictive	Autono- mous	Adaptive	Substitute	Passive	
1. Propensity to use the network for deception	Find ready-made works on the Internet and hand them over to the teacher passing them off as his own (k1)	+	-								-	+	No response
2. Tendency to trust network content	Believe that you can trust information on the Internet without limit (k2.1) To verify the truth of information from the Internet, find relevant information in alternative sources (book, textbook, magazine, newspaper, etc.) (k2.2)			+	-						-	+	No response
3. Propensity for network aggression	Believe that the Internet space is free from restrictions, and no rules of politeness are required to communicate online (k3.1)				+						-	+	No response
	Use a pseudonym (nickname) so that you can write whatever you want, and at the same time the interlocutor did not find out about it (k3.2)					+					-	+	No response
	In conflict situations in the network, he finds out the relationship publicly on the forum (k3.3)					+					-	+	No response
	Uses a fake account to insult other people on social networks (k3.4)					+					-	+	No response
4. Tendency to world Internet addiction	Does not communicate with people who offend on the Internet, immediately puts them on the «black list» of contacts (k3.5)										+	-	No response
	There are conflicts with parents about the time spent on the Internet (k4.1)											+	No response
	There are conflicts with parents about the content viewed on the Internet (k4.2)											+	No response
	Neglects communication with parents, lessons and household chores in order to spend more time online (k4.3)											+	No response

Source: own compilation.

At the same time, we are aware that the existence of an adaptive, substitutive and passive type is a kind of terminal case. Often an Internet user is a carrier of diametrically opposite online temperaments, so in the study we provide both terminal and intermediate types of Internet users.

To determine the types of the Internet users in the course of a sociological study, we propose the following algorithm.

a) Determination based on the processing of empirical data of subindexes reflecting the attribute of a particular type of user. As part of this operation, if there are signs of an idealist, a skeptic, a tolerant and an autonomous user, a subindex 2 is assigned to the observation; if there are signs of an opportunist, an enthusiast, an aggressor and an addictive user, a sub-index 1 is assigned. Observations that include refusal of an answer are marked 0.

b) Calculation of the total online temperament index based on the sum of all subindexes in the range of values from 0 to 22.

c) Determination of the general type of the Internet user based on the interpretation of the boundaries of the values of the online temperament index

- adaptive type – 22;
- moderately adaptive type – 15–21;
- moderately substitutive type – 11–14;
- replacement type – 11;
- moderately passive type – 1–10;
- passive type – 0,0.

The proposed algorithm of research operations was tested on the materials of a series of intelligence sociological surveys. As part of the testing, a pilot (convenient) sample was used⁵. In total, we have

carried out three measurements: in September 2020, 55 people participated in the study, in May 2021 – 53 people, in March 2022 – 40 people. The representatives of the pilot group are children aged 15 to 17 years old, studying in the senior classes of two schools in Vologda – “Secondary School no. 12”, “Secondary School no. 13”. Gender was not taken into account in the sample. For the tasks of approbation (verification of the proposed solution), the inclusion of respondents in the same educational team turned out to be more valuable. Due to the use of convenient sampling, the survey subjects were selected according to the principle of accessibility and proximity to the researcher. The choice of the respondents’ age is due to the fact that, according to experts, it is during this period that the most significant change in the structure of interests occurs, the revision of the direction and degree of involvement in various components of the information space (Avdulova, 2011).

We have conducted a pilot survey in the form of a handout questionnaire at the place of study of respondents. We have used the same tools at all stages of the survey. The questionnaire presents 11 case situations; we ask the question about how the respondent usually acts in such a situation. In advance, we have stipulated that the respondent may not provide an answer if they have never been in such a situation due to the lack of relevant Internet experience, an account in social networks, registration on forums, etc.

In order to show the reliability and strength of the proposed solution, we briefly summarize the empirical results of the intelligence study.

Research results

As part of the approbation, we followed the steps corresponding to the proposed research algorithm.

The *first step* is to determine private types of Internet users and their dynamics, based on empirical data for 2020–2022. The approbation indicates that in the survey sample at all stages of

⁵ Convenient sampling is a type of probabilistic sampling representing the result of sampling from the general population, in which the sampling procedure meets the general requirements of the study, but there are no requirements for the representativeness of the sample and the probability assessment. This type of sampling is the most useful for trial testing.

its conduct, the type of autonomous and tolerant user with the traits of a skeptic and idealist is most often encountered. In other words, the surveyed high school students as a whole are not inclined to use the Internet for network aggression and cyberbullying; do not have confidence in information from Internet sources; do not use the Internet to simplify educational tasks and deception as much as possible. The Internet does not interfere with their lives, does not form conflict situations in the family.

On the other hand, in the dynamics of the observed indicators, the significance of the dominant types is gradually weakening. In particular, over the three years of measurements, skeptical users have been gradually replaced by enthusiasts; it means that the trust of the surveyed schoolchildren in network resources is growing. Tolerant users are replaced by aggressors; therefore, the norms of behavior on the Internet cease to be unambiguous for everyone. Idealists are being replaced by opportunists, as a result of which the use of the Internet for deception passes into the category of a certain norm. However, these trends do not yet indicate the flow of a constructive attitude toward the network into a destructive one, since there is no substitution of an autonomous user type for an addictive one in dynamics. The current situation suggests a more meaningful role of the Internet as a psychological trap leading to lifestyle changes and conflicts. For instance, the role of an addictive user in the sample in 2022 is the least pronounced (11%). It is worth noting that in 2020, the smallest share fell on the type of enthusiast (7%), and the role of an addictive user was characteristic of 22%.

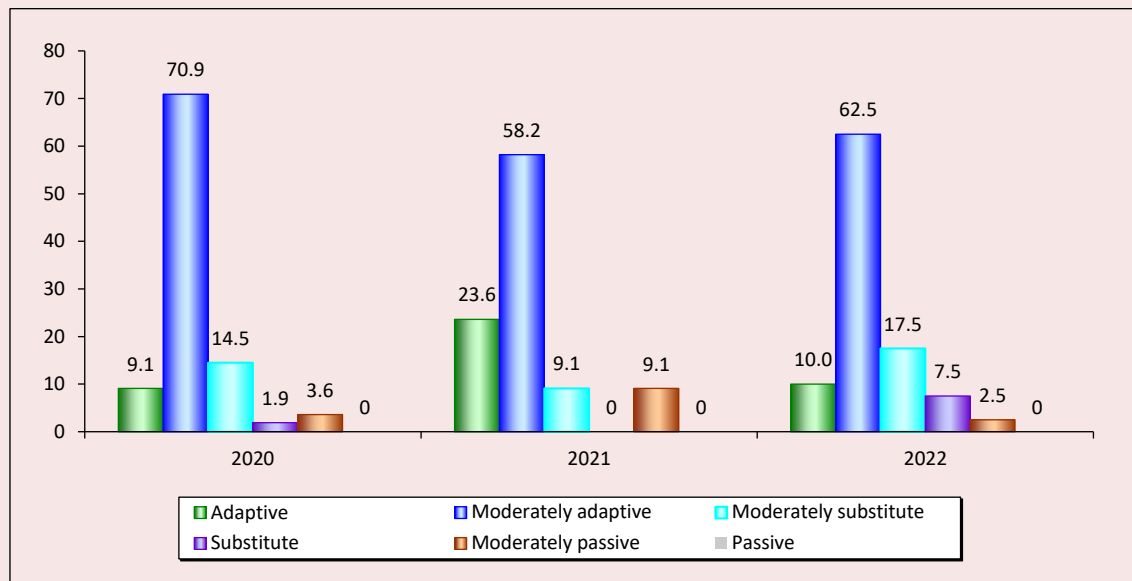
The *second step* is digitization in the form of assigning sub-indexes from 0 to 2 to individual types of Internet users in the sample. Then we sum up the sub-indexes into a general online temperament index. As a result, for each year of measurements, we have obtained a number of numbers in the range from 0 to 22.

The *third step* is that the obtained indexes are ranked by rearranging the values from larger to smaller. In accordance with the boundaries of values, one of the three general types of Internet users is determined for each respondent. The generalizations have shown that adaptive types of Internet users have the largest representation in the sample at all stages of the research. However, over time, the composition of the group of adaptive users decreases (from 80 to 73% in 2020–2022), which is facilitated by the replacement of the roles of an idealist, skeptic and tolerant user in the sample with an opportunist, enthusiast and aggressor. The downward trend has a continuous dynamics: over the three years of measurements, the proportion of representatives of the adaptive type is decreasing more and more.

In terms of further prospects for digital socialization, the strengthening of the positions of the terminal form of the replacement type is alarming (*Fig. 1*). In 2020, the type of net replacement user was 2% of the sample, in 2021 it was not observed at all, and in 2022 its share reached 8%. We should remember that these users are addicted to visiting the Internet, fully trust information from the network, use network resources to deceive and are involved in aggression. In principle, such cases should be very rare, and the growth of indicators may indicate ambiguous transformations in the spiritual life of young people. According to the dynamics of the indicators, it is noticeable that the terminal form growth does not occur due to the transition of a moderate replacement type to a pure replacement type, but by reducing the representation of adaptive users in the sample.

To understand the attitude of young people toward the Internet, it is important to note that we have not recorded any net passive user during the entire measurement period. The share of users of moderately passive type (with an index less than 11) is critically small: in 2020 – 4%, in 2022 – 2.5%.

Figure 1. Representation of general types of Internet users in the study sample (2020–2022), %



Source: own compilation.

In one way or another, the surveyed schoolchildren are influenced by digital socialization. In fact, the role of “digital natives” is now firmly fixed for the representatives of the younger generation.

Based on the data of the pilot measurement, we have tested the assumption about the ambiguous influence of the user type of the learning youth (mediated by online temperament) on the level of the individual’s communicative abilities. In order to assess the communicative abilities level, we use the tools proposed by V.V. Sinyavsky and V.A. Fedoroshin for testing children over the age of 14. They have compiled a questionnaire in which communication skills are determined by answering 20 questions. Each answer is scored on a scale from 0 to 1. The sum of points multiplied by a coefficient of 0.05 indicates a certain level of formation of communicative competencies: high (above 0.65 points), medium (0.56–0.65 points), and low (below 0.56 points). We chose the methodology due to the fact that it is correlated with the age capabilities of high school students, as well as seamlessly integrated

into sociological research (Zhavoronko, Niyazova, 2022). Questions from the test of V.V. Sinyavsky and V.A. Fedoroshin were included in the survey questionnaire in 2020 and 2021.

In accordance with the methodology of V.V. Sinyavsky and V.A. Fedoroshin, we have determined the levels of the respondents’ communicative abilities included in the sample: half of the high school students (50%) have communication abilities at a high level, 37% – at a low level and 13% – at an average level. Further, we have revealed the level of communicative abilities of different types of Internet users (Tab. 4). We have found that representatives of all online temperaments are most characterized by a high communication skill. However, a low level is more often a distinguishing feature of two groups – substitutive and passive users. In general, the structure of communication abilities of the group of adaptive and substitute users are very similar (except for the representation of a high communication skill).

Table 4. Matrix of comparison of general types of the Internet users with the level of their communication skills, %

Level of communication skills	Adaptive		Moderately adaptive		Moderately substitutive		Substitutive		Moderately passive		Passive	
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
High	20.0	76.9	43.6	46.9	37.5	60.0	0.0	-	0.0	40.0	-	-
Average	40.0	0.0	48.7	18.8	12.5	0.0	0.0	-	0.0	20.0	-	-
Low	40.0	23.1	7.7	34.4	50.0	40.0	100.0	-	100.0	40.0	-	-

Source: questions about communication skills were included in the questionnaire in 2020 and 2021. In 2022, the corresponding block is not included in the questionnaire.
 In 2021, no representatives of the replacement type were identified, and also, in general, no representatives of the passive type were identified in the study. Therefore, the corresponding values are not presented in the matrix.
 Source: own compilation.

In the dynamics of 2020–2021 the connection of online temperament and communicativeness becomes more stable in the group of adaptive users, but practically does not undergo any changes in the group of substitutes. In the group of passive users the share of persons with a low level of communication skills decreases over time, which suggests that the potential of communication at school age can be realized offline as well. It is important to note that the dynamics of the indicators makes it clear – the behavioral patterns of Internet users are flexible, not data once and for all. It means that online behavioral patterns are quite manageable (changeable).

Discussion of the results

Within the framework of the implemented stage of scientific research, we have proposed a typology of Internet users including an algorithm of research steps for classifying youth representatives by online temperament, and developed a scientific toolkit (questionnaire). We have tested the algorithm on the example of a pilot group of high school students in the framework of an intelligence sociological study (2020–2022). In general, the approbation showed the reliability and strength of the proposed methodological solution, as well as the possibility of its application during long-term empirical measurements.

Before proceeding to reflection on the empirical data obtained, we should recall that the task of testing our classification is not to gain new knowledge about the process and consequences

of digital socialization. First of all, we have tried to demonstrate the efficiency of the proposed methodological solution, to show what results it can provide within the framework of application. It is due to the testing on the example of a very limited sample. At the same time, the analysis of empirical material allows coming up with a number of interesting working hypotheses.

Within the framework of the *first* hypothesis, we can assume that the results of digital socialization, which are expressed in the formation of a particular type of online temperament, are not the same for different users. The digital world in adolescence definitely has an impact on the process of the formation of personalities and worldview, but it is still difficult to unequivocally judge how large this influence is and whether the Internet replaces the impact of family and education.

In the framework of the *second* hypothesis, we assume that digital socialization does not form rigid behavioral models in users. On the contrary, the attitude toward the Internet and its impact among young people is changing very dynamically (most likely under the influence of traditional institutions). It gives reason to believe that it is quite possible to manage the consequences of unexpected digital socialization with the proper level of control on the part of the main actors.

In the framework of the third hypothesis, we suppose that the socializing influence of the Internet, determined by online temperament, is a condition for the formation of interpersonal

communication as an important social skill, but not in all cases. Using the example of the pilot group, it is noticeable that if a type of adaptive user has formed within the framework of digital socialization, then this connection is stronger than that of replacement users. Thus, in the first case, we may be talking about the results of expected socialization, in the second – unexpected socialization.

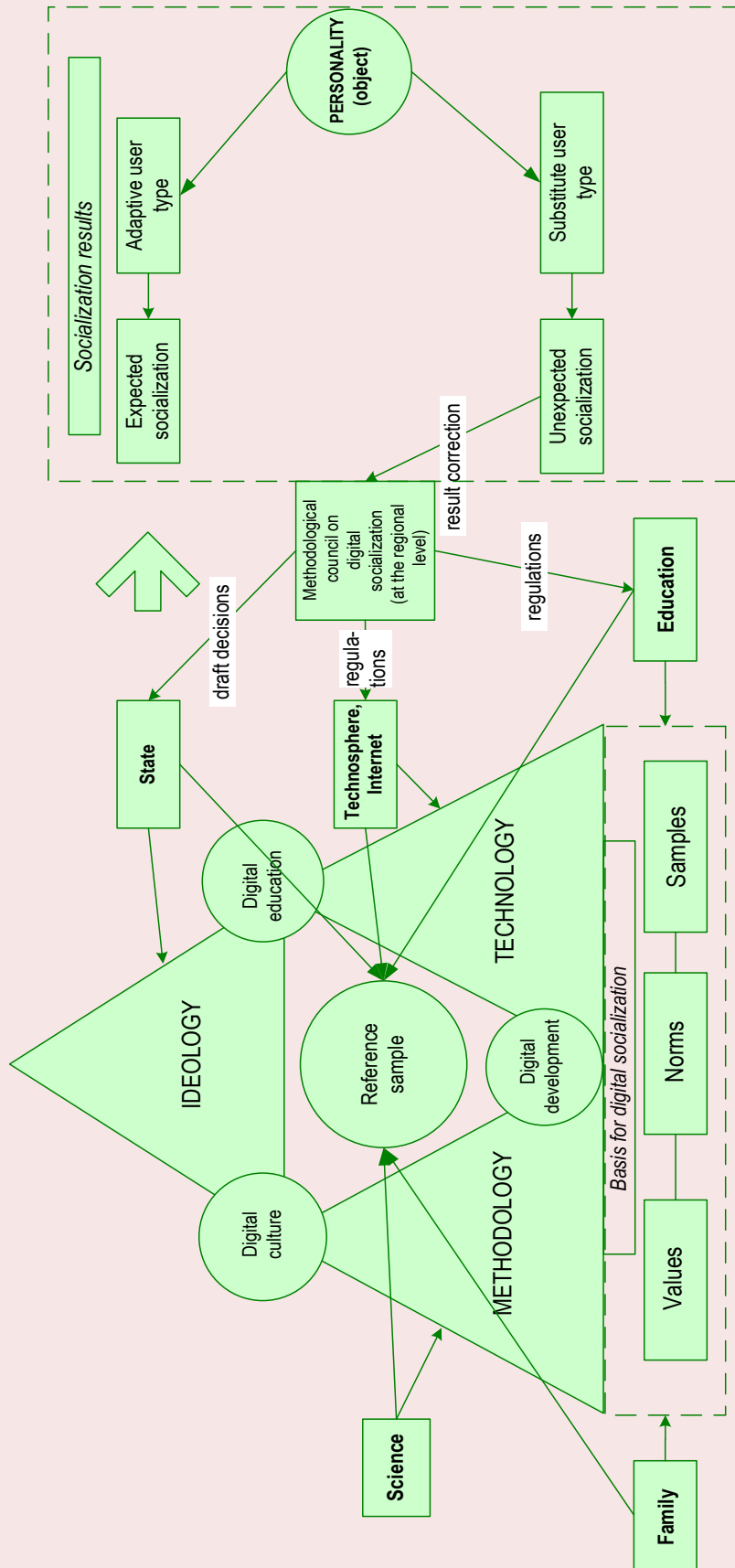
The hypothesis about the feedback of the results of digital socialization with the communicative abilities of users is not yet confirmed by the data of other studies. More often you can find the statement that network communication does not end on the Internet, but contributes to the development of new forms of sociability. However, this conclusion is directly related to the involvement in the activities of network communities, and not to the results of digital socialization and the corresponding behavioral reactions (Tsymbalenko et al., 2012). At the same time, we can assume that those who are less capable of offline communication tend to destructively manifest themselves on the Internet – to use aggressive forms of communication; to completely immerse themselves in the Internet space, sacrificing personal time and harmony in the family, etc. In this situation, the social environment plays a role. A high school student does not manage to build relationships with others, so he spends more time on the Internet, communication within which is not regulated by clear rules and is not accompanied by personal contacts. On the other hand, it is obvious that real communication should become a model for online communication, but not always the interlocutors and the immediate environment can provide the conditions for this.

Working hypotheses will be used to plan further research. In connection with the data obtained during the approbation for further scientific research, the following questions remain relevant: what are the errors of digital socialization related to and how to overcome them? To answer them, first of

all, we should turn to the nature of communication on the network. It is distinguished by the following features: equalization of the rights of members of the network community (Maslennikov, 2009); anonymity and physical uncertainty; exchange of non-verbal information (which activates the mechanisms of stereotyping and identification); voluntary and desirable contacts; difficulty of the emotional component of communication (since emotions are expressed in a symbolic form); manifestation in communication of business, cognitive, corporate motives, motives of self-affirmation, affiliation, self-realization and personal development (Zherebin et al., 2017); striving for atypical (non-normative) behavior (Luchinkina, Luchinkina, 2017); special the etiquette of communication; the experience of “flow” (loss of sense of time due to a false sense of control over the situation) (Pashkovskii, 2019). Such specifics attract first of all those who are deprived of social communication in real life. The Internet helps them to maximize the number of interpersonal contacts, but hinders the emotional perception of communication, empathy with the interlocutor, as evidenced by empirical research data (Zizek, 2017). In this case, as a result of digital acculturation, there is not the formation of a picture of the world, but the destruction of normativity, which is expressed in a decrease in the degree of commitment to the implementation of social norms. As a result of this process, the effect of a “difference in the pace of worlds” arises, when acceleration in one sphere of life leads to a lag in another (Zubok, Lyubutov, 2021).

However, the main institutional trap of digital socialization is that the organization of the corresponding process is currently very concise and simplified, since it provides for the activity of only one institution – the Internet. The family is not included in digital socialization in any way; education limits its influence to the formation of digital skills. Moreover, traditional agents of

Figure 2. Model of matching the interests of agents in the framework of digital socialization



Source: own compilation.

socialization have no clear ideas of how they can participate in the formation of digital culture, digital education and digital personal development. Because of this, digital socialization loses its basis in the form of cultural values, norms and patterns.

Within the framework of this discourse, we should touch upon one more point. The Internet, as strange as it may sound, is not completely a technological environment. For socialization processes, the network is primarily users who, in the process of exchanging information, influence a personality (bloggers, influencers, chat or forum participants). The specifics of network communication leads to the fact that users do not feel responsible for the formation of a picture of the world in the consciousness of the individual. There is no way to change such a situation, since this is the essence of the Internet. Moreover, other socialization agents do not provide users with tools to influence the personality.

What is reasonable to do in such a situation? It seems to us absolutely true that the idea presented in the scientific literature that the effectiveness of socialization programs for children and adolescents in the modern information society depends on the consistency of three elements: ideology (why?), methodology (how?) and technology (at the expense of what?) (Rodionova et al., 2021). In order to develop this approach, we propose a theoretical model of socialization in the conditions of digital childhood (*Fig. 2*).

We believe that digital socialization should be recognized as an important part of public policy (along with educational policy), and the main condition for this process should be the coordination of the interests of stakeholders. The representation of agents involved in digital socialization should be critically expanded (Internet, science, business, government, education, family). At the same time, each agent must clearly understand its functionality and responsibilities. The efforts of the family and education can be directed to the formation of a

base for digital socialization (in the form of values, patterns and norms). The Internet (represented by users) should develop the base created by traditional agents in network practices. Science should provide a verified methodology for the development of digital socialization, and the state should provide an ideology. Ideology, methodology and technology are consistent with each other through a cementing element – a reference sample as a role model for young people and a basis for identifying the younger generation in the BANI world. Currently, the Russian segment of the Internet and the blogosphere demonstrates many different role models, but it cannot yet provide a reliable role model on its own, since the idea of “self-love”, hype and self-presentation is often exploited on the web (Kolpinets, Kozharinova, 2022).

Digital socialization should be aimed at the formation of the personality of the representatives of the younger generation, however, the opposite effect should also be provided – the results of such formation can be reflected in the elements of socialization. So, in order to control the relevant processes, it is advisable to create a methodological council at the regional level from representatives of the parent, pedagogical, scientific community and the Internet community, whose tasks will include regular monitoring of the progress of digital socialization. The result of the work of the methodological council is recommendations and regulations for agents, according to which the main elements of socializing influence – the reference sample, methodology, ideology and technology should be adjusted. It is worth noting that in order to implement the monitoring task, the listed elements should be as flexible as possible.

The ideas presented will be developed as part of the continuing study. We see further prospects for scientific research in the formation of a clear idea of the reference sample as the core of digital socialization based on the requirements of time and historical experience.

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Received June 24, 2022.

Modeling the Impact of the Institutional Environment on the Development of Digital Platforms and the Sharing Economy



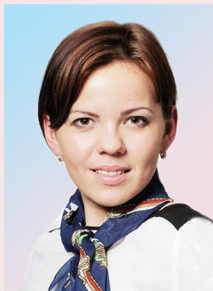
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Abstract. Digital platforms and the sharing economy contribute to a more efficient allocation of resources by releasing underutilized assets and reducing transaction costs; this opens up additional opportunities for socio-economic development. However, the rapid introduction of digital platforms and changing consumption patterns necessitate the adjustment and transformation of the current institutional environment. The aim of our study is to model the impact of the formal and informal institutional environment on the platform economy and the sharing economy in various countries. We apply theoretical analysis to show possible impact of formal and informal institutions on the development of digital platforms and the sharing economy; on this basis, four relevant hypotheses are formulated. In the study, we use data from the Digital Platform Economy Index 2020, Smart City Index 2021, WJP Rule of Law Index 2020, Social Capital Index 2020, Barometr Trust Index 2021 for 26 countries. With the

For citation: Veretennikova A.Yu., Kozinskaya K.M. (2022). Modeling the impact of the institutional environment on the development of digital platforms and the sharing economy. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 257–273. DOI: 10.15838/esc.2022.5.83.14

help of a correlation and regression analysis, we construct linear models demonstrating the impact of the formal institutional environment on the development of the platform economy, as well as the influence of informal institutions on the services of the sharing economy. We prove that a low level of corruption and the transparency of public administration are major factors in the formal environment that affect this type of activity. The informal environment is characterized by the level of trust and social contacts in the country, expressed through social capital. The novelty of our findings consists in determining the nature of influence of the formal and informal institutional environment on the development of the sharing economy. The significance of the results lies in the possibility of using the identified patterns for the development of digital platforms and the sharing economy

Key words: platform economy, sharing economy, institutional environment, formal institutions, informal institutions, sharing.

Acknowledgment

The research was funded by Russian Science Foundation grant 22-28-01830 (<https://rscf.ru/project/22-28-01830/>).

Introduction

The sharing model as a relatively new form of economic activity organization is quite familiar to the Russian mentality. At the same time, the development of digital technologies and their active application in daily transactions, both in the transformational and transactional economic sectors, have caused a new chance to be given to the phenomenon designated in the foreign economy as the sharing economy. The sharing economy seems to be a multidimensional phenomenon that expands from the implementation of the direct principle of collaborative consumption to the inclusion of aspects of the digital, network, collaborative, circular economy (Khusyainov, Urusova, 2017; Akhmedova et al., 2020), which, on the one hand, reveals its high potential, on the other hand, generates heterogeneity that prevents a comprehensive analysis of this phenomenon. The combination of heterogeneous elements, expressed in the transformation of values from consumption to cooperation, the revision of attitudes toward trust, the use of digital platforms, the formation of communities with common values, leads to a transformation of the behavior of economic agents,

to a change in institutional norms and rules of interaction, as well as to the formation of new economic institutions that arise at the intersection of old and new consumption models.

At the same time, the emergence of new forms of interaction requires an appropriate technological basis. At the same time, the development of the “sharing economy” is closely intertwined with the spread of the platform economy, which contributes to the development of the collaborative economy. The institutional environment, which is a set of formal and informal rules and norms of behavior (North, 1994), can both stimulate the formation of new forms of interaction, allowing modern trends to integrate into current processes, and restrain, creating restrictions for the penetration and consolidation of this business model. The scientific problem of the research is the need to determine the impact of the institutional environment on the development of the collaborative economy, which in the future will allow identifying areas of formation and realization of the potential of the sharing economy in solving socially significant tasks.

The purpose of the research is to model the impact of formal and informal institutional environments on the development of digital platforms and the collaborative economy in various countries. To achieve it, we have revealed the interpretations of the definition of the platform economy and the sharing economy, substantiated the role of formal and informal institutions in the development of the “sharing economy” with the help of a theoretical review, formulated hypotheses about the influence of the formal and informal institutional environment, and constructed regression models showing the nature of the influence of the analyzed factors on the sharing economy.

Institutional environment for the development of the platform economy and the sharing economy

Platform economy and sharing economy: interpretation of concepts

At the beginning of the 21st century, there is an active growth of different online platforms, from small websites with local coverage to international companies that offer various services, such as Internet search engines, online markets, video sharing platforms, music and video platforms, social networks, collaborative economy platforms, online games and etc.

As a component of the digital economy, the platform economy has no unified borders. At the same time, the discussion about the impact of the platform economy on social processes is a continuation of the discussion of the IT revolution (Kenney, Zysman, 2016). Platformization is becoming one of the development forms of the digital economy. N. Srnicek’s work discloses the role and trends in the development of digital platforms in some detail, in which the author shows both the potential and risks of the development of digital platforms. He notes that “the platform is located between users and acts as a platform on which they interact, which allows the platform

holder to get privileged access to the registration of this interaction” (Srnicek, 2019). D. Khumaryan (Khumaryan, 2019), analyzing the work of N. Srnicek, justifies that the main goal of the platform holders is not digitalization of market exchange, but capitalization of social interaction.

The platform economy refers to digital technologies driven by the Internet, cloud computing, big data and the Internet of Things, with a large number of platform organizations as leaders, developing and implementing a full set of platforms, consumers and service providers. In addition, the platform economy reduces the transaction costs of organizations, contributes to the formation of new types of economic integration, in which resources are largely integrated with traditional industries.

D. Evans defines the platform economy as a study of the unique economic phenomena of bilateral markets in a traditional market economy (Evans, 2003). According to researcher S. Makoev, the key link of the platform economy is the platform as an analogue of a channel for placing resources only in the digital space consisting of two important structural elements: software and hardware and management (Makoev, 2020).

Several legal definitions of the digital platforms have been proposed in European legislation. For example, the Organization for Economic Cooperation and Development (OECD) has defined digital platforms (Internet intermediaries) as organizations that “combine or facilitate transactions between third parties on the Internet, <...> they provide access, post, transmit and index content, products and services created by third parties on the Internet, or provide Internet-services to third parties”¹. Currently, the concept of “intermediary” is increasingly being replaced by the term “platform”, associated with a role that

¹ “The Economic and Social Role of Internet Intermediaries”, *OECD Digital Economy Papers*, 171.

goes beyond the link, and extends to providing a common space where users can carry out their activities and create added value. The members of the Commission of the European Union in the message about online platforms do not give legally sound definitions, but list some common features: a) platforms are able to create and form new markets, challenge classical business to organize new forms of participation or business based on the collection, processing and editing of large amounts of data; b) operate in various markets, however, with varying degrees of control over direct interactions between user groups; c) benefit from “network effects”, thus the value of the service increases with the number of users; d) use information and communication technologies to provide instant communication with their users².

Thus, we can distinguish two opposing discourses. On the one hand, the digital platforms embody an extremely passive position, thereby limiting themselves to non-interference between supply and demand in the market, for example, in the case of BlaBlaCar. On the other hand, the digital platforms actively influence not only the work of their providers, but also the relationships they establish with users. For example, using a complex algorithm, Uber can involve drivers in more profitable areas (for example, shopping malls, train stations) and introduce differentiated fares during peak hours. However, this scheme is also flexible, since platforms always have the ability to change their conditions at any time as a reaction to external factors.

There is no consensus in scientific research on which types of activities and which companies can be attributed to the sharing economy, which is due to the heterogeneity of this phenomenon.

² Online Platforms. Accompanying the document Communication on Online Platforms and the Digital Single Market. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52016SC0172>

In addition, alternative terms such as “shared consumption”, “joint use”, “gig-economy” or “access economy” are used in the literature (Schlagwein et al., 2019). At the same time, R. Bosman emphasizes that these commonly used and interchangeable terms have different meanings and cover a different range of activities³.

R. Botsman and R. Rogers (Bostman, Rogers, 2011) defined the economy of collaborative consumption as an economic system in which individuals share their underutilized assets and services in order to charge or share them for free and directly. A similar definition is also given in the Oxford Dictionary (2015), where the collaborative economy is defined as an economic system in which various individuals share assets and services using the Internet as a medium of exchange.

Nevertheless, G. Petropoulos (2017) called the collaborative economy a system that provides an opportunity to exchange underutilized assets to various individuals through intermediaries between consumers who equalize supply and demand using information technology (Petropoulos, 2017). However, Y. Hamari and his co-authors believe that the collaborative economy is related to the consumption of goods and services through various activities, such as exchange, trade and rent (Hamari et al., 2015). B. Balaram⁴ draws attention to the study of M. Felson and Y. Spaeth (Felson, Spaeth, 1978), in which joint use is described as an event involving one or more persons for the purpose of consuming goods and services during several combined events. On the other hand, R. Belk argues that the collaborative economy does not include money in exchange; he believes that joint use is the

³ Botsman R. (2013). The sharing economy lacks a shared definition. Available at: <https://www.fastcompany.com/3022028/the-sharing-economy-lacks-a-shared-definition>

⁴ Balaram B. (2016). Fair Share: Reclaiming power in the sharing economy. Available at: <https://medium.com/@thersa/fair-share-reclaimingpower-in-the-sharing-economy-499b46bd4b00>

coordination of the distribution and acquisition of resources by people for remuneration or other compensation; if it includes compensation, trade, exchange and barter are possible (Belk, 2014).

In the report, provided by the UK government, the sharing economy is an online platform that helps people provide access to assets, time, skills and resources (Woskow, 2014). The European Commission has defined the collaborative economy as a business model in which activities through joint platforms are facilitated by creating a temporary open market for the use of goods and services that can be provided by individuals. Thus, the sharing economy is a component of the platform economy because modern solutions of the digital economy are necessary for its effective functioning⁵.

The terminological discourse regarding the differences between the concepts related to the “sharing economy” and “collaborative economy” in Russian practice is due to both the features of translation and the development evolution of these concepts and the corresponding business models. E.F. Avdokushin and E.G. Kuznetsova made a significant contribution to the designation of the boundaries of related terms describing the collaborative economy in Russian studies. The authors first of all divide the “sharing economy” and “collaborative economy”, comparing the first one with cooperation between individuals for the exchange, donation, use of goods and services, and the second one with the exchange of products, factors of production, waste from core activities, services between legal entities, as a result of which there is alienation not of property, but only the results of owning it, and making a profit (Avdokushin, Kuznetsova, 2022). According to the scientists, the sharing economy includes various subspecies of this activity type: the economy of

shared consumption, the exchange economy, the economy of sharing goods, collaborative economy, etc. (Avdokushin, Kuznetsova, 2019).

As part of our research, we use the term “collaborative economy” considering it as one of the versions of the translation “sharing economy”. At the same time, the “sharing economy”, in our opinion, covers both “collaborative consumption” and “joint use” of resources to obtain individual and general results. At the same time, we emphasize that the main condition for attributing a particular service for the exchange of underutilized assets to the collaborative economy is the availability of a digital platform. Thus, the collaborative economy is understood as an economic model of agent interaction based on the collective use of various types of assets through digital platforms. The sharing economy is based on the practice of using and exchanging products or services supported by Web 2.0 between a platform provider, an equal service provider and a client (user), it means that there is a triad exchange for monetary compensation – an exchange without transfer of ownership can occur both locally in a community or area, and globally.

The business model of organizing the collaborative economy is implemented on platforms that create an easily accessible market for temporary use of goods or services, usually provided by private individuals. It involves three groups of users: service providers who share their goods, resources, time or skills, users of these services and intermediaries connecting providers with users, facilitating transactions between them, which are online platforms⁶.

The collaborative economy has a high potential for development due to scaling, which allows users to save money, and suppliers of goods and services to receive additional income. In addition, this

⁵ A European agenda for the collaborative economy [COM (2016) 356]. Available at: <http://ec.europa.eu/DocsRoom/documents/16881>

⁶ Ibidem.

activity type contributes to reducing the level of excessive consumption, reducing carbon emissions, creating trust between members of society, as well as the development of social capital (see, for example: Rinne, 2018).

At the early development stages of the sharing economy, its advantages were recognized, such as the reduction of excessive consumption, a positive impact on the environment and the possibility of building interpersonal communications. The attitude toward property is also changing: the idea that the possession of goods for their consumption is not mandatory is becoming more and more widespread (Botsman, Rogers, 2011).

Thus, on the one hand, the collaborative economy, involving the use of the digital platform in the implementation of its activities, is a nested set of the platform economy; on the other hand, the principle of sharing resources, goods or services on a par with economic goals allows implementing social and environmental objectives, which increases the importance of this business model in the implementation of institutional changes.

The research relevance of the institutional context of the development of the collaborative economy is also confirmed in scientific papers on this topic. For example, much attention is paid in the literature to the role of formal institutions: the gaps in legislation concerning, for instance, user security or tax payment, and informal ones including trust on platforms, are discussed (Williamson, 2009). The research results conducted by PWC in 2015⁷ indicate that the most important reasons that encourage consumers to share are the favorable price of goods and services, the ability to access a variety of goods and services, high quality, the opportunity to get a unique experience, meet new people, participate

in a new cooperative lifestyle, the convenience of conducting transactions, absence of encumbrances related to cost, service, choice (Finley, 2013). The most important reasons for refusing to participate in the collaborative economy relate to the attitude toward property – individual consumers are still characterized by a lack of trust in platforms offering such goods and services (Wallenstein, Shelat, 2017). Strengthening the impact of benefits and reducing the impact of barriers requires further changes in formal and informal institutions.

Institutional environment of the collaborative economy

The institutional environment includes a set of formal and informal institutions (North, 1990). Formal institutions, as a rule, are controlled by the state; they are based on legislation established in a particular territory, officially fixed norms and rules of conduct. Informal institutions are based on deeply rooted codes of conduct, traditions, customs, sanctions and taboos. They exist independently of the state, are formed through interaction between individuals or communities (Finley, 2013).

We should note that formal institutions related to the collaborative economy and digital platforms have undoubtedly undergone significant changes over the previous decades. However, their transformation is rather slow, often not providing the current demands and opportunities of the collaborative economy. For example, in countries such as Russia, Greece, Hungary, there is no protection of the rights of consumers using digital platforms and services of the collaborative economy (Stephany, 2015). This problem reduces the demand for services in this area – lack of trust becomes one of the most important barriers to the development of the collaborative economy, as consumers need clear rules for the operation of exchange platforms supported from the outside, ensuring their safety and guaranteeing that in case of problems there are specific tools to solve them.

⁷ The Sharing Economy. Consumer Intelligence Series. PricewaterhouseCoopers LLP, 2015. Available at: <https://eco.nomia.pt/contents/documentacao/pwc-cis-sharing-economy-1-2187.pdf>

However, despite the gap in the speed of transformation of the institutional environment, as well as in the speed of formation and spread of the sharing economy, the demand for services of this activity type is growing. This is due to the changes taking place in society encouraging consumers to use the opportunities offered by the collaborative economy. Thus, informal institutions are changing faster than formal ones. Although according to the institutional economic theory it is generally assumed that the rate of transformation of informal institutions is quite low (Williamson, 2000), this thesis is not applicable to the formation of the sharing model (Helmke, Levitsky, 2004).

Thus, if the development of formal institutions lags behind the present economic processes, informal institutions are quite flexible to the current social needs and make it possible to develop collaborative economy. Informal institutions make it possible to overcome distrust of new services and types of interaction. In particular, consumers who use ratings or recommendations from friends are more likely to trust the “sharing economy” services. In addition, consumers of the services of the sharing economy platforms appreciate the principles that ensure transparency of transactions, simplicity and price competitiveness. Thus, informal arrangements replace traditional institutions and guarantee the safety of consumers.

In the article we propose an approach to the analysis of the collaborative economy taking into account both formal and informal institutions, based on the provisions of the institutional economy.

The development of the collaborative economy is associated with significant institutional changes, which can be divided into two groups. The first group includes changes in the consumers’ attitude to the ownership of goods. The second type of changes includes legal regulations designed to ensure the security of transactions on platforms, or rules voluntarily introduced by platforms to increase

transparency and user trust (Schor, Fitzmaurice, 2014). Thus, the newly created informal institutions – relations between platform users and trust in other people’s assessments – to some extent replace traditional formal regulations. Let us look at the formal and informal institutions that affect the collaborative economy in more detail.

Formal institutions

The dynamic development of the collaborative economy is an important task for states, however, as a rule, the transformation speed of legislative initiatives is often significantly lower. The key areas of necessary regulation concern:

- safety of users (for example, when traveling with Uber) and third parties (for example, accidents involving urban scooters)
- ensuring high quality of goods and services provided;
- elimination of external factors (for example, environmental pollution by rented cars);
- free-rider problem and moral risk associated with avoiding responsibility for causing damage or improper provision of services;
- level of corruption as a development factor of the platform economy and services for the sharing of goods and services.

These examples of regulation show how wide their range is and how important the problems of regulatory authorities are. In addition, the platforms are trying to influence the form of regulations introduced by the state.

It is also worth emphasizing that formal rules encourage the development of the collaborative economy. An analysis of the Timbro Sharing Economy Index shows that the collaborative economy is better developed in countries with greater economic freedom (Bergh et al., 2018).

At the same time, digital platforms, and hence services of the collaborative economy, operate in an external environment conditioned by formal norms and rules.

The analysis presented above shows that the collaborative economy can be developed when the principle of openness and mutual cooperation is implemented in a formal institutional environment. This was reflected in the following hypotheses:

H1. The absence of corruption in the country has a positive impact on the development of digital platforms.

H2. The openness of government organizations and the transparency of their activities have a positive impact on the development of digital platforms.

Informal institutions

On the one hand, changes in informal institutions are associated with a change in the social attitude to the popularization of the collaborative economy and the strengthening of trust in it. The generation born after the 1980s has developed a new approach to ownership, convenience of consumption, as well as the use of technology or reliance on recommendations. For this generation, the statement “You are what you own” changes to “you are what you share” (Belk, 2014). PWC (2015) points to a new attitude toward property, as 43% of respondents in the U.S. perceive it as a burden, and 57% consider access to be a new type of property. Moreover, 81% of respondents noted that it is cheaper to share goods than to own them. Thus, consumers notice the benefits of sharing and become more aware of the advantages and disadvantages of various ownership forms⁸.

On the other hand, the collaborative economy is based on building relationships between dispersed groups of suppliers and consumers. This requires the creation of direct relations between the subjects, the restriction of anonymity, the adoption of procedures for verifying trustworthiness. Building relationships with formal and informal groups promotes trust,

while societies with a higher level of trust are less dependent on formal institutions for compliance with agreements. For representatives of these groups there is no need for personal acquaintance – it is enough that they are members of the same community of people using this platform. Thus, the general level of trust in society and the connections within it have an impact on the economic behavior of subjects.

Research in the field of social capital is closely related to the topic of trust and informal institutions. Social capital is usually interpreted as a degree of trust, norms of cooperation and associative membership or networks in society (Curtis, Lehner, 2019). Interest in this topic has grown thanks to the research of sociologist J. Coleman (Coleman, 1988) and political scientist R. Putnam (Putnam, 1993).

The research results on social capital show that individuals are more likely to trust people with qualities and characteristics inherent in themselves. However, a high reputation on the platform becomes more important than a high similarity, which allows overcoming even deep-rooted prejudices. Currently, almost every platform is trying to convince its users that it actively cares about ensuring security. For example, Uber has created an “Uber community guidelines” designed to improve safety.

High ratings and trust are crucial for the prosperity of suppliers of goods and services. The breakthrough for the Alibaba platform was the introduction of the so-called “trust pass”, i.e. a certificate for sellers that confirmed their trustworthiness. Sellers with such a certificate received an average of 6 times more orders than unregistered ones. Research for eBay also confirms the importance of reputation. The seller who received a negative comment lost an average of 8% of weekly sales. Thus, reputation has a measurable financial impact. In addition, one negative comment increases the risk of further negative

⁸ The Sharing Economy. Consumer Intelligence Series. PricewaterhouseCoopers LLP, 2015. Available at: <https://eco.nomia.pt/contents/documentacao/pwc-cis-sharing-economy-1-2187.pdf>

opinions by 25%⁹. According to 2020 data, 99% of transactions on Swaptree are successful, and only 1% receive negative comments, mainly for trivial reasons, such as delayed delivery (Georgoula, Skoultos, 2020).

To increase the value of rating systems, models are introduced to assess their reliability, checking the quality of comments left. An example of a rating system evaluation project is “Trustmark”, launched in 2015. This is a top-down project presented by the UK authorities, which became the first country to recognize that consumers should be helped to assess the reliability of exchange platforms and their applications (Möhlmann, 2015). Similar initiatives are being taken by private companies such as Traity and TrustCloud. They allow aggregating information from different platforms, social networks and build the reputation of users based on them. This makes it possible to apply information from one platform to another, which is important for a consumer who starts using a new service without a transaction history or user ratings. The information that users leave during online transactions allows detecting certain behaviors, for example, evaluating behavior on social networks, in particular responsibility or predictability, and linking it to ratings on different platforms.

In order to further model the impact of the informal institutional environment on the organization of the platform economy and the collaborative economy, we have formulated the following hypotheses:

H3. The development of digital platforms and the collaborative economy is positively influenced by the level of trust within societies and their social ties.

H4. The level of trust in institutions has a positive impact on the development of the collaborative economy.

⁹ Chappelow J. (2020). Sharing Economy. Available at: <https://www.investopedia.com/terms/s/sharing-economy.asp>

Research methodology

Due to the fact that the collaborative economy model is developing mainly in large cities, we use two levels of observations for this study: countries and cities. In the case of the development of the digital platforms, we have investigated the cross-country level. To test the hypotheses, we have used data for 2020 from the digital platform development report – Digital Platform Development Report, calculated by the Global Entrepreneurship and Development Institute¹⁰. The use of big data, new algorithms and cloud computing creates a global digital platform of an economy built around platform companies. The Digital Platform Economics Index (DPE Index) combines two separate but related databases on digital and entrepreneurial ecosystems. The new framework looks at digital entrepreneurship in a broader context.

For another dependent variable – development rate of the collaborative economy – we have used data from the IMD-SUTD Smart City Index for 2021¹¹. The index focuses on how residents perceive the effectiveness of efforts aimed at making their cities “smart”, and includes a survey of citizens about their satisfaction with various services including those related to the collaborative economy (car sharing, bike rental), as well as websites or applications that allow residents to distribute unnecessary things.

For 2020, we use data from the WJP Rule of Law Index as independent variables to test hypothesis 1 at the intercountry level¹². The index characterizes the development rate of the rule by law in 139 countries and jurisdictions providing

¹⁰ Digital Platform Economy Index, 2020. Available at: <https://thegeedi.org/wp-content/uploads/2020/12/DPE-2020-Report-Final.pdf>

¹¹ IMD-SUTD Smart City Index (SCI), 2021. Available at: <https://www.planbe.com.gr/news/smart-city-index-2021>

¹² WJP Rule of Law Index, 2020. Available at: <https://worldjusticeproject.org/rule-of-law-index/global/2021/table>

assessments and ratings based on eight factors: limitations of government powers; absence of corruption; openness of government; fundamental rights; order and security; regulatory enforcement; civil justice; criminal justice.

Representatives of more than 138,000 households, including 4,200 practicing lawyers and experts from around the world, were interviewed to obtain points and ratings in the WJP 2020 Rule of Law Index. This index is the most comprehensive data set of its kind in the world and the only one that mainly relies on primary data including the points of view and experience of civil society.

We use Edelman Trust Barometer of 2021, conducted annually and displaying the level of trust in business, nonprofit organizations, government, and media (X_3), as independent variables at the intercountry level. In addition, the report calculates the arithmetic mean among the indicators in different countries. As part of the study, we use this indicator as an indicator of the level of trust in formal institutions¹³.

To test hypothesis 3 on the impact of the informal institutional environment on the platform economy and the collaborative economy, we use the Social Capital Index¹⁴ for 2020 (X_4). The social capital of a country is the sum of social stability and well-being of the entire population (perceived or real). Social capital creates social cohesion and a certain level of consensus, which, in turn, provides a stable environment for the economy and prevents excessive exploitation of natural resources (Georgoula, Skoultzos, 2020).

In addition to local historical and cultural influences, social consensus is influenced by several factors: health systems and their accessibility (measuring physical health); equality

of income and assets that correlate with crime rates; demographic structure (to assess the future balance of generations in society); freedom of expression, absence of fear and violent conflicts. Only in these conditions can the economy flourish, create additional value, jobs and ensure the incomes growth.

As a result of using the available statistical data, we have obtained 26 observations. During the analysis, we have considered such countries as Russia, Korea, Ireland, Spain, Turkey, Japan, UK, UAE, Germany, Australia, France, Italy, Canada, Singapore, Argentina, Brazil, Malaysia, USA, the Netherlands, South Africa, Colombia, Mexico, Saudi Arabia, India, Indonesia, China and their capitals.

We use the following variables to test the formulated hypotheses and further simulate the impact of the formal and informal institutional environment on the development of digital platforms and the collaborative economy:

Y_1 – digital platforms development index in the world countries;

Y_2 – level of carsharing development in the city, expressed by an indicator characterizing citizens; agreement that “carsharing applications have reduced congestion”;

X_1 – index based on population survey and showing agreement that there is no corruption in the country;

X_2 – index based on population survey and showing agreement that the openness of state institutions is observed in the country;

X_3 – social capital development index in the country;

X_4 – index of public confidence in formal institutions (general indicator).

When constructing the model, we have made a preliminary analysis of the initial statistical data, as a result of which we identified the most appropriate type of functional dependence between the economic processes under consideration. At the

¹³ Edelman Trust Barometer, 2021. Available at: <https://www.edelman.com/trust/2021-trust-barometer>

¹⁴ Solability Social Capital Index, 2020. Available at: <https://solability.com/global-sustainable-competitiveness-index/the-social-capital-index>

second stage, we have carried out a correlation analysis of the studied factors, which made it possible to determine whether there are factors in the model that form such a negative phenomenon as multicollinearity.

At the third stage, we directly constructed multifactor models; at the fourth stage, we conducted a study of the quality of the constructed models. The fifth stage included checking and eliminating the autocorrelation of residues in the model. At the stages of data processing, we used Python software product.

Research results

As the research result, we have constructed two models reflecting the influence of the formal and informal institutional environment on the development of digital platforms and the sharing economy.

At the initial stage of data analysis, we revealed that the distribution of random variables by the tested factors and the dependent variable Y1 is linear in both models. As a result of the analysis of the matrix of pairwise correlations, we have found that there is no multicollinearity in the model (*Table*);

Correlation matrix

	Y1	X1	X2
Y1	1	0.80	0.75
X1	0.81	1	0.44
X2	0.75	0.44	1
Df Residuals:	1	0.80	0.75
Source: own compilation.			

Figure 1. Regression analysis results

OLS Regression Results						
Dep. Variable:	DP	Risquared:	0.835			
Model:	OLS	Adj. Risquared:	0.820			
Method:	Least Squares	Fi statistic:	58.13			
No. Observations:	26	Prob (Fi statistic):	1.01ei 09			
Df Residuals:			91.483			
			23			
Logi Likelihood:						
Df Model:	2	AIC:	189.0			
Covariance Type:	nonrobust	BIC:	192.7			
	coef	std err	t	P> t	[0.025	0.975]
const	35.0710	8.097	4.331	0.000	i 51.821	18.321
X1	65.1050	10.491	6.206	0.000	43.403	86.807
X2	65.4636	12.852	5.094	0.000	38.877	92.050
Omnibus:	2.977	Durbini Watson:	1.563			
Prob(Omnibus):	0.226	Jarquei Bera (JB):	2.084			
Skew:	0.693	Prob(JB):	0.353			
Kurtosis:	3.015	Cond. No.	11.7			

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Source: own compilation.

Figure 2. Results of regression analysis between service of the collaborative economy and social capital index

OLS Regression Results						
Dep. Variable:	DP		R-squared:	0.385		
Model:	OLS		Adj. R-squared:	0.359		
Method:	Least Squares		F-statistic:	15.03		
No. Observations:	26		Prob (F-statistic):	0.000720		
Df Residuals:	24		Log-Likelihood:	-108.57		
			AIC:	221.1		
			BIC:	223.7		
	coef	std err	t	P> t	[0.025	0.975]
const	-23.5913	18.865	-1.251	0.223	-62.526	15.344
X3	1.4911	0.385	3.876	0.001	0.697	2.285
Omnibus:	9.712	Durbin-Watson:	0.320			
Prob(Omnibus):	0.008	Jarque-Bera (JB):	7.835			
Skew:	1.186	Prob(JB):	0.0199			
Kurtosis:	4.269	Cond. No.	288.			

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Source: own compilation.

then we have determined the dependence of the development rate of digital platforms on factors X_1 and X_2 .

Figure 1 presents the results of the regression analysis.

As a result, we have obtained the following model:

$$Y_1 = -35.07 + X_1 \times 65.1 + X_2 \times 65.46. \quad (1)$$

Testing the hypothesis about the impact of the social development index led to the following results (Fig. 2).

As a result, we have built the following model:

$$Y_2 = -23.59 + X_3 \times 1.49. \quad (2)$$

At the next stage, we have carried out an assessment of the adequacy and reliability of the results obtained. The significance of the determination coefficients in the first model prob (F-statistical = 1.01e-09) and prob (F-statistical

= 0.000720) allows concluding that the model as a whole is reliable, and also confirms the representativeness of the sample. The coefficients of determination indicate that the variations in the indicators of the development of digital entrepreneurship platforms by about 83 and 38% depend on the indicators selected at the modeling stage of the matrix of paired correlation coefficients. Checking the null hypotheses of the insignificance of regression coefficients indicates that the selected factors do have an impact; their regression coefficients are statistically reliable and significant. The value of the F-criterion and the significance level of p demonstrate that the constructed model is significant at the significance level of $\alpha = 0.05$. The Darbin – Watson test, used to control models for the presence of autocorrelation of residues, has proved that there is no dependence between the residues, they are randomly distributed and range from 0 to 4.

Also, we have tested the models for heteroskedasticity by visual analysis of the residue graph. There are no signs of instability of variance and dependence of residuals, the model is homoscedastic.

Thus, with the help of quality control, we have concluded that the models are reliable; we have confirmed the influence of factors of the formal and informal institutional environment on the development of digital platforms. We have confirmed Hypotheses H1 and H2. The H3 hypothesis is confirmed for the collaborative economy when considering the impact of carsharing on traffic congestion. We refuted the H4 hypothesis at the stage of correlation analysis.

Discussion of the results

As a result of the analysis, we have proved that the nature of the influence of the formal and informal institutional environment on the development of digital platforms and the collaborative economy differs. For instance, the platform economy is more influenced by the formal environment, in particular the level of corruption and the openness of state institutions, which may be due to significant efforts for business in organizing enterprises based on the platform economy. However, formal institutions are less essential for the development of the collaborative economy, which can be explained by the more significant influence of institutions that relate directly to companies using the collaborative economy model. Thus, trust in platforms becomes a decisive factor for the development of the sharing economy. Based on their knowledge, the platforms use applicable institutional solutions and implement user assessment systems, in this way ensuring the anonymity of users.

At the same time, formal and informal institutions are interconnected; the interaction between them is complex. Both types of institutions

may be associated with the same field, and their overall influence increases, or, conversely, institutions may be inconsistent and function in opposition to each other. Informal institutions can fill gaps in formal institutions, modify existing formal institutions, or lead to new solutions. Despite the fact that informal norms and rules fill the emerging gaps of absent or weak formal institutions, they cannot completely solve the problems with the presence of institutional dysfunctions, especially in conditions of changing economic processes (Eggertsson, 2006).

Due to the variability of organizations, related to the platform economy, consideration of the diversity of formal institutions is difficult. However, in the case of the platform economy and the collaborative economy, other factors influencing the development of these types of activities are equally important including rating systems that help to strengthen trust between the entities carrying out transactions and support informal institutions. Thus, users of the platforms gain confidence in other entities with whom they can agree on the terms of transactions. Consequently, the absence of formal institutions can be replaced by the development of informal ones.

When comparing the results obtained with the conclusions of the previous studies, we should turn to the work (Helmke, Levitsky, 2004). The authors consider the convergence of formal and informal institutions and their effectiveness. If following formal and informal institutions yields the same results, they are considered convergent. If the results are different, then this interaction is divergent. Formal institutions are effective in situations where there is an effective enforcement mechanism, otherwise formal institutions are ineffective. In addition, formal and informal institutions are complementary if they lead to the same results, while formal institutions are effective, and

informal ones fill any gaps in formal institutions and enhance their effectiveness (for example, a developed legal system in society). In the case of adaptive institutions, formal rules are also effective, but following informal institutions does not lead to the same results. Informal institutions encourage behavior that differs from the formally accepted one, although they do not directly violate the rules. Institutions compete when informal institutions produce results that differ from inefficient formal institutions. In this regard, informal institutions compete with formal ones and create a kind of alternative rules. Institutions are substitutive when convergent informal institutions coexist with inefficient formal institutions. In this situation, despite the fact that organizations violate formal rules, the goals can be achieved. Thus, informal institutions are able to achieve the results expected from formal institutions. In addition, informal institutions contribute to the development of appropriate formal institutions (for example, in countries with weak State structures). Important observations on the role of informal institutions can be found in E. Ostrom (Ostrom, 1990). According to the researcher, solutions created by communities are in some cases more effective than exogenous rules. At the same time, it is impossible to create such rules without favorable conditions provided by informal institutions, such as trust, willingness to cooperate, and positive attitude to exchange.

With regard to the development of institutions that affect the collaborative economy, it is worth noting the expectations in the field of gradually building convergent formal and informal institutions. However, at this stage of the development of the platform economy and the collaborative economy, this conclusion has no unambiguous confirmation, since no direct influence of formal institutions on services of the collaborative economy has been revealed. At the same time, the links between formal institutions and

the development of digital platforms are still found, which is due to the current adaptation of market processes to the spread of digital platforms, and the institutional environment to the introduction of more effective and popular forms of interaction between economic agents. Thus, at the current stage of ESP development in traditional market processes, we can talk more about the presence of substitute and adaptive institutions.

Moreover, the results show that the working out of the platform economy and the collaborative economy is closely correlated with the development of inclusive institutions, which, among other things, are usually associated with a reduction in transaction costs (Auzan, 2019). The effectiveness of inclusive institutions for the development of the economy and society is shown in the work (Acemoglu et al., 2003). This type of institution is closely related to “open access orders” (North et al., 2009). This allows each member of society to participate in solving political and economic problems, which creates favorable economic and political incentives for the development of innovation and the rule by law leading, in turn, to economic growth. The inclusiveness of institutions in this context will be characterized by the implementation of the principle of openness of public administration, as well as the creation of a favorable environment based on the principles of cooperation and trust.

Conclusion

In a study conducted to model the impact of formal and informal institutional environment on the development of the platform economy and the collaborative economy in the global space, we have obtained the following results.

First, we have revealed the connection between the platform economy and the collaborative economy. The research shows that the collaborative economy is part of the platform economy because it uses its resources. At the same time, the collaborative economy has goals that go beyond

the framework of the platform economy, such as efficient allocation of resources and reduction of environmental pollution.

Second, when analyzing the impact of the formal institutional environment on the platform economy and the collaborative economy, we have constructed a linear multifactorial model demonstrating the most significant influence of factors such as low corruption and openness of public administration.

Third, when analyzing the impact of the informal institutional environment on the platform economy and the collaborative economy a one-factor linear model is constructed that demonstrates the impact of the level of social capital development

on the development of services of the collaborative economy.

The theoretical significance of the presented research is to confirm the importance of inclusive formal institutions for the development of digital platforms. At the same time, the institutional environment of the collaborative economy is still being formed. In the current period of its development, social capital has a special influence on it.

The presented research results can be used to build an effective institutional environment that allows developing the potential of the digital platforms and the collaborative economy to solve socially significant tasks.

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Received August 25, 2022.

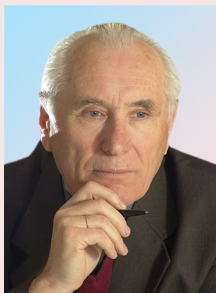
ACADEMIC LIFE

DOI: 10.15838/esc.2022.5.83.15

UDC 347.77; LBC 67.404.3

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Intellectual Property Protection and Technology Transfer in the Activities of the International Association of the Academies of Sciences and the Inter-Academy Council on the Development of the Union State



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Abstract. The article considers history of establishment and activities of the International Association of the Academies of Sciences (IAAS) and the system of scientific councils created within it. Institutional features of IAAS scientific councils are shown on the example of the Scientific Council on Protection of Intellectual Property and Technology Transfer, which plays a crucial part in the successful implementation of scientific potential of the academies of sciences and other departmental organizations (research foundations, universities, international research centers) included in the association. We show how the content of the concepts “mission of the organization” and “vision of the organization” has been transformed with regard to the activities of the Scientific Council. We analyze the topics of scientific

For citation: Vitiaz P.A., Shcherbin V.K. (2022). Intellectual property protection and technology transfer in the activities of the International Association of the Academies of Sciences and the Inter-Academy Council on the Development of the Union State. *Economic and Social Changes: Facts, Trends, Forecast*, 15(5), 274–289. DOI: 10.15838/esc.2022.5.83.15

reports, which are traditionally presented at meetings of the Scientific Council by its members and invited speakers (using the example of the reports made at the last meeting of the Scientific Council, which took place during the First Congress of the Scientific Councils of the IAAS in November 2021). We also consider integration initiatives of the Inter-Academy Council on the Development of the Union State (developing general conditions for intellectual property turnover within the framework of single innovation space, creating institutional structures oriented toward integration, etc.). We substantiate the conclusion about the paramount importance of intellectual property protection and technology transfer for further development of international scientific cooperation within the IAAS and the Inter-Academy Council on the Development of the Union State.

Key words: intellectual property, commercialization of science, International Association of the Academies of Sciences, Inter-Academy Council on the Development of the Union State, scientific and technological consortium, scientific council, technology transfer.

Activity of any international structure is initially governed by appropriate organizational and technical, and regulatory legal acts. The legal basis for/of the activities of International Association of the Academies of Sciences (hereinafter – IAAS) at the time of its establishment were the following documents:

1) “Agreement establishing International Association of the Academies of Sciences” (1993), according to which the IAAS included “the academies of sciences of the Republic of Azerbaijan, the Republic of Armenia, the Republic of Belarus, the Socialist Republic of Vietnam, the Republic of Georgia, the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Moldova, the Russian Federation, Slovakia, the Republic of Tajikistan, Turkmenistan, Ukraine, Republic of Uzbekistan, and the Czech Republic”¹. However, “the Slovak Academy of Sciences and the Czech Academy of Sciences participate as observers”². Later, quite impressive quantitative and qualitative composition of the IAAS was expanded by the following fully-fledged members: Chinese Academy of Sciences

(2018), Montenegrin Academy of Sciences and Arts (2018), Mongolian Academy of Sciences (2019)³. Moreover, as a result of the creation of the IAAS Institute of Associate Members, the association includes such well-known and credible organizations in the scientific world as the Joint Institute for Nuclear Research (1997), Russian Foundation for Basic Research (1999), Moscow Institute of Physics and Technology (state university) (2000), Lomonosov Moscow State University (2002), National Research Centre “Kurchatov Institute” (2009), which in 2020 became full-fledged members of the IAAS. It also includes organizations that still have the status of associate members of the IAAS, such as the Russian Humanities Research Foundation (1999), Belarusian Republican Foundation for Fundamental Research (2000), National Academy of Agrarian Sciences of Ukraine (2018); Jiangxi Academy of Sciences (2018); Heilongjiang Academy of Sciences (2019), Shandong Academy of Sciences (2019) became members of the association⁴;

¹ Agreement establishing International Association of the Academies of Sciences (2008). In: *International Association of the Academies of Sciences: Fifteen years of activity*. Kyiv: Akademperiodika.

² Ibidem.

³ Gusakov V.G. (2021). *International Association of the Academies of Sciences*. Minsk: Belaruskaya navuka.

⁴ Ibidem.

2) Ukraine Presidential Decree “On the International Association of Academies of Sciences” (1994), which declared:

“1. To recognize the International Association of Academies of Sciences as an international non-governmental self-regulatory organization.

The International Association of Academies of Sciences is a legal entity and carries out its activities on the territory of Ukraine in accordance with the legislation of Ukraine.

2. To support the founders’ initiative of the International Association of Academies of Sciences on location of the headquarters of this association in the city of Kyiv”⁵.

Already in the early years, the IAAS fully met the expectations of academic scholars of the CIS countries. As the President of the Republic of Belarus A.G. Lukashenko rightly noted in his greeting to the International Association of Academies of Sciences on the occasion of its 5-year anniversary, “life has shown that the unification of the CIS national academies of sciences into the Association was a logical response of scientists to the dramatic events that led to the dissolution of the Soviet Union, the winding up of joint basic research and traditional ties between scientific teams... In a short period of time, the IAAS has established itself as an authoritative structure that has made a number of valuable and constructive proposals for the consideration of the heads of state and government of the CIS countries. This has largely focused attention on improving the situation of the scientific sphere and scientists, and has contributed to solving the problems of the functioning of science in the independent states of the Commonwealth”⁶.

⁵ Documents defining the activities of the International Association of Academies of Sciences (1998). In: Shpak A.P. (Ed.). *International Association of Academies of Sciences and the Development of Science Integration*. Kyiv: Naukova dumka.

⁶ Greeting of the President of the Republic of Belarus A.G. Lukashenko to the International Association of Academies of Sciences (1998). In: Shpak A.P. (Ed.). *International Association of Academies of Sciences and the Development of Science Integration*. Kyiv: Naukova dumka.

Formation of the System of Scientific Councils of the IAAS

At the same time, from the very beginning of the IAAS activity it became obvious that in addition to the abovementioned fundamental documents to solve the problem of successful scientific integration of numerous and quite different in organizational terms national academic and other departmental organizations associated with the IAAS in the post-Soviet space it is necessary to have international scientific councils on various problems and branches of knowledge constantly working at the IAAS. The first such scientific council (the Scientific Council for New Materials) was created on the initiative of academicians of the National Academy of Sciences of Ukraine and the Russian Academy of Sciences B.E. Paton in 1995 at the National Academy of Sciences of Ukraine. The effectiveness of the first scientific council can be judged at least by the fact that to date its leadership has held more than two dozen sessions of the council, at which about a hundred problematic scientific reports on materials science were heard and discussed in detail⁷. Other scientific councils were soon established within the IAAS: Joint Scientific Council on Fundamental Geographical Problems (1995), Council of Directors of Scientific Libraries and Information Centers of National Academies of Sciences (1996), Consultative Council on Intellectual Property Protection and Technology Transfer (1997), International Coordinating Committee on Computational Mathematics (1998), Scientific Advisory Council on Scientific Support of Joint Works on Chernobyl (2000), Union of Physiological Societies of CIS Countries (2003) and other proactive structures of scientific advisory.

⁷ Shcherbin V.K. (2018). Activities and prospects for the development of the IAAS Scientific Councils. In: Gusakov V.G. (Ed.). *International Cooperation of Academies of Sciences. 25 years*. Minsk: Belaruskaya navuka.

The practice of creating scientific councils within the framework of the IAAS received a boost after academician V.G. Gusakov was elected head of the IAAS and the city of Minsk was chosen as the headquarters of the association. Currently, the system of scientific councils of the IAAS counts 24 councils⁸, and the method of naming has been unified: the vast majority of them are called “scientific council”. Since the activities of the IAAS Scientific Councils is the main organizational form of uniting the efforts of scientists working in specific fields of science, let us try to reveal the most typical institutional moments in the activity of such councils on the example of the IAAS Scientific Council on Intellectual Property Protection and Technology Transfer, which has been successfully functioning for a quarter of a century.

Activities of the IAAS Scientific Council on Intellectual Property Protection and Technology Transfer (1997–2022)

Among the first international scientific councils the Advisory Board on Intellectual Property Protection and Technology Transfer at the IAAS⁹ was created by the of the IAAS Council Decision 57, dated December 19, 1997, since, as it was reasonably believed, its activities were the most conducive to solving the problems of commercialization of research findings of academic science.

A year later, the IAAS Council Decision 74, dated December 2, 1998 approved the composition of the Advisory Board, appointed its chairperson (Academician of the NAS of Ukraine A.P. Shpak), and approved the Regulations on the Advisory Board, which works on the basis of the NAS of Ukraine. The original composition of the Advisory Council included such famous scientists from the

academies of sciences – members of the IAAS, as Academician of the NAS of Belarus P.A. Vityaz, Academician of the RAS E.M. Dianov, Academician of the Academy of Sciences of the Republic of Kazakhstan S.Z. Zimanov, Academician of the Academy of Sciences of Azerbaijan M.I. Rustamov, Academician of the NAS of the Kyrgyz Republic K.S. Sulaimankulov, Academician of the Academy of Sciences of Turkmenistan H.N. Ernepessov, and other well-known specialists in the field of intellectual property protection and technology transfer¹⁰.

The main objectives of the Advisory Board were defined as “study and dissemination of experience of protection and practical use of intellectual property in the CIS countries, preparation of proposals for improvement of international and internal (national) technology transfer, provision of methodological and expert assistance in concluding contracts for technology transfer”¹¹. After the establishment of the Advisory Board within the IAAS, the development of the above issues of intellectual property protection and technology transfer in the academies of sciences – members of the IAAS intensified dramatically: “From 2000 to 2003, meetings of this Board were held in Kyiv at international workshops for scientists and specialists of CIS countries on intellectual property protection, which were organized jointly by the World Intellectual Property Organization, IAAS, NAS of Ukraine and the State Department of Intellectual Property of the Ministry of Education and Science of Ukraine. It is important that experts from Germany, France, Switzerland, and a number of other countries also took part in these seminars”¹².

⁸ For a full list of the scientific councils of the IAAS see: Scientific Councils of the International Association of Academies of Sciences (2021). International Association of Academies of Sciences. Gusakov V.G. (Ed.). Minsk: Belaruskaya navuka.

⁹ On the Advisory Board on Intellectual Property Protection and Technology Transfer: IAAS Council Decision 57, dated December 19, 1997. *IAAS Bulletin 15*. 1998.

¹⁰ Appendix 1 to the IAAS Council Decision 74, dated December 2, 1998. *IAAS Bulletin 18*. Kyiv, 1999.

¹¹ Appendix 2 to the to the IAAS Council Decision 74, dated December 2, 1998. *IAAS Bulletin 18*. Kyiv, 1999.

¹² Shpak A.P. (2008). International Association of Academies of Sciences. 15 years of activity. Kyiv: Akadempriodika Publishing House of the National Academy of Sciences of Ukraine.

Through the efforts of the members of the Advisory Council, a number of fundamental scientific works and legal and regulatory compilations have been published on the profile of its activities. They include the following publications:

Kapitsa Yu.M. (2000). Export-import of technology: Legal regulation. Kyiv.

Kapitsa Yu.M. (2002). Technology Transfer: Contracting and Marketing. In: Proceedings of the IV International Seminar. Kyiv.

Нормативні акти з питань охорони інтелектуальної власності та трансферу. Київ, 2008. 130 с.

Матеріали міжнародного семінару «Ліцензійні договори та договори про передачу прав інтелектуальної власності в Європейському Союзі та Україні: правове регулювання та практика» (Київ, 22–24 листопада 2010 р.). Київ, 2010. 203 с.

Капіца Ю.М. та ін. Трансфер технологій та охорона інтелектуальної власності в наукових установах: монографія. Київ, 2015. 431 с.

At the same time, according to academician of the NAS of Belarus P.A. Vityaz, who has been a member of the Advisory Board since its creation, “in recent years, there has been a certain decline in the activities of the Advisory Board, which became especially noticeable after the untimely death of the chairperson of the Advisory Board, academician A.P. Shpak”¹³. The decline was also noted in the IAAS Council Decision 247, dated June 3, 2015, which cited the following as its main reason: “The composition of the Advisory Board has not been renewed for a long time, and its

¹³ Vityaz P.A. (2017). Activities of the Advisory Board on Intellectual Property Protection and Technology Transfer at the International Association of Academies of Sciences on the organization of scientific and technological cooperation of academies of sciences – members of the IAAS. *International and National Scientific Organizations as a Factor in the Formation of the Global Scientific Community: Proceedings of an International Symposium (Kyiv, May 15–17, 2017)*. Kyiv: Nash format. Pp. 74–75.

work requires significant revitalization”¹⁴. Based on the IAAS Council Decision 247, the Advisory Board was reshaped (A.P. Shpak, T.F. Bekmuratov, I.N. Ganiev, V.C. Gnuni, D.I. Dzhaparidze, E.M. Dianov, S.Z. Zimanov, S.G. Kanzer, Mai Ha, P.G. Nikitenko V.F. Rudik, M.I. Rustamov, A.B. Sadykhov, K.S. Sulaimankulov, F.T. Takirov and Kh.N. Ernepesov were removed from the Council; Academician of RAS S.M. Aldoshin, Academician of NAS of Ukraine V.L. Bogdanov, Academician of NAS of the Kyrgyz Republic A.A. Borubaev, Academician of the NAS of Azerbaijan I.S. Guliev, director general of the Agency for Innovation and Technology Transfer of the Academy of Sciences of Moldova R.S. Kirke, Corresponding Member of the NAS of Kazakhstan T.K. Kulazhanov, Academician of the Academy of Sciences of Tajikistan A.S. Saidov, Academician of the Academy of Sciences of Georgia A.N. Silagadze, Academician of RAS G.V. Trubnikov, Doctor of Sciences (Engineering) Y.I. Shtrombakh, Academician of NAS of Armenia Y.G. Shukuryan, Candidate of Sciences (Philology) V.K. Shcherbin (Academic Secretary of the Advisory Council) were first made members of the Council; a new chairperson of the Advisory Council has been appointed (Academician of the NAS of Belarus P.A. Vityaz), and the organizational and technical support of the Advisory Council is entrusted to the National Academy of Sciences of Belarus.

From the article of the new chairperson of the Advisory Board, academician of the National Academy of Sciences of Belarus P.A. Vityaz, it follows that “the new members of the Advisory Board are actively involved in the work, having begun their work by refining the text of the

¹⁴ On the Advisory Board on Intellectual Property Protection and Technology Transfer: Decree 247 of the IAAS Board, dated June 3, 2015. Resolutions of the IAAS Board. Available at: www.iaas.nas.gov.ua/resolutions/pages/default.aspx

Regulations on the Advisory Board¹⁵ and developing the Work Plan of the Advisory Board for 2015–2016. At the same time, the new leadership of the Advisory Board was fully aware that the decisions of the IAAS Board on the renewal of the membership of the Advisory Board and the change of its leadership and location would not automatically lead to an increase in its activities. This will only happen if all of the activities of the new Advisory Board are brought into line with the changed conditions of our member academies of science – IAAS members. Today they are entering the era of the global knowledge economy, like the national economic complexes of our countries as a whole”¹⁶. This means that the Advisory Board had to fundamentally reconsider its strategy by clarifying and specifying the content of the concepts of the **organization’s mission and vision** in relation to the current state of its activities.

In the above-mentioned article by Academician of the NAS of Belarus P. A. Vityaz, the process of clarifying the mission of the Advisory Board and the vision of organization of its work is described as follows: “How can we boost the activity of the Advisory Board, thereby increasing its importance as one of the problem boards at the IAAS, in these challenging conditions? In our opinion, it is possible to make adjustments to the strategy of the Advisory Board, to specify the content of the concepts of the **organization’s mission and the vision of the organization** in relation to the current state of its activities. Let us begin with the concept of

the **organization’s mission**. In the existing reference literature, it is interpreted in different ways, but for our case the following definitions of this concept are of particular interest:

- it is “a purpose, a long-term goal, an idea, ... the role of an entity. ...Mission is a statement that reflects the interests of society, the owners and staff of the enterprise, giving an idea of the scope of activities, general principles of work, etc. The mission of an organization is where the process of goal-setting itself begins. There is one rule: no goal in an organization should conflict with the organization’s mission. ...a good mission is a thing of paramount importance, and this importance is constantly increasing. Management theory and practice have not developed a unified approach to the rules of mission development. However, there are a number of recommendations that follow from the general requirements of practice: 1) the mission is timeless, i.e. it is formed with the open-ended time frame; 2) the mission should not depend entirely on the current state of affairs and the state of the organization; 3) it is not customary for the mission to state profit as the main goal or to limit the system of goals to the needs of the organization’s management; 4) there should be no contradictions between the organization’s mission, its goals and the missions of its units”¹⁷;

- it is “a goal that causes members of an organization to feel a state of aspiration toward something. Mission formation is the answer to the question: Why does an organization (or person) do what it (or they) does? It is more than defining an organization’s role. The mission informs the members of the organization what society expects of the organization and what the organization expects of its members”¹⁸.

¹⁵ This refined Regulation on the Advisory Board was soon approved by the resolution of the IAAS Board 257, dated October 20, 2015 “On the Advisory Board on Intellectual Property Protection and Technology Transfer” (Appendix 1).

¹⁶ Vityaz P.A. (2017). Activities of the Advisory Board on Intellectual Property Protection and Technology Transfer at the International Association of Academies of Sciences on the organization of scientific and technological cooperation of academies of sciences – members of the IAAS. In: *International and National Scientific Organizations as a Factor in the Formation of the Global Scientific Community: Proceedings of an International Symposium (Kyiv, May 15–17, 2017)*. Kyiv: Nash format.

¹⁷ Kas’yanov A.A. (2007). *Dictionary of the Manager (Basic Managerial Concepts in State, Socio-Economic and Political Life)*. Rostov-on-Don: Rostizdat.

¹⁸ Kandybovich L.A., Mudrik A.V. (2010). *Knowledge Management: Terminological Dictionary Book*. Minsk.

If we take into account the contents of the above definitions of the **organization's mission** and turn to the formulation of the mission of our Advisory Board (“study and dissemination of experience in protection and practical use of intellectual property in the CIS countries, preparation of proposals on improvement of international and internal (national) technology transfer, rendering methodological and expert assistance in concluding contracts on technology transfer”¹⁹), then the first part of this formulation is immediately evident. On the one hand, the excessive globality of the first part of this wording (“study and dissemination of experience in protection and practical use of intellectual property in the CIS countries”) is immediately striking. Why then do we need all the other interstate, state, industry, private and public structures that regulate the protection of intellectual property and technology transfer in the post-Soviet space? At the same time, the noted globality of the Advisory Council's mission is not supported organizationally or economically. On the other hand, the excessive utilitarianism of the second part of the wording (“preparation of proposals for improving international and internal (national) technology transfer, provision of methodological and expert assistance in concluding contracts for technology transfer”) becomes obvious. Such utilitarianism necessarily implies painstaking and daily work of the members of the Advisory Council to solve the constantly arising practical problems in the field of intellectual property protection and technology transfer in various CIS countries, which in fact cannot be the case in the activities of the Advisory Council, which meets at best once a year. Therefore, the leadership of the Advisory Board proposed a new formulation of the mission: **“to analyze the findings on intellectual property**

protection and technology transfer, to familiarize the governments and the public of the post-Soviet countries with the results of such analysis”.

In turn, the concept of **organization's vision** is explained in the existing reference literature as follows: it is “how we want to see our organization in 10–20 years. This vision may be completely unrelated to the current state of the organization. In order to formulate a vision, we need to ask ourselves the following questions: What do we want our organization to be in the future? What is our business now and what will it be like in the future? Who are the consumers of our products (services) and which group of customers will the organization focus on in the future? In what ways are we going to add value to our products for consumers?”²⁰

Taking into account the above issues related to the vision of the organization, the list of tasks solved by the Advisory Board, the new leadership of the Advisory Board was proposed to be significantly reduced, leaving as the main tasks the following:

1. Organization of joint research in the field of protection and commercialization of intellectual property, international and internal technology transfer.
2. Preparation of analytical reports on intellectual property protection and technology transfer for the IAAS Board and governing bodies of CIS countries.
3. Preparation of joint scientific and reference publications on intellectual property protection and technology transfer.
4. Cooperation with national, international and intergovernmental bodies and organizations involved in the protection and practical use of intellectual property and technology transfer.
5. Organization of conferences, workshops, and meetings on topical areas of the Advisory Board's activities.

¹⁹ Regulations on the Advisory Board on Intellectual Property Protection and Technology Transfer at the International Association of Academies of Sciences (IAAS). *IAAS Bulletin 18*. Kyiv, 1999.

²⁰ Kas'yanov A.A. (2007). *Dictionary of Manager (Basic Managerial Concepts in State, Socio-Economic and Political Life)*. Rostov-on-Don: Rostizdat.

6. Organization of study of issues of intellectual property protection in scientific organizations, preparation of proposals for improving the protection and commercialization of intellectual property in academies of sciences – members of the IAAS.

The new understandings of the Advisory Board's mission, vision and the tasks it addresses were presented for discussion at the first meeting of the new Advisory Board, which took place on September 29, 2016 in Minsk, in the Presidium of the NAS of Belarus²¹.

Subsequently, summarizing the comments and suggestions made at the meeting of the Advisory Board a) on the report of the Advisory Board chairperson, academician of the NAS of Belarus P.A. Vityaz "Mission and vision of the Advisory Board on intellectual property protection and technology transfer at the IAAS in the era of the global knowledge economy" and b) on the essence of the issues raised by the participants of the meeting in an initiative manner, the head of the Advisory Board, academician of the NAS of Belarus P.A. Vityaz outlined in an interview to I. Emel'yanovich, correspondent of the Belarusian magazine *Science and Innovation*, the following promising directions of the Advisory Board's activities: "We will organize joint scientific work in the field of protection and commercialization of intellectual property, international and internal technology transfer, prepare analytical reports, scientific and reference publications on these issues for the IAAS Board and governing bodies of CIS countries. We will continue cooperation with relevant national, international and intergovernmental bodies and organizations,

²¹ Vityaz P.A. (2017). Activities of the Advisory Board on Intellectual Property Protection and Technology Transfer at the International Association of Academies of Sciences on the organization of scientific and technological cooperation of academies of sciences – members of the IAAS. In: *International and National Scientific Organizations as a Factor in the Formation of the Global Scientific Community: Proceedings of an International Symposium (Kyiv, May 15–17, 2017)*. Kyiv: Nash format.

we will hold conferences, workshops, meetings on current areas of activity of the Advisory Board, study the level of intellectual property protection in scientific organizations, develop proposals for improving the protection and commercialization of intellectual property in academies of sciences – IAAS members. In short, to promote in every possible way the knowledge of those who have it to those who need it. For these purposes we propose to create a scientific and practical journal "Intellectual Property of the CIS", which will publish articles by specialists on these issues"²².

In carrying out these plans, the Advisory Board (now called the Scientific Council) in recent years:

1) has held four meetings of the Scientific Council (September 26, 2016, December 12, 2017, September 21, 2018, and November 24, 2021) at the NAS of Belarus;

2) has created an Interdepartmental Working Group within the Scientific Council on the basis of the NAS of Belarus, which includes 12 leading Belarusian specialists in the field of intellectual property protection and technology transfer; it conducts preliminary scientific expertise of all key documents that are submitted to the meetings of the Scientific Council by its management;

3) has prepared and published an analytical report "The current state and prospects of scientific research on intellectual property protection and technology transfer in academies of sciences – IAAS members" (Minsk, 2016. 58 p.);

4) The Scientific Council was also co-opted by Professor V.I. Kudashov, Doctor of Sciences (Economics)²³, BSTU professor, Eurasian patent attorney, who was unanimously elected deputy chairperson of the Scientific Council at the next meeting;

²² Emel'yanovich I. (2016). Intangible assets in the field of vision of the IAAS Advisory Board (Interview with Academician P.A. Vityazh, Chairperson of the IAAS Advisory Board). *Science and Innovation*. 11.

²³ This nomination was approved by resolution of the IAAS Board 257, dated October 20, 2015.

5) regularly provide the scientific community of the CIS countries with the information on existing problems, scientific-methodological and scientific-organizational achievements of the Scientific Council by preparing and publishing a series of scientific articles about its activities in periodicals of the post-Soviet states and collections of materials of scientific conferences and symposiums, which are regularly held in the post-Soviet space²⁴.

²⁴ See, for example, the following publications: Vityaz P.A., Shcherbin V.K. (2013). Participation of Belarusian scientists in the activities of the IAAS. *Science and Science of Science*, 4, 19–30; Vityaz P.A., Shcherbin V.K. (2014). Contribution of Belarusian scientists to the creation and development of the International Association of Academies of Sciences. *Belarusian Republican Foundation for Fundamental Research*, 1, 36–51; Emel'yanovich I. (2016). Intangible assets in the field of vision of the IAAS Advisory Board (Interview with Academician P.A. Vityazh, Chairperson of the IAAS Advisory Board). *The Science and Innovations*, 11, 10–13; Vityaz P.A. (2017). Activities of the Advisory Board on Intellectual Property Protection and Technology Transfer at the International Association of Academies of Sciences on the organization of scientific and technological cooperation of academies of sciences – members of the IAAS. In: *International and National Scientific Organizations as a Factor in the formation of the Global Scientific Community: Proceedings of the International Symposium (Kyiv, May 15–17, 2017)*. Kyiv: Nash format, 79–82; Vityaz P.A., Shcherbin V.K. (2018). Scientific Councils at the International Association of Academies of Sciences as a form of self-organization of branches of scientific knowledge. *Science and Science of Science*, 2, 91–110; Vityaz P.A., Shcherbin V.K. (2018). The development of the academic form of research organization in world science. In: *The 28th Kyiv International Symposium on Science and History of Science “The 100th Anniversary of the National Academy of Sciences of Ukraine: The Past and the Present” (Dobrovskie readings) (Kyiv, March 12–13, 2018)*. Kyiv: Feniks; Shcherbin V.K. (2018). Scientific Councils of the IAAS as a promising form of organizing interacademic research. In: Korshunov G.P. (Ed.). *Belarusian Science in the Conditions of Modernization: Proceedings of the International Scientific-Practical Conference (Minsk, September 20–21, 2018)*. Minsk: StroiMediaProekt; Shcherbin V.K. (2018). Activities and prospects for the development of the IAAS Scientific Councils. In: Gusakova V.G. (Ed.). *International Cooperation of Academies of Sciences. 25 years*. Minsk: Belaruskaya navuka; Vityaz P.A., Shcherbin V.K. (2019). Modern technoscience is the result of the convergence of new forms of organization of scientific research. In: *The International Symposium “National Academies of Sciences: Current State, Problems, Development Prospects and Priorities for Cooperation within the IAAS”, dedicated to the 90th anniversary of Gennadii Mikhailovich Dobrov (1929–1989), Corresponding Member of the Ukrainian SSR Academy of Sciences, Professor, founder of scientific school of science studies*

The secretariat of the Scientific Council is preparing a consolidated collection of materials from the 2016–2021 meetings of the Scientific Council for printing. In order to characterize the traditional problems of scientific reports presented at the meetings of the Scientific Council by its members and invited speakers, we will give as an example a brief overview of the content of the reports of the last meeting, held during the First Congress of the Scientific Councils of the IAAS (November 24, 2021).

Analysis of the topics of reports presented at the last meeting of the IAAS Scientific Council on Intellectual Property Protection and Technology Transfer (Minsk, November 24, 2021)

In accordance with the IAAS Council Resolution 306 “On the Congress of the Scientific Councils of the IAAS”, adopted on September 20, 2019 at the meeting of the IAAS Council in Dushanbe, it was first planned “to hold the Congress of the Scientific Councils of the IAAS (hereinafter – the Congress) in April 2020 in Minsk, at the National Academy of Sciences of Belarus”²⁵. The plan was to gather practically all the active core of the IAAS, i.e. leaders of full and associate members of the IAAS, all members of the IAAS scientific councils (the Association has 24 such councils), IAAS staff, as well as invited representatives of major international scientific organizations. However, for reasons related to the COVID-19 pandemic, the scheduled dates of the Congress were postponed several times. Finally, it was developed the safest (in the context of the COVID-19 pandemic) meeting format: only the heads of the full and associate members of the IAAS, as well as

in Ukraine, initiator of creation and first head of the Center for Research of Scientific and Technical Potential and History of Science of the Ukrainian SSR Academy of Sciences (Kyiv, June 6–7, 2019). Kyiv: Nash format; Institutional development of the International Association of Academies of Sciences: From scientific councils to international scientific and technological consortia. (2020). *Journal of the Belarusian State University. Sociology*, 2, 4–19; Vityaz P.A. (2022). Building the capacity of intangible assets. *The Science and Innovations*, 4, 50–52; etc.

²⁵ See: Bulletin of the International Association of Academies of Sciences No. 69. Minsk, 2020.

the heads and academic secretaries of the IAAS Scientific Councils were to participate in its work in person. As for the bulk of the members of the IAAS Scientific Councils, they could attend online those meetings of the IAAS Scientific Councils, which were scheduled during the First Congress of the IAAS Scientific Councils (November 23–26, 2021). Such integrated (in person and online) meetings of the scientific councils of the IAAS included, in particular, the following events:

1) meeting of the Young Scientists Board of the IAAS in the form of a videoconference (November 23, 2021);

2) meeting of the Scientific Council on Petrochemistry IAAS in conjunction with the 4th International Scientific and Technological Forum on Chemical Technologies and Oil and Gas Refining (November 23, 2021) at the Belarusian State Technological University;

3) meeting of the Scientific Council on Intellectual Property Protection and Technology Transfer of the IAAS (November 24, 2021) in the building of the Presidium of the NAS of Belarus in the format of videoconference. Consideration of the problems of the reports of the last meeting and is one of the ways to reveal the institutional characteristics of the model Scientific Council of the IAAS.

The session of the Scientific Council on Intellectual Property Protection and Technology Transfer of the IAAS was opened by its chairperson, academician of the NAS of Belarus **P.A. Vityaz**. He noted the particular relevance of issues related to intellectual property protection and technology transfer for today's knowledge economy, announced the agenda, and introduced all participants of the meeting.

Then the floor was given to Y.V. Nechepurenko, Candidate of Sciences (Chemistry), Head of the Research Institute for Physical Chemical Problems of the Belarusian State University. The joint report of **P.A. Vityaz** and **Y.V. Nechepurenko** "**System of intellectual property management in the National Academy of Sciences of Belarus**" describes the

system of intellectual property management in the NAS of Belarus within the framework of the state policy implementation in the sphere of innovation activity. It allowed subordinate organizations to promote themselves among the leaders in the creation of inventions, utility models, plant varieties and know-how, licensing objects of industrial property in the Republic of Belarus and the Russian Federation, as well as to put into civil circulation on the production base of Belarusian enterprises and subordinate organizations a large number of protected industrial properties and other results of scientific and technological activities and the release of commercial products containing protected industrial properties amounted hundreds of millions of rubles per year. The report also identifies the main directions of further development of the intellectual property management system in the NAS of Belarus for the near future, which will allow the Academy of Sciences to fully realize its high personnel, scientific, technical and innovation potential to address the challenges facing the country. Not surprisingly, the report raised a number of questions among the participants of the meeting. For example, Academician S.M. Aldoshin, a member of the Scientific Council, asked a question about the royalty payment mechanism that has taken shape in the NAS of Belarus.

Member of the Scientific Council, Director of the Center for Intellectual Property Research and Technology Transfer of the National Academy of Sciences of Ukraine (CIPRTT) Doctor of Sciences (Law) Yu.M. Kapitsa made an online presentation "Actual issues of creation, protection and use of intellectual properties by scientific organizations of the NAS of Ukraine". He noted that the Intellectual Property (IP) Policy of the NAS of Ukraine was adopted in 2008 and includes the Regulations on the use of intellectual property rights; the Model Regulations of the Division of Technology Transfer, Innovation and Intellectual Property of Scientific Organizations of NAS of Ukraine; model agreements with inventors and authors on the service of intellectual property rights

and remuneration, as well as other acts of the NAS of Ukraine. To date, departments of technology transfer, innovation and intellectual property have been established in 92 academic organizations, including the Vernadsky National Library of Ukraine. Answering the question of Academician of the NAS of Belarus P.A. Vityaz about changes in the patent activity, Yu.M. Kapitsa said that in comparison with 1987–1989, in the 1990s there was 11 times reduction of applications by the academic institutions due to the crisis in the economy. In 2000 due to gradual growth of research funding there was an increase in the number of applications and patents. Inventive activity by both businesses and academic organizations has been most negatively impacted by the increase in patenting fees in 2007 and 2019.

Responding to the questions of Candidate of Sciences (Engineering) A.A. Uspenskyi about a) sales of patents by organizations of the NAS of Ukraine at the international patent auctions and b) creation of start-ups and spin-offs in the NAS of Ukraine the speaker said the following: a) from his point of view, it is expedient and more profitable to develop investments in commercialization of IP of institutes, than to sell patents; b) 180 small enterprises, about 100 scientific and technical cooperatives, over 40 centers of scientific research organizations, all-Union societies of inventors and efficiency experts, NTTU were created in the NAS of Ukraine in the 90's. However, due to the adoption in 2006 of the Law of Ukraine "On management of state property", which restricted the ability of state organizations to act as founders of economic societies, these activities were practically ceased. In 2015, amendments to the Law of Ukraine "On scientific and scientific and technological activity" on the simplified procedure for creation of business partnerships by state scientific organizations and institutions of higher education were developed by the CIPRTT of the NAS of Ukraine. At the same time, the implementation of this law is constrained by the unresolved issue of the transfer of dividends from activities of business

partnerships directly to state organizations. The speaker noted the importance of sharing experience in the protection and use of IP within the IAAS, as well as the feasibility of comparative studies of experience in the creation and commercialization of IP and technology transfer in academic science academies – members of the IAAS. In particular, such experience was used to compare the regulation of research on patent purity, patent statistics in Belarus, Kazakhstan, the Russian Federation and Ukraine²⁶.

Then, a member of the Interdepartmental Working Group under the Scientific Council, General Director of the National Center of Intellectual Property within the Committee for Science and Technology of the Republic of Belarus, Candidate of Sciences (Law) V.A. Ryabovolov delivered his report "**Intellectual property as an effective tool for sustainable socio-economic development of the country**"²⁷. He emphasized that intellectual property is one of the most valuable assets (the total value of global intangible assets in 2020 reached 65.7 trillion US dollars, and profits from the use of intellectual properties – 369.3 billion US dollars). In addition, he carried out a comparative analysis of the macro dynamics of the use of intellectual property rights in the most developed and medium-developed countries (the USA, Switzerland, Hungary, the Russian Federation, Poland, the Czech Republic, the Republic of Belarus and Ukraine). The result of the analysis is the conclusion that compared to the most developed countries (Japan, the United States and China), in which the inventive and applicant activity is constantly growing, these types of activity in the post-Soviet states is gradually decreasing. According to V.A. Ryabovolov, in the Republic of Belarus the

²⁶ Винахідницька діяльність у наукових установах (2021). за ред. Ю.М. Капіци; кол. авторів: Ю.М. Капіца, Т.Г. Косско, Д.С. Махновський, І.І. Хоменко, Н.І. Арапова, М.П. Туров: Наук.-практ. вид. К.: Логос. 455 с. Available at: https://ipr.nas.gov.ua/?page_id=1890

²⁷ The full contents of the report can be found in: Ryabovolov V.A. (2022). Intellectual property as a tool for sustainable growth. *The Science and Innovations*, 1, 62–66.

decrease, for example, of the applicant activity is caused by the following reasons: 1) compulsory commercialization of the results of scientific and technological activities, created at the expense of state funds; 2) financial burden on applicants to pay patent fees (since 2014, the cost of obtaining a patent for an invention has increased from 62 to 400 US dollars); 3) inconsistency of certain norms in the field of incentives for inventive activity. The speaker believes that a number of measures defined by the Strategy of the Republic of Belarus in the field of intellectual property up to 2030, approved by the Council of Ministers of the Republic of Belarus on November 24, 2021, will help to neutralize the negative effects of the above-mentioned reasons. The high level of interest in the content of the report was emphasized by questions from the meeting participants. In particular, Candidate of Sciences (Engineering) A.A. Uspenskii was particularly interested in the answer to the question of whether scientific organizations and production enterprises of the republic allocate funds for foreign patenting.

A member of the Interdepartmental Working Group with the Scientific Council, Head of the Department “Republican Center of Technology Transfer” of the State Scientific Institution “Center for System Analysis and Strategic Research of the National Academy of Sciences of Belarus”, Candidate of Sciences (Engineering) A.A. Uspenskii made his presentation “Policy and legislation in the field of technology transfer in the Republic of Belarus: Status, problems, prospects”. The data presented that the income per capita from the export of licenses and patents is 1750 USD/person in Israel, 890 USD/person in Germany, 390 USD/person in the USA, 250 USD/person in Japan, 25 USD/person in Russia and 30 USD/person in Belarus was of particular interest for the participants of the meeting. Belarus is at least 8 times behind the leading world powers and 58 times behind Israel, whose population (8.9 million) is comparable to the population of Belarus (9.4 million). Based on the

comparative analysis of the policy and legislation of Belarus and developed countries of the world and the degree of their effectiveness in the field of technology transfer and commercialization, the speaker formulated 12 proposals for improving the policy and legislation of the Republic of Belarus in this area. These include: a) development of a number of the newest regulatory acts in the field of intellectual property; b) development of mechanisms allowing organizations of all forms of ownership to attract foreign specialists to solve technical problems they face; c) introduction of the course “Technology Transfer” into curricula of Belarusian universities; d) creation in the Republic of Belarus of the Republican auction of intellectual property. The high relevance of the proposals formulated by the speaker is evidenced by the questions received from the participants of the meeting (S.M. Aldoshin, P.A. Vityaz, Yu.M. Kapitsa et al.).

Academic Secretary of the Scientific Council on Intellectual Property Protection and Technology Transfer of the IAAS Candidate of Sciences (Philology) **V.K. Shcherbin** presented the report “**Analysis of external and internal risks and threats in the field of intellectual property**”. First, he analyzed external risks and threats, which included the following risky phenomena: industrial espionage, outpacing commercialization of ideas of domestic scientists by foreign firms, outpacing patenting of well-known scientific ideas by Western corporations, underestimating the achievements of Belarusian science in the Western and domestic media, brain drain and scientific content from post-Soviet countries to the far abroad. Then the speaker characterized the internal risks and threats: intellectual piracy; clearly insufficient protection of intellectual property in the domestic market and imperfect practice of its enforcement; violations of scientific ethics (plagiarism, compilation, etc.); excessive secrecy in the scientific and technical sphere; formation of distorted ideas about the level of intellectual property in the domestic media, etc.

The analysis of external and internal risks and threats carried out by the speaker allowed identifying and summarizing the proposals of foreign and domestic experts on the protection of intellectual property, developed taking into account the specifics of a particular area of activity associated with the development, protection and use of intellectual properties. Thus, in *the area of the international division of labor*, according to Italian researcher C. Vercellone, “two minimum preconditions must be met: 1) a structure that recognizes the right of developed and developing countries to establish their own, distinct system of intellectual property rights, and 2) a restoration of the right to selective protectionism”²⁸. In the *area of patent policy*, according to Belarusian researcher V.I. Kudashov, an effective means of protecting national IPs and even replenishing them is patent-license exchange²⁹. In the *area of science policy* in assessing the role of intangible assets and IPs, according to Russian scientist S.G. Kara-Murza, it is necessary to identify and “revive” those “invisible” resources, which were actualized in the USSR, but “deadened” as a result of perestroika reforms³⁰. Finally, in the field of scientific ethics, the speaker believes that an effective means of protecting IPs is the development of moral codes in each field of scientific knowledge, as well as the creation of national committees and commissions on scientific ethics, which would monitor the compliance of all scientists with the standards of scientific ethics in relation to IPs, as stated in these moral codes.

The results of the meeting of the IAAS Scientific Council on Intellectual Property Protection and Technology Transfer were summarized by its chairperson academician **P.A. Vityaz** who proposed

²⁸ Vercellone C. (2007). The question of development in the age of cognitive capitalism. *Logos*, 4, 165.

²⁹ Kudashov V.I. (2008). *Management of Intellectual Property: Textbook for University Students*. 2nd ed. Minsk: IVTs Minfina.

³⁰ Kara-Murza S.G. (2009). Science for the global economy or for life? In: Arutyunova V.S., Lisichkina G.V., Malinetskogo G.G. (Eds.). *Science of Russia. From the Present to the Future*. Moscow: LIBROKOM.

those participants of the meeting (in person and online) who are not members of the Scientific Council to be fully engaged in its activities as well as in the activities of the Interagency Working Group, which will allow introducing them into the IAAS scientific-organizational structures in the future. Moreover, the most urgent questions and ideas expressed at this meeting of the Scientific Council were submitted by P.A. Vityaz for consideration by the participants of the plenary session of the First Congress of the Scientific Councils of the IAAS, which took place in the building of the Presidium of the NAS of Belarus on November 25, 2021. At the above plenary session, **P.A. Vityaz** made a report “**On the results of the activities of the IAAS Scientific Councils and expansion of their list**”. An informal discussion of issues related to intellectual property protection and technology transfer continued at a reception organized on the same day for the participants of the First Congress of the IAAS Scientific Councils at the Victoria SPA Hotel (Minsk).

Integration initiatives of the Inter-Academy Council on the problems of development of the Union State in the field of innovation cooperation and turnover of intellectual property

The activities of the Inter-Academy Council of the Russian Academy of Sciences and the National Academy of Sciences of Belarus on the problems of development of the Union State make a significant contribution to solving the problems of intellectual property protection and technology transfer in Russia and Belarus. This Council takes an active part in the formation of the Union scientific and technical programs and conducts their scientific expertise. In addition, conceptual issues of scientific and innovative development of the Union State are discussed at the meetings of the Inter-Academy Council. In particular, in the third collection of works of the Council, dedicated to the 15th anniversary of the Union State and the 20th anniversary of the CIS, the article of S.M. Dedkov “Interacademic scientific and

technological cooperation as a factor in the formation of a single innovation space” was published³¹. It substantiates the provision that “common space” implies common “rules of the game” in the innovation sphere: tax benefits for developers and manufacturers, the rules of technology transfer, the conditions of intellectual property circulation, etc. Ultimately, it is a unified configuration of the National Innovation Systems of the CIS member states”³². Further, in the fifth collection of works of the Inter-Academy Council on the problems of development of the Union State, the article by S.M. Dedkov and V.K. Scherbin “Belarusian strategic initiatives in the context of Eurasian integration” was published³³. Its authors appreciate the role of strategic initiatives in the development of Eurasian integration, “especially if the promotion of such strategic initiatives will be accompanied by the creation of appropriate institutional structures of an integration nature (the EurAsEC Center of High Technologies, the Center for Integration Studies of the Eurasian Development Bank, the Interacademic Council on Development Problems of the Union State, the Belarusian-Russian University, the Eurasian Innovation System, the concept of which was approved by the heads of government”³⁴.

Conclusions

The analysis of the history of formation and activity of the International Association of Aca-

demies of Sciences and the system of scientific councils created within it (on the example of the IAAS Scientific Council on Intellectual Property Protection and Technology Transfer), as well as integration initiatives of the Inter-Academy Council on problems of the Union State development in the field of innovative cooperation and circulation of intellectual property allows making several conclusions.

1. Issues of intellectual property protection and technology transfer are extremely relevant for the development of international scientific cooperation within the IAAS, the Union State of Russia and Belarus, and other integration structures³⁵.

2. Only a legally verified solution of the issues of intellectual property protection and technology transfer will allow creating the necessary legal basis for the formation of international scientific and technological consortia on the basis of already existing scientific councils of the IAAS, as well as integration structures of the CIS and the Union State of Russia and Belarus.

3. International scientific and technological consortia formed within the IAAS, the Union State of Russia and Belarus, and other CIS integration structures should become the main actors in the implementation of the EAEU Strategy in the field of intellectual property.

³¹ Dedkov S.M. (2011). Interacademic scientific and technological cooperation as a factor in the formation of a single innovation space. In: *Integration of Science as a Factor in the Construction of the Union State: Scientific Proceedings of the Inter-Academy Council on the Problems of the Development of the Union State. Issue 3*. Minsk: Tsentr sistemnogo analiza i strategicheskikh issledovaniy NAN Belarusi.

³² Ibidem.

³³ Dedkov S.M., Shcherbin V.K. (2013). Belarusian strategic initiatives in the context of Eurasian integration. In: *Interacademic Council on the problems of the Union State. Issue 5. Integration and Security Issues of the Union State*. Minsk: Tsentr sistemnogo analiza i strategicheskikh issledovaniy NAN Belarusi.

³⁴ Ibidem.

³⁵ In favor of the validity of this conclusion is evidenced by an ever-growing list of scholarly articles on the subject. See, for example: Ilyin V.A., Gulin K.A., Uskova T.V. (2010). Intellectual resources as innovation development factor. *Economic and Social Changes: Facts, Trends, Forecast*, 3, 14–25; Leont’ev B.B. (2013). The new intelligent economy. *Partnership of Civilizations*, 4, 194–200; Leont’ev B.B. (2014). Principles of building an intellectual property economy. *Monitoring of Law Enforcement*, 2, 61–65; Kozyrev A.N. (2015). Economics of intellectual property: Measurements, mythology, and mathematical models. *Herald of the Russian Academy of Sciences*, 85(9), 776–784; Kudashov V.I., Kashtelyan T.V. (2015). Conditions and form of intellectual activities commercialization. *Economics and Management*, 3, 15–19; Vityaz P.A. (2022). Building the capacity of intangible assets. *The Science and Innovations*, 4, 50–52; Ryabovolov V.A. (2022). Intellectual property as an instrument of sustainable growth. *The Science and Innovations*, 1, 62–66; etc.

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Received March 2, 2022.

PUBLIC OPINION MONITORING

DOI: 10.15838/esc.2022.5.83.16

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 VolRC RAS in the Vologda Oblast¹.

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 "wave" of the monitoring (October 2022) and for the period from October 2021 to October 2022 (the last six surveys, that is, 12 months).

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 2018–2021².

In August – October 2022, the share of positive assessments of the RF President's activities decreased slightly (by 2 percentage points, from 61 to 59%); the share of negative assessments increased by 2 percentage points (from 22 to 24%).

In February – October 2022 (during the period of the special military operation), the level of support for the work of the head of state increased by 11 percentage points (from 48 to 59%), the share of people who do not support his activities decreased by 9 percentage points (from 33 to 24%)

Over the past 12 months (October 2021 – October 2022), the level of support for the work of the head of state has increased by 7 percentage points (from 52 to 59%); Chairman of the RF Government – by 8 percentage points (from 40 to 48%), Vologda Oblast Governor – by 6 percentage points (from 37 to 43%)³.

¹ The surveys are held six times a year in Vologda, Cherepovets, and in eight districts of the oblast (Babayevsky District, Velikoustyugsky District, Vozhegodsky District, Gryazovetsky District, Kirillovsky District, Nikolsky District, Tarnogsky District and Sheksninsky 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 Oblast's adult population. Sampling error does not exceed 3%.

More information on the results of VolRC RAS surveys is available at <http://www.vscs.ac.ru/>

² In 2020, four "waves" of the monitoring were conducted. Surveys in April and June 2020 were not conducted due to quarantine restrictions during the spread of COVID-19.

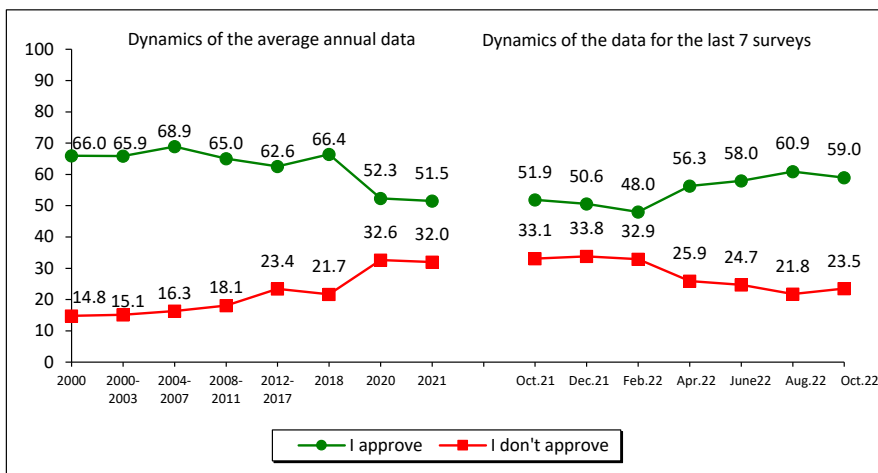
³ Hereinafter, the results of a comparative analysis of the data from the survey conducted in October 2022 and the results of the monitoring "wave" conducted in October 2021 are given in the frame.

How do you assess the current performance of..? (% of respondents)

Answer option	Dynamics of the average annual data							Dynamics of the data for the last 7 surveys							Dynamics (+/-), Oct. 2022 to		
	2000	2007	2011	2012	2018	2020	2021	Oct. 2021	Dec. 2021	Feb. 2022	Apr. 2022	June 2022	Aug. 2022	Oct. 2022	Oct. 2021	Feb. 2022	Aug. 2022
RF President																	
I approve	66.0	75.3	58.7	51.7	66.4	52.3	51.5	51.9	50.6	48.0	56.3	58.0	60.9	59.0	+7	+11	-2
I don't approve	14.8	11.5	25.5	32.6	21.7	32.6	32.0	33.1	33.8	32.9	25.9	24.7	21.8	23.5	-10	-9	+2
Chairman of the RF Government*																	
I approve	-*	-*	59.3	49.6	48.0	38.7	39.9	39.7	38.3	37.6	43.6	45.5	47.5	48.1	+8	+11	+1
I don't approve	-	-	24.7	33.3	31.6	40.4	37.6	38.3	38.9	37.7	32.5	31.4	29.4	31.3	-7	-6	+2
Governor																	
I approve	56.1	55.8	45.7	41.9	38.4	35.0	36.7	37.5	35.9	33.9	38.2	41.2	43.3	43.0	+6	+9	0
I don't approve	19.3	22.2	30.5	33.3	37.6	42.5	40.5	40.7	41.9	41.6	37.3	34.3	32.5	33.9	-7	-8	+1

The wording of the question: "How do you assess the current work of ...?" According to the survey technique, sampling error does not exceed 3%, so hereinafter changes with a difference of 2 p.p. are not taken into account or are considered insignificant; they are highlighted in blue in the tables. Positive changes are highlighted in green, negative changes are highlighted in red.
*Included in the survey since 2008.

How do you assess the current work of the RF President? (% of respondents, VolRC RAS data)



Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
I approve	+7	+11	-2
I don't approve	-1	-9	+2

Hereinafter, all graphs show the average annual data for 2000, 2018, 2019, 2020, 2021, as well as the average annual data for the periods 2000–2003, 2004–2007, 2008–2011, 2012–2017, corresponding to the presidential terms.

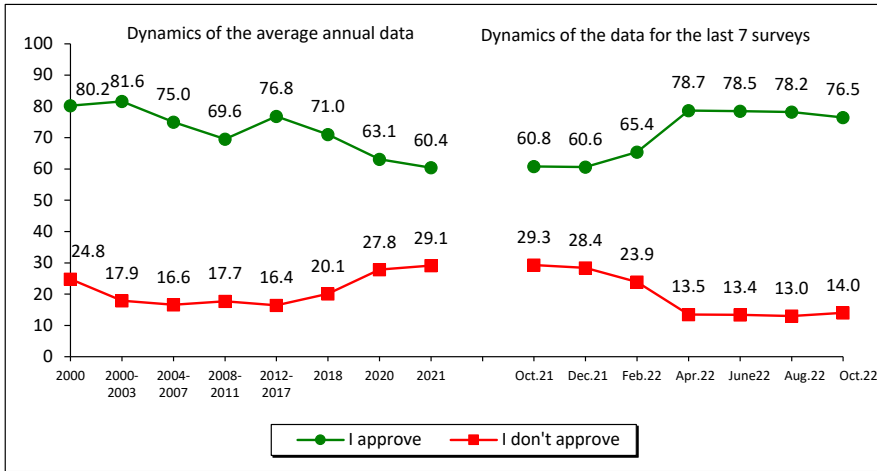
For reference:

According to VCIOM, the level of approval of the RF President's work in August – 1st half of October 2022 decreased by 2 percentage points (from 78 to 76%).

Compared to February 2022, the share of positive assessments of the activities of the head of state increased by 11 percentage points (from 65 to 76%).

In October 2021 – beginning of October 2022, the level of approval the RF President's work increased by 16 percentage points (from 60 to 76%).

In general, do you approve or not approve of the work of the RF President?
(% of respondents; VCIOM data)



Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
I approve	+16	+11	-2
I don't approve	-15	-10	+1

Question: "In general, do you approve or not approve of the work of the President of the Russian Federation?"

Data for October 2022 represent the average for three surveys: (October 2, 9, 16).

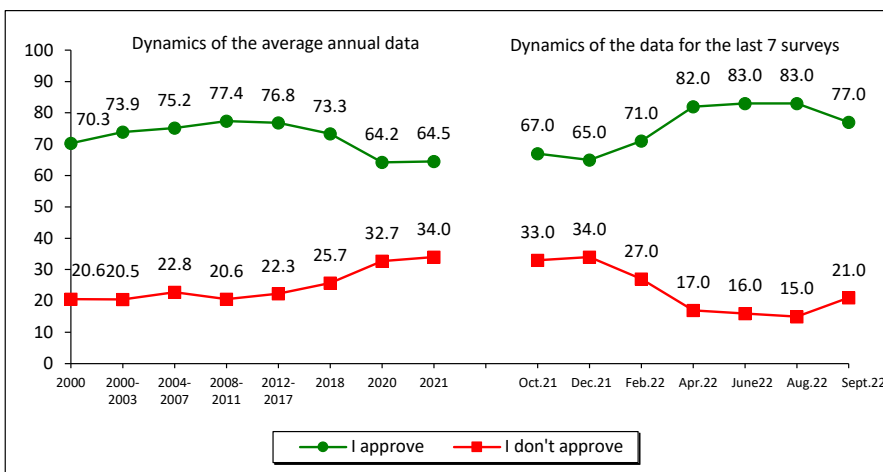
Source: VCIOM. Available at: <https://wciom.ru/>

According to Levada-Center*, the share of positive assessments of the President's activities in August – September 2022 decreased by 6 percentage points (from 83 to 77%).

In February – September 2022, there was an increase in the share of positive assessments (by 6 percentage points, from 71 to 77%).

From October 2021 to September 2022, the level of approval of the activities of the head of state increased by 10 percentage points (from 67 to 77%).

In general, do you approve or not approve of the work of Vladimir Putin as President of Russia? (% of respondents; Levada-Center* data)



Dynamics (+/-), September 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
I approve	+10	+6	-6
I don't approve	-12	-6	+6

Question: "In general, do you approve or not approve of the work of Vladimir Putin as President of Russia?"

Source: Levada-Center*. Available at: <https://www.levada.ru>

* Included in the register of foreign agents.

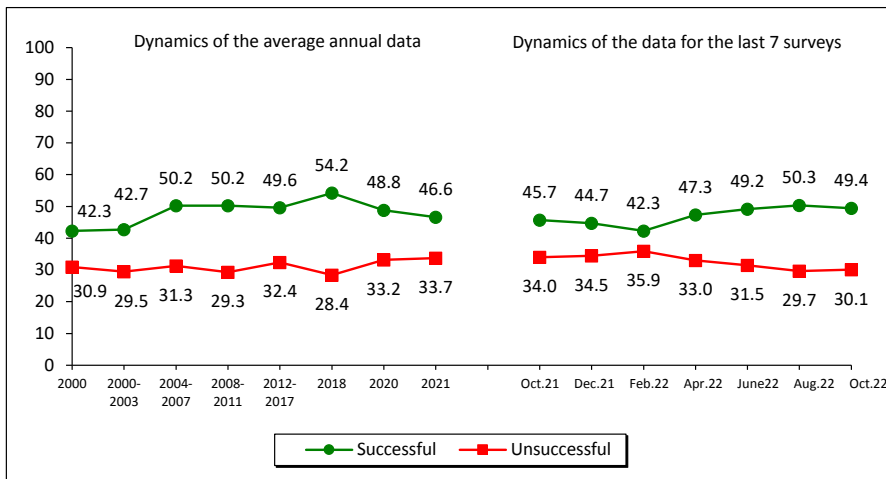
In your opinion, how successful is the RF President in coping with challenging issues?
(% of respondents; VolRC RAS data)

Over the past two months, the share of those who consider the RF President’s work to strengthen Russia’s international positions to be successful did not change significantly (49–50%). The proportion of those who hold the opposite point of view remains stable as well (30%).

From February to October 2022, the share of positive assessments increased by 7 p.p. (from 42 to 50%); the proportion of negative ones decreased by 6 p.p. (from 36 to 30%)

Compared to October 2021, the proportion of Vologda Oblast residents who positively assess the activities of the head of state to strengthen Russia’s international position increased by 4 p.p. (from 46 to 50%). The share of negative judgments decreased by 4 p.p. as well (from 34 to 30%).

Strengthening Russia’s international position



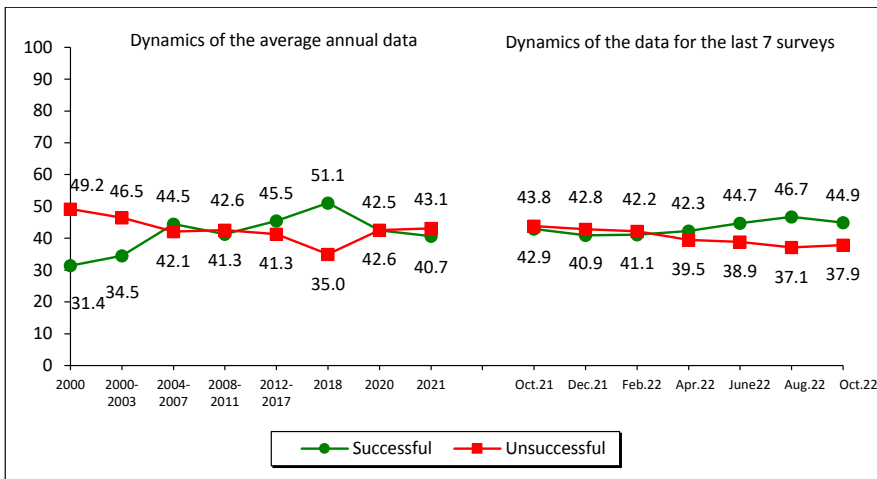
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
Successful	+4	+7	-1
Unsuccessful	-4	-6	0

In August – October 2022, the share of residents of the region who positively assess the work of the head of state to restore order in the country decreased (by 2 percentage points, from 47 to 45%). The proportion of negative assessments has not changed significantly (37–38%).

In general, in February – October 2022, the share of positive characteristics increased by 4 percentage points (from 41 to 45%); the proportion of negative ones decreased by 4 percentage points (from 42 to 38%).

Over the past 12 months, the proportion of Vologda Oblast residents who consider the work of the head of state to restore order in the country to be successful increased by 2 percentage points (from 43 to 45%). The share of negative judgments decreased by 6 percentage points (from 44 to 38%).

Imposing order in the country



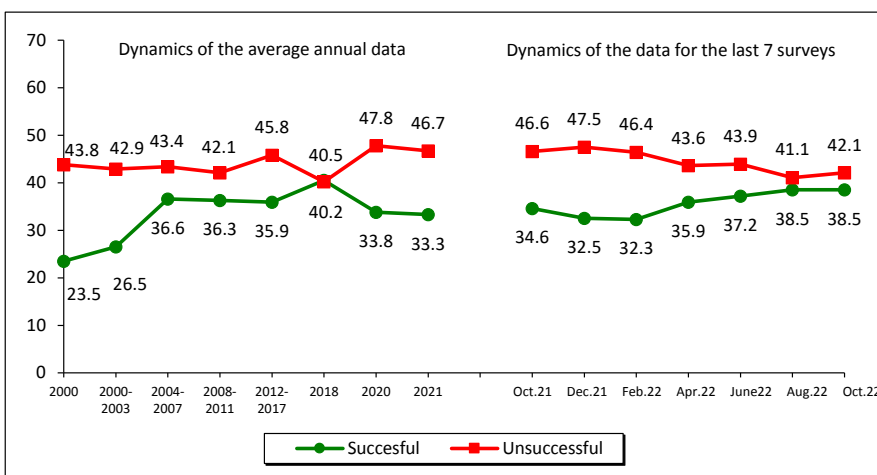
Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
Successful	+2	+4	-2
Unsuccessful	-6	-4	+1

Assessments of the RF President’s success in protecting democracy and strengthening citizens’ freedoms did not change significantly over the past two months: the share of positive judgments is 39%, the proportion of negative ones is 41–42%.

Positive changes are noted for the period from February to October 2022: the share of positive assessments increased by 7 percentage points (from 32 to 39%), negative – decreased by 4 percentage points (from 46 to 42%).

Over the past 12 months (from October 2021 to October 2022), public opinion about the work of the head of state to protect democracy and strengthen citizens’ freedoms improved: the share of positive assessments increased by 4 percentage points (from 35 to 39%), negative – decreased by 5 percentage points (from 47 to 42%).

Protecting democracy and strengthening citizens’ freedoms



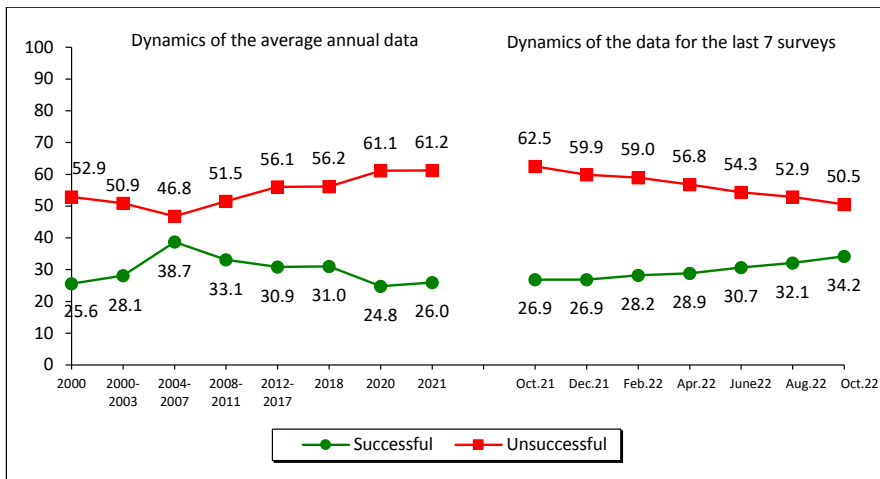
Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
Successful	+4	+7	0
Unsuccessful	-5	-4	+1

In August – October 2022, the trend of improving public opinion assessments of the RF President’s work to boost the economy and increase the welfare of citizens continued. Over the past two months, the proportion of positive characteristics increased by 2 percentage points (from 32 to 34%), negative ones – decreased by 2 percentage points (from 53 to 51%).

From February to October 2022, the share of positive judgments increased by 6 percentage points (from 28 to 34%), negative ones – decreased by 8 percentage points (from 59 to 51%).

In October 2021 – October 2022, positive changes are also noted: the proportion of people who consider the actions of the head of state to boost the economy and increase the welfare of citizens to be successful increased by 7 percentage points (from 27 to 34%), the share of negative judgments decreased by 12 percentage points (from 63 to 51%).

Economic recovery and increase in citizens' welfare



Answer option	Oct. 2021	Feb. 2022	Aug. 2022
Successful	+7	+6	+2
Unsuccessful	-12	-8	-2

The structure of political preferences of Vologda Oblast residents did not change over the past two months: the share of people whose interests are expressed by the United Russia party is 36–37%, the Communist Party – 10%, the Liberal Democratic Party – 6–7%, the Just Russia party – 5%, New People – 1–2%.

From February to October 2022, we note an increase in support for United Russia (by 6 percentage points, from 31 to 37%).

Compared to October 2021, the share of supporters of the party in power increased by 4 percentage points (from 33 to 37%). In addition, the share of people who note that their interests are shared by the Liberal Democratic Party decreased (by 5 percentage points, from 11 to 6%).

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 (+/-), Oct. 2022 to		
	2000	2007	2011	Election to the RF State Duma 2011, fact	2012	2016	Election to the RF State Duma 2016, fact	2018	2020	Election to the RF State Duma 2020, fact	2021	Oct. 2021	Dec. 2021	Feb. 2022	Apr. 2022	June 2022	Aug. 2022	Oct. 2022	Oct. 2021	Feb. 2022	Aug. 2022
United Russia	18.5	30.2	31.1	33.4	29.1	35.4	38.0	37.9	31.5	49.8	31.7	32.7	31.9	31.1	34.2	34.9	36.2	36.7	+4	+6	+1
KPRF	11.5	7.0	10.3	16.8	10.6	8.3	14.2	9.2	8.4	18.9	9.3	11.1	10.5	9.5	11.2	10.2	10.4	9.9	-1	0	-1
LDPR	4.8	7.5	7.8	15.4	7.8	10.4	21.9	9.6	9.5	7.6	9.9	11.2	9.9	9.4	7.7	7.8	6.8	6.0	-5	-3	-1
Just Russia – Patriots for the Truth	–	7.8	5.6	27.2	6.6	4.2	10.8	2.9	4.7	7.5	4.7	6.3	6.0	5.7	4.5	4.8	4.9	4.5	-2	-1	0
New People*	–	–	–	–	–	–	–	–	–	5.3	2.3	–	2.3	1.6	1.3	1.6	1.9	1.1	–	-1	+1
Other	0.9	1.8	1.9	–	2.1	0.3	–	0.7	0.5	–	0.2	0.5	0.2	0.7	0.3	0.1	0.1	0.5	0	0	0
None	29.6	17.8	29.4	–	31.3	29.4	–	28.5	34.2	–	33.9	31.7	29.6	32.4	30.8	30.7	29.3	30.6	-1	-2	+1
I find it difficult to answer	20.3	21.2	13.2	–	11.7	12.0	–	11.2	11.1	–	10.0	6.6	9.7	9.6	10.0	9.9	10.5	10.8	+4	+1	0

* 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.

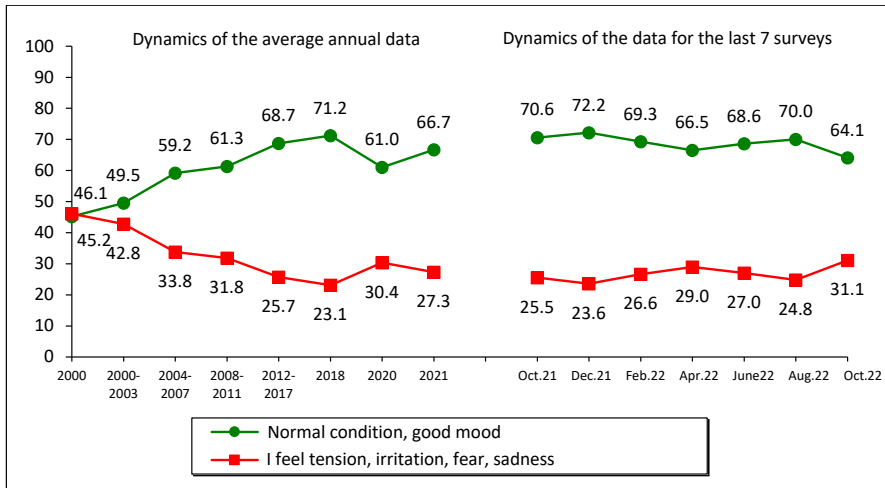
Estimation of social condition (% of respondents; VoIRC RAS data)

Over the past two months, social mood of Vologda Oblast residents deteriorated in general. The proportion of people describing their daily emotional state as “normal, fine” decreased by 6 percentage points (from 70 to 64%). The proportion of those who experience mainly “tension, irritation, fear, sadness” increased by 6 percentage points (from 25 to 31%).

Compared to February 2022, changes in the dynamics of social mood are also negative: the share of positive assessments decreased by 5 percentage points (from 69 to 64%), negative ones – also increased by 5 percentage points (from 26 to 31%).

Over the past 12 months (from October 2021 to October 2022), the share of positive characteristics of social mood decreased by 7 percentage points (from 71 to 64%), negative ones – increased by 6 percentage points (from 25 to 31%).

Social mood



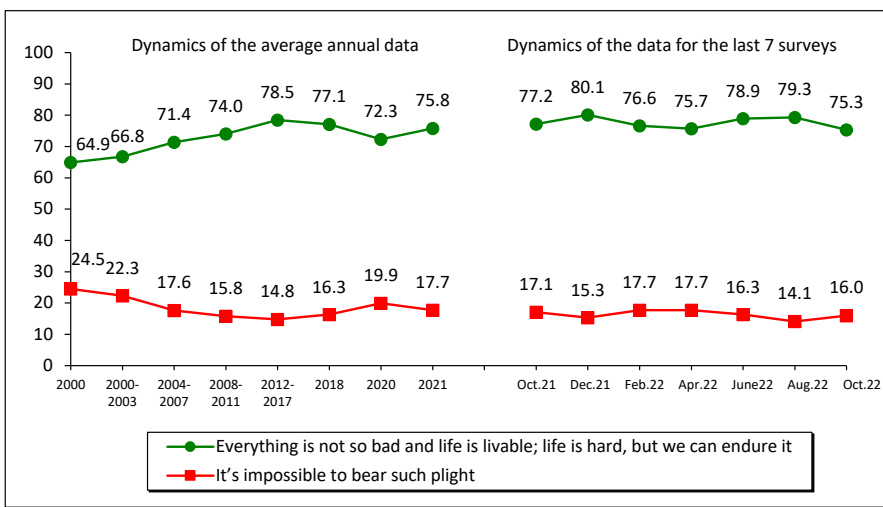
Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
Usual condition good mood	-7	-5	-6
I feel tension, irritation, fear, sadness	+6	+5	+6

In August – October 2022, the indicators of the stock of patience deteriorated. The share of those who believe that “everything is not so bad and life is livable; life is hard, but we can endure it” decreased by 4 percentage points (from 79 to 75%). The proportion of those who note that “it’s impossible to bear such plight” increased by 2 percentage points (from 14 to 16%).

From February to October 2022, the share of positive assessments of the stock of patience did not change significantly (75–76%), at the same time, the share of negative assessments decreased by 2 percentage points (from 18 to 16%).

Compared to October 2021, the share of positive assessments decreased by 2 percentage points (from 77 to 75%); the proportion of negative ones did not change significantly (16–17%).

Stock of patience



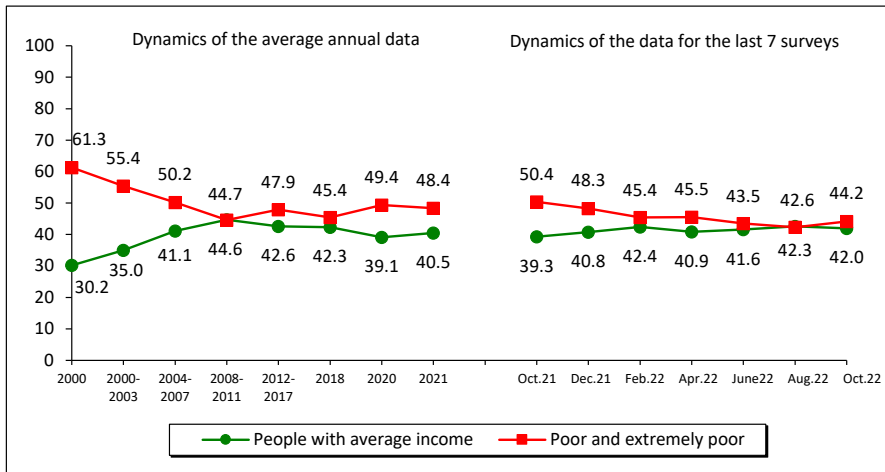
Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
Everything is not so bad and life is livable; life is hard, but we can endure it	-2	-1	-4
It's impossible to bear such plight	-1	-2	+2

The proportion of residents of the region subjectively classifying themselves as “poor and extremely poor” increased by 2 percentage points over the past two months (from 42 to 44%); the proportion of those who subjectively classify themselves as “middle-income people” did not change significantly (42–43%).

From February to October 2022, there are no tangible changes in the dynamics of social self-identification: the share of the “poor and extremely poor” is 44–45%, the proportion of “middle-income people” is 42%.

Over the past 12 surveys (October 2021 – October 2022), the share of “poor and extremely poor” residents of the region decreased by 6 percentage points (from 50 to 44%); the proportion of “middle-income people” increased by 3 percentage points (from 39 to 42%).

Social self-identification*



Dynamics (+/-), October 2022 to			
Answer option	Oct. 2021	Feb. 2022	Aug. 2022
People with average income	+3	0	+1
Poor and extremely poor	-6	-1	+2

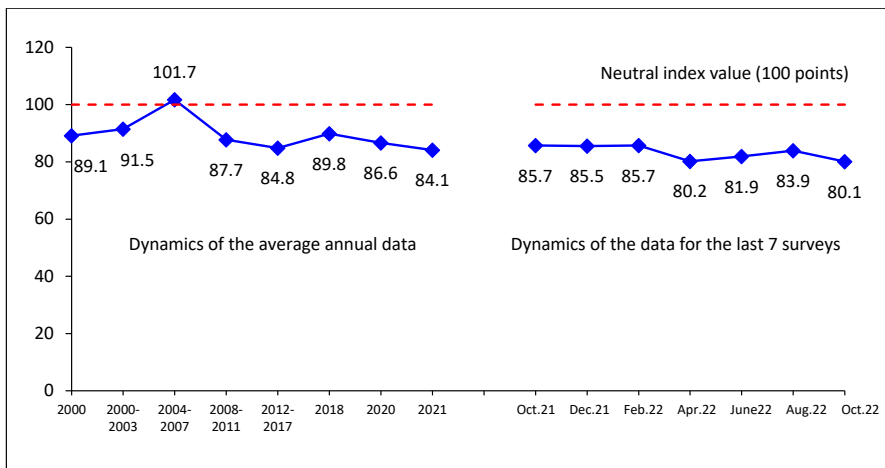
Question: "What category do you belong to, in your opinion?"

In August – October 2022, the consumer sentiment index significantly decreased (by 4 points, from 84 to 80 points), which indicates an increase in people’s pessimistic forecasts about the future of the Russian economy and their personal financial situation.

As of October 2022, the CSI value is lower than in February 2022 (by 6 percentage points, 80 and 86 points, respectively).

At the same time, over the past 12 months, we also observe a deterioration in people’s consumer sentiment (the CSI decreased by 6 percentage points, from 86 to 80%).

Consumer Sentiment Index (CSI, points; data of VolRC RAS for the Vologda Oblast)



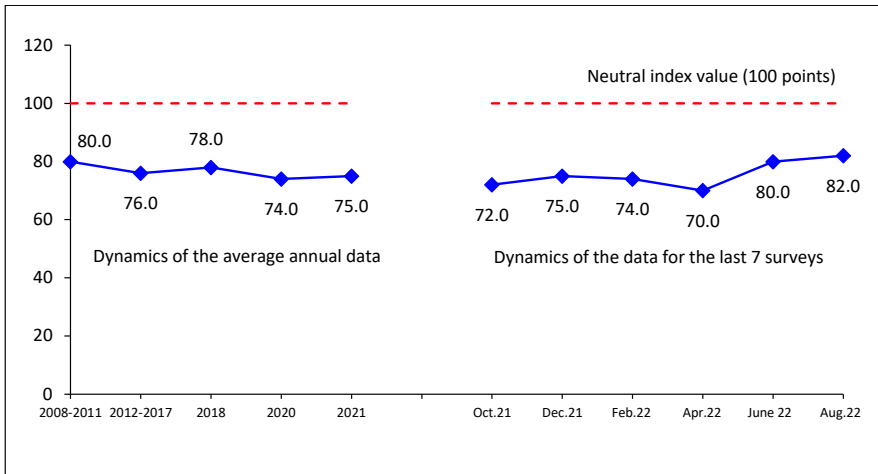
Dynamics (+/-), October 2022 to			
CSI	Oct. 2021	Feb. 2022	Aug. 2022
Index value, points	-6	-6	-4

For reference:

According to the all-Russian surveys conducted by Levada-Center, there are positive trends in the dynamics of the CSI (in April 2022 – 70 p., in June – 80 p., in August – 82 p.). However, we should note that at the time of preparation of the material, there were no data from Levada-Center* for October 2022. The all-Russian trend of improving consumer sentiment, noted in April – August 2022, was also traced by the results of regional measurements of VolRC RAS (from April to August 2022, according to surveys conducted in the Vologda Oblast, the CSI increased by 4 points, from 80 to 84 points).*

* Included in the register of foreign agents.

Consumer Sentiment Index (CSI; Levada-Center* data for Russia)



Dynamics (+/-), August 2022 to		
CSI	Oct. 2021	June 2022
Index value, points	+10	+2

The index is calculated since 2008.

Latest data are as of August 2022.

Source: Levada-Center*. Available at: <https://www.levada.ru/indikatory/sotsialno-ekonomicheskie-indikatory/>

The dynamics of social mood for the period from August to October 2022 shows negative changes in all major socio-demographic groups. In most groups (10 out of 14), the share of positive ratings decreased by 5–7 percentage points. The most negative changes are observed among people with secondary and incomplete secondary education (the share of positive assessments of social mood decreased by 10 percentage points, from 69 to 59%).

Deterioration in people’s psychological well-being is also noted for the period from February to October 2022: the share of positive assessments of social mood decreased in 12 of the 14 main socio-demographic groups, especially in women (by 9 percentage points, from 72 to 63%); persons with secondary and incomplete secondary education (by 10 percentage points, from 69 to 59%); people who, according to self-estimates of income, belong to the bottom 20% (by 10 percentage points, from 61 to 51%)

From October 2021 to October 2022, negative changes in social mood are also observed in all socio-demographic groups under consideration, except for people under the age of 30 (in this group, the share of positive assessments did not change significantly – 75%).

First of all, the proportion of those who characterize their daily emotional state as “normal, fine” has decreased among:

- ✓ persons over 55 years of age (by 10 percentage points, from 68 to 58%);
- ✓ people with higher and incomplete higher education (by 10 percentage points, from 77 to 67%);
- ✓ 20% of the least well-off (by 10 percentage points, from 60 to 50%).

* Included in the register of foreign agents.

Social mood in different social groups (answer option “Wonderful mood, normal, stable condition”, % of respondents; VoIRC RAS data)

Population group	Dynamics of the average annual data							Dynamics of the data for the last 7 surveys							Dynamics (+/-), Oct. 2022 to		
	2000	2007	2011	2012	2018	2020	2021	Oct. 2021	Dec. 2021	Feb. 2022	Apr. 2022	June 2022	Aug. 2022	Oct. 2022	Oct. 2021	Feb. 2022	Aug. 2022
Sex																	
Men	50.1	65.9	64.5	69.1	72.8	60.8	65.7	70.0	71.5	65.5	68.3	67.4	69.9	65.0	-5	-1	-5
Women	43.3	61.7	62.0	65.8	69.8	61.2	67.4	70.9	72.8	72.3	65.1	69.7	70.2	63.3	-8	-9	-7
Age																	
Under 30	59.1	71.3	70.0	72.3	80.0	67.6	73.5	75.3	81.9	75.3	81.8	77.3	77.8	74.5	-1	-1	-3
30–55	44.2	64.8	62.5	67.9	72.6	61.8	69.5	70.8	75.1	70.7	71.1	68.8	72.0	65.2	-6	-6	-7
Over 55	37.4	54.8	58.3	62.1	65.2	57.4	60.5	68.3	65.2	65.3	55.2	65.3	64.6	58.7	-10	-7	-6
Education																	
Secondary and incomplete secondary	41.7	58.4	57.4	57.2	64.8	56.1	62.1	64.1	69.7	68.7	63.0	65.8	68.5	58.9	-5	-10	-10
Secondary vocational	46.4	64.6	63.6	66.7	72.2	63.5	66.7	70.4	70.1	68.3	69.8	70.5	71.0	65.8	-5	-3	-5
Higher and incomplete higher	53.3	68.6	68.3	77.0	76.8	63.3	71.5	77.1	77.6	71.5	66.9	69.7	70.8	67.5	-10	-4	-3
Income group																	
Bottom 20%	28.4	51.6	45.3	51.5	57.3	43.4	54.6	60.4	64.0	60.5	61.5	58.4	55.4	50.7	-10	-10	-5
Middle 60%	45.5	62.9	65.3	68.7	71.9	62.6	67.3	70.9	71.1	68.8	64.2	70.3	73.2	65.9	-5	-3	-7
Top 20%	64.6	74.9	75.3	81.1	82.9	75.6	79.9	84.2	85.3	81.5	81.9	75.7	77.0	78.7	-6	-3	+2
Territories																	
Vologda	49.2	63.1	67.1	73.6	71.0	60.9	60.3	64.0	65.7	63.2	60.2	61.0	61.5	55.7	-8	-8	-6
Cherepovets	50.8	68.1	71.2	76.2	75.8	60.4	71.0	75.2	75.1	72.6	70.1	72.8	74.6	67.9	-7	-5	-7
Districts	42.2	61.6	57.1	59.8	68.7	61.4	67.8	71.5	74.2	70.8	68.1	70.6	72.3	66.6	-5	-4	-6
Oblast	46.2	63.6	63.1	67.3	71.2	61.0	66.6	70.5	72.2	69.3	66.5	68.7	70.1	64.1	-6	-5	-6

RESUME

According to the results of the latest “wave” of the monitoring conducted in October 2022, over the past two months the most noticeable changes occurred in people’s assessments of their psychological well-being:

- ✓ the share of those who describe their mood as “normal, fine” decreased by 6 percentage points (from 70 to 64%) in all major socio-demographic groups;
- ✓ the proportion of those who believe that “everything is not so bad and life is livable; life is hard, but we can endure it” decreased by 4 percentage points (from 79 to 75%);
- ✓ the Consumer Sentiment Index, which is largely an indicator of psychological well-being, since it reflects people’s perceptions of their own future and the future of the country as a whole, decreased by 4 points (from 84 to 80 points).

The indicated dynamics of public opinion assessments quite adequately reflect the difficult situation that has developed in the country in recent months: growth of international political tension; difficult situation on the front line during the special military operation on the territory of Ukraine⁴; more frequent

⁴ Among them: the counteroffensive of the Armed Forces of Ukraine on September 6–12, 2022, the withdrawal of the allied forces from Krasny Liman on October 1, 2022.

terrorist attacks against Russia⁵; partial mobilization of the population, which has become “certainly a sensitive topic for society”⁶ and which revealed a large amount of “stupidity” in the course of its implementation⁷ – all this could not but affect people’s psychological state.

At the same time, we note that against the background of rather alarming events, people’s assessment of the dynamics of their financial situation remains stable: the share of positive judgments regarding the RF President’s efforts to boost the economy and increase citizens’ welfare continues to increase since December 2021 (from December 2021 to October 2022, it increased by 7 percentage points, from 27 to 34%)

Thus, the question of what the future trends of public sentiment will be depends largely on the situation in world politics, on the course of hostilities in Ukraine and on the decisions taken by the Supreme Commander of the Russian Federation Vladimir Putin.

However, it would not be quite correct to take an “instant photo” of society and focus only on the most striking and possibly short-term changes in its condition. No less important is how society “feels” during the period of the special operation; how its key characteristics have changed over the entire period from February 2022 to the present.

In this regard, we should note that according to all the main monitoring indicators, a number of important and positive changes are observed in the trends of public opinion of Vologda Oblast residents. From February to October 2022:

- ✓ the level of support for all major authorities increased: the RF President (by 11 percentage points, from 48 to 59%), the Prime Minister (by 11 percentage points, from 37 to 48%), the Vologda Oblast Governor (by 9 percentage points, from 34 to 43%);
- ✓ the assessments of the success of the RF President’s work improved in all key areas: strengthening Russia’s international positions (by 7 percentage points, from 42 to 49%), restoring order in the country (by 4 percentage points, from 41 to 45%), protecting democracy and strengthening citizens’ freedoms (by 6 percentage points, from 32 to 38%) and even in the most difficult direction – economic recovery and growth of population welfare (by 6 percentage points, from 28 to 34%);
- ✓ it is equally important that in February – October 2022, there was a noticeable increase in the proportion of those who believe that the United Russia party in power expresses their interests (by 6 percentage points, from 31 to 37%);
- ✓ the indicators of the psychological well-being during the period of the special operation decreased slightly: the share of positive assessments of social mood decreased by 5 percentage points (from 69 to 64%), the stock of patience – by 2 percentage points (from 77 to 75%); the Consumer Sentiment Index decreased by 6 points (from 86 to 80 points). However, this happened mainly due to the dynamics of public opinion assessments in August – October 2022. In the previous period (from February to August), the proportion of people who positively characterize their daily emotional state, the proportion of positive assessments of the stock of patience, the Consumer Sentiment Index as a whole remained stable (70, 79% and 84–86 points, respectively).

⁵ See, for example:

August 15 – thwarted terrorist attack attempt at an oil and gas complex facility in the Volgograd Oblast;

August 20 – murder of Dariya Dugina, Russian journalist and daughter of philosopher A. Dugin;

September 25 – explosion after another shelling of a hotel in the Kherson Oblast (among the dead is a well-known public figure A. Zhuravko);

September 26 – explosions of the Nord Stream and Nord Stream-2 gas pipelines;

October 8 – terrorist attack that led to the collapse of part of the Crimean Bridge;

October 11 – prevented terrorist attack on the Druzhba oil pipeline;

October 15 – explosion of the tanks of an oil depot in the Belgorod Oblast.

⁶ *Argumenty nedeli*. Available at: <https://argumenti.ru/society/2022/09/791413> (V.A. Fadeev – from October 21, 2019 Advisor to the RF President, Chairman of the Presidential Council for the Development of Civil Society and Human Rights).

⁷ President’s speech at a meeting with the elected heads of regions. Official website of the RF President. October 10, 2022. Available at: <http://www.kremlin.ru/events/president/news/69567>

Dynamics of the main indicators of public opinion monitoring for February – October 2022 (% of respondents)

Indicator	Feb. 2022	Aug. 2022	Oct. 2022	Dynamics +/-, p.p.		
				Feb. – Aug. 2022	Aug. – Oct. 2022	Feb. – Oct. 2022
Proportion of positive assessments regarding the work of the RF President	48.0	60.9	59.0	+13	-2	+11
Proportion of positive assessments regarding the work of the RF Prime Minister	37.6	47.5	48.1	+10	+1	+11
Proportion of positive assessments regarding the work of the Vologda Oblast Governor	33.9	43.3	43.0	+9	0	+9
Proportion of positive assessments regarding the success of the RF President's work to strengthen Russia's international position	42.3	50.3	49.4	+8	-1	+7
Proportion of positive assessments regarding the success of the RF President's work to restore order in the country	41.1	46.7	44.9	+6	-2	+4
Proportion of positive assessments regarding the success of the RF President's work to protect democracy and strengthen citizens' freedoms	32.3	38.5	38.5	+6	0	+6
Proportion of positive assessments regarding the success of the RF President's work to boost the economy and increase the welfare of the population	28.2	32.1	34.2	+4	+2	+6
Proportion of those who note that their interests are represented by the United Russia party	31.1	36.2	36.7	+5	+1	+6
Proportion of positive assessments of social mood	69.3	70.0	64.1	+1	-6	-5
Proportion of positive assessments of the stock of patience	76.6	79.3	75.3	+3	-4	-1
Consumer Sentiment Index	85.7	83.9	80.1	-2	-4	-6

Thus, we should emphasize that the results of sociological surveys carried out over the entire period of the special operation indicate that the society maintains a fairly stable psychological background and a high level of public support for the work of government authorities (primarily the RF President).

The decline in the indicators of psychological well-being in society in August – October 2022 requires attention of the authorities and further observations from sociologists. However, it still remains quite positive (the proportion of people who characterize their daily emotional state as “normal, fine” is more than 50% in all socio-demographic groups); in addition, the negative changes that have manifested themselves in the last two months are quite a natural reaction of people to the events that took place during this period in the internal and external political life of the country.

It is important that from the very beginning of the hostilities in Ukraine, Russian society has shown a high degree of consolidation around the President, as well as a willingness to overcome with understanding and patience various difficulties that arise in the process of achieving the goals of the special military operation.

At the same time, recognition and prompt response of the public administration system to errors that occurred during partial mobilization; active volunteer assistance to mobilized citizens and military personnel fighting directly on the front line; “a large number of volunteers”⁸ (as Defense Minister Sergei Shoigu noted), who decided to participate in the special military operation, and many other facts allow us to say that new features of civil society are being strengthened and formed in Russia. It is quite possible that this will become an important factor in overcoming the current, period in its history, which is certainly not the easiest one.

Materials were prepared by M.V. Morev, I.M. Bakhvalova

⁸ *RIA-novosti*. October 4, 2022. Available at: <https://ria.ru/20221004/shoygu-1821393672.html>

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Make-up page T.V. Popova
Translators and Proof-readers A.A. Popova
A.D. Kirillova
O.M. Pokhila

Passed for printing November 16, 2022.
Date of publication November 22, 2022.
Format 60×84¹/₈. Digital recording.
Con. pr. sheets 35.7. Number of copies 500. Order No. 58.
Price is open.

The journal is registered with the Federal Service
for Supervision of Telecom and Mass Communications (Roskomnadzor).
Certificate of registration PI FS77-71361 dated October 26, 2017.

Founder: Federal State Budgetary Institution of Science
“Vologda Research Center of the Russian Academy of Sciences” (VoIRC RAS)

Address of the Publisher and Editorial Office:
56A, Gorky St., Vologda, 160014, Russia
phone (8172) 59-78-03, fax (8172) 59-78-02, e-mail: common@volnc.ru