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ECONOMIC AND SOCIAL CHANGES: FACTS, TRENDS, FORECAST

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

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

Founder: Vologda Research Center of the Russian Academy of Sciences

Federal State Budgetary Institution of Science Vologda Research Center of the Russian Academy of Sciences (VolRC 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 (ISEDT RAS).

In 2017 the socio-economic research was supplemented by agricultural issues. ISEDT 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 VolRC 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.

INTERNATIONAL TIES AND PROJECTS

VolRC 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 ISEDT RAS within the 7th Framework Programme of European Community.

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

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

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

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

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

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

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EDITORIAL

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The System of Oligarchic Capitalism in Russia Is Inconsistent with the Achievement of the Goals of the Special Military Operation

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Abstract. June 23–24, 2023, Russia witnessed an attempt of an armed rebellion committed by the private military company Wagner headed by businessman Evgenii Prigozhin. Despite the rapid relief of the crisis, many experts note that it has deep and long-lasting implications for the public administration system, the President and Russia as a whole. We consider the causes and consequences of the events that occurred on June 23–24, drawing on our knowledge and experience accumulated during many years of monitoring the effectiveness of public administration, which includes the analysis of expert opinions, findings of diverse empirical studies regarding the state of Russian society, and the study of key regulatory legal acts and strategic documents adopted at the federal level. We think that the attempt to start a rebellion manifests a long-term crisis of statehood, which was caused by the clan-oligarchic structure of the public administration system flourishing in Russia in the post-Soviet period. We analyze certain aspects of the

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formation of the worldview of the modern extremely liberal ruling elite, provide concrete facts that indicate that the liberal wing of the government does not implement the President's decrees and instructions effectively, and evaluate the role of the public administration system in the formation and implementation of the Social Contract as an informal institution representing a set of mutual obligations between the state and society. We conclude that there is an urgent need for decisive action (first of all, on the part of the President) on the personnel renewal in the public administration system; it is also necessary to staff the system with people focused on Russia's national interests rather than liberal values of the Collective West, the people that have successful experience in solving complex managerial and economic tasks, especially in crisis conditions and in the context of the special military operation. Like many experts, we believe that in this case the public administration system will be able to provide an adequate response to an unprecedented range of internal and external challenges created by increasing threats to national security and global geopolitical changes that led to the special military operation.

Key words: special military operation, public administration system, President, Social Contract, oligarchic capitalism.

The special military operation has been going on for 19 months. At the celebration of the 78th anniversary of the Victory Day of the Soviet Union in the Great Patriotic War, the RF President noted that **today there is nothing more important than the combat activities of SMO participants; national security, the future of the state and the Russian people depend on its results.**

> "We take pride in the participants in the special military operation, all those fighting on the frontlines, those who deliver supplies to the front and save the wounded under fire. **Your combat activities now are of paramount importance. The country's security depends on you today as does the future of our statehood and our people"**[1].

However, in the middle of 2023, amid the ongoing military actions and increasing threats to national security on the part of the Collective West and the Kiev regime, Russia faced an event that jeopardized the achievement of the SMO goals: on June 23–24, the Wagner Group, businessman E. Prigozhin's private military company[2], made an attempt at an armed revolt.

[1] Vladimir Putin's speech at the Victory Parade, May 9, 2023. Available at: http://www.kremlin.ru/events/president/transcripts/71104

[2] A brief biography of E. Prigozhin. Available at: https://www.rbc.ru/person/63d280069a79473d6f5e3ce6#p2:

Evgenii Prigozhin is a businessman, the owner of the Concord Group and the private military company Wagner Group. In 1979, he was sentenced to 2.5 years in prison for theft. In 1981, he was sentenced to 13 years in prison for theft, fraud, involvement of a minor in criminal activity and robbery. He was pardoned in 1988.

In the early 1990s, Prigozhin became involved in the food business. In 1991–1997 he managed a chain of private grocery stores. In the 2000s, he became involved in the construction business in Saint Petersburg. In the 2010s, Prigozhin's company began to cooperate with the Ministry of Defense.

Prigozhin's name is associated with the Internet Research Agency created in the summer of 2013. In 2017, it became known about the creation of the media factory by Prigozhin's structures, which included the Federal News Agency, as well as other related publications. In the United States, Prigozhin was accused of interfering in the 2016 election and in the political process.

Prigozhin is the founder of the private military company (PMCs) Wagner Group, which has been known since 2015. Prigozhin himself admitted this only in 2022. The United States and the European Union stated that the Wagner Group conducted its activities in Libya, CAR, Sudan, Mozambique and Mali.

Many experts initially characterized this event[3] as a "stab in the back for those who hold the frontline"[4]; demonstration of the "weaknesses of our system"[5], "a failure of Russian statehood"[6] and even as "the first chord of a monstrous catastrophe"[7].

However, today, two months after the revolt, it is becoming increasingly obvious that the "failure of Russian statehood"[8] was managed to be avoided. The acute phase of the crisis was quickly contained; authorities at all levels consolidated their unequivocal support for the head of state.

According to the results of sociological surveys conducted by federal and regional sociological centers, the attempted rebellion did not lead to negative trends in the dynamics of public support for the RF President *(Tab. 1)*.

V. Volodin: **"Russia's problems and troubles have always occurred only because of betrayal, internal division and treacherousness of the elites.** State Duma deputies, representing the interests of the citizens of the Russian Federation, advocate for the consolidation of forces and **support President Vladimir Vladimirovich Putin** – our Supreme Commander-in-Chief"[9].

V. Matvienko: **"The Federation Council – the chamber of regions – provides full support to the President** – the guarantor of the Constitution – and has a clear understanding of the importance of a responsible and consolidated position of the whole society, residents and leadership of all RF constituent entities in the current situation"[10].

Table 1. Dynamics of Russian President's approval rating in April – August 2023, % of respondents

President's approval rating according to...	Apr.	June	Aug.	Dynamics (+/-)	
				June to Apr.	Aug. to June
VCIOM*	77.3	75.1	73.3	-2	-2
Levada-Center**	83.0	81.0	82.0	-2	+1
VolRC RAS***	60.5	61.3	61.3	0	0

* 1,600 respondents are interviewed in at least 80 regions of the Russian Federation. Survey method – telephone interview.
Average monthly data of VCIOM based on the results of the rounds of the monitoring conducted during the following periods:
✓ April 3 – April 9, April 17 – April 23, April 24 – April 30 (April):
✓ June 5 –June 11, June 12 – June 18, June 19 – June 25 (June);
✓ July 31 – August 6, August 7 – August 13 (August).
** Levada-Center is included in the register of foreign agents. Levada-Center surveys were conducted during the following periods:
✓ April 20–26 (1,633 people);
✓ June 22–28 (1,634 people);
✓ July 20–26 (1,629 people; the latest data at the time of writing the article).
Survey method – in-person interview at the respondent's home.
*** VolRC RAS surveys were conducted in the following periods:
✓ March 21 – April 11 (April);
✓ May 16 – June 13 (June);
✓ July 12 – August 14 (August).
The survey covers 1,500 people aged 18 and older. Survey method – questionnaire at the respondent's place of residence.

[3] A detailed chronology of the armed rebellion on June 23–24, 2023 is presented, for example, on the website of the information and analytical financial publication "Banki segodnya" (https://bankstoday.net/last-articles/myatezh-prigozhina).
[4] Official telegram channel of A. Khodakovsky. Available at: https://t.me/aleksandr_skif/2747
[5] Official telegram channel of A. Dugin. Available at: https://t.me/Agdchan/10753
[6] Dugin A. After the mutiny. Bifurcation point. Available at: https://izborsk-club.ru/24505
[7] Ibidem.
[8] Ibidem.
[9] Official telegram channel of V. Volodin. Available at: https://t.me/vv_volodin/659
[10] Official telegram channel of. V. Matvienko. Available at: https://t.me/valentinamatvienko/59

It is also important to note that the events of June 23–24 did not have any significant negative impact on the government's implementation of key areas of state policy in the context of the SMO.

1. The situation on the frontline has not experienced any serious changes and remains under the control of the Russian armed forces.

2. Over the past two months, a number of steps have been taken to strengthen Russia's international relations with friendly countries, primarily with the states of the African continent, as well as with North Korea, a number of Arab countries, etc.

July 10, Sergey Lavrov took part in the Sixth Round of the strategic dialogue between Russia and members of the Cooperation Council for the Arab States of the Gulf (GCC).

July 12–15, the Russian Foreign Minister paid a working visit to Indonesia and Thailand.

July 25–27, Defense Minister Sergei Shoigu paid his first working visit to the Democratic People's Republic of Korea, where he held talks with North Korean leader Kim Jong Un, and also attended the parade in honor of the 70th anniversary of the end of the Korean War.

July 27–28, the second Russia – Africa Summit was held in Saint Petersburg, the RF President held several personal meetings with leaders of African states. According to their results, experts noted that Russia "has another powerful ally, almost the entire continent, 54 countries"[11].

3. In the context of the SMO, ongoing economic sanctions, as well as increasing military and terrorist threats from the West and the Kiev regime, the government of the Russian Federation continues active law-making to strengthen the economic, organizational and ideological foundations of Russia's domestic life (*Insert 1*), which, as we noted earlier, is important not only for the present of Russia, but also for its future; in fact, it represents "the contours of an upcoming new Social Contract"[12].

Thus, the attempted revolt was quickly stopped thanks to the consolidated support for the President on the part of all authorities, the army and society. **However, it would be a big mistake to ignore the very fact of an armed rebellion, which actually put Russia on the brink of civil war in the context of the ongoing special military operation.**

"...The political crisis that had been brewing in Russia for a long time broke out in the form of an attempted coup d'etat. Fortunately, the coup was prevented, **but no one says how to get out of the crisis that triggered it. It seems that there is a lack of conceptual vision of the essence of the problem,** as well as scientific courage"[13].

[11] The new political pole of the world: Results of the Russia–Africa summit. Available at: https://ren.tv/news/v-rossii/1128027-novyi-politicheskii-polius-mira-itogi-sammita-rossiia-afrika?ysclid=lkxm2p7nvd827699901

[12] Ilyin V.A., Morev M.V. (2022). A framework for a new Social Contract is being formed in Russia. *Economic and Social Changes: Facts, Trends, Forecast*, 15(6), 9–34. DOI: 10.15838/esc.2022.6.84.1

[13] Gaponenko A. Stalin's revolution. Available at: https://zavtra.ru/blogs/voprosi_stalinizma_8

Insert 1

Monitoring of regulatory legal acts (laws, decrees) signed by the President of the Russian Federation in the period from June 21 to August 20, 2023[14]

MEASURES AIMED AT SUPPORTING SMO PARTICIPANTS AND THEIR FAMILY MEMBERS, DEVELOPING THE MILITARY-INDUSTRIAL COMPLEX, DEALING WITH ISSUES CONCERNING MOBILIZATION, ORGANIZATION OF MARTIAL LAW, ENHANCEMENT OF ANTI-TERRORIST PROTECTION OF OBJECTS
June 24 – Federal Law 277 "On amendments to the Code of Administrative Offences of the Russian Federation". Administrative liability for violation of martial law is established in the form of administrative arrest for up to 30 days.
June 24 – Federal Law 270 "On the specifics of criminal liability for persons involved in the special military operation". The law establishes legal guarantees and grounds for exemption from criminal liability for persons called up for military service on mobilization or in wartime to the Armed Forces of the Russian Federation (exemption from criminal liability of persons in respect of whom a preliminary investigation is being carried out; with some exceptions – persons who have committed crimes of minor or moderate gravity; persons who have a criminal record).
June 24 – Federal Law 281 "On amendments to Articles 19 and 24 of the Federal Law "On the status of servicemen". Children of military personnel, volunteers and employees of the Russian Guard are given places in schools, preschool institutions and summer camps as a matter of priority.
July 24 – Federal Law 326 "On amendments to certain legislative acts of the Russian Federation". The age limit for staying in the mobilization reserve is being clarified. For soldiers, sailors, sergeants, foremen, ensigns, midshipmen who belong to the first category, the age limit increases from 35 to 40 years, to the second – from 45 to 50 years, to the third – from 50 to 55 years. The maximum age of staying in the mobilization reserve for citizens who are in reserve is increased by 5 years. For senior officers, it will be 65 years, for junior officers – 60 years, for those with other ranks – 55 years. The maximum age of staying in the mobilization reserve for senior reserve officers remains at the level of 70 years.
July 31 – Federal Law 388 "On amendments to Article 2 of the Federal Law "On the specifics of fulfilling obligations under credit agreements (loan agreements) by persons called up for military service on mobilization into the Armed Forces of the Russian Federation, persons taking part in the special military operation, as well as their family members and on amendments to certain legislative acts of the Russian Federation". The law is aimed at improving the effectiveness of measures of social support for military personnel taking part in the SMO. It clarifies the procedure for repayment of obligations under a loan agreement concluded for the purpose of acquiring residential premises using the funds of a targeted housing loan, in case of death while performing tasks during the SMO. In this case, the obligations of such a serviceman under the loan agreement are repaid by the authorized federal executive authority that ensures the functioning of the accumulative mortgage system of housing provision for military personnel.

[14] The insert is a continuation of the monitoring of the most important regulatory legal acts signed by the RF President; we have been conducting this monitoring since June 2022 (the first issue of the monitoring is presented in the article: Ilyin V.A., Morev M.V. (2022). A difficult road after the Rubicon. *Economic and Social Changes: Facts, Trends, Forecast*, 15(3), 9–41). Starting from the current issue, the adopted normative legal acts are divided into thematic blocks concerning 1) the course of the SMO and the development of the military-industrial complex; 2) regulation of the information environment and the activities of foreign agents; 3) socio-economic support for citizens, and strengthening the country's economy.

Continuation of Insert 1

July 31 – Federal Law 396 "On amendments to the Criminal Code of the Russian Federation and Article 151 of the Criminal Procedure Code of the Russian Federation". Criminal liability is established for violating the requirements for anti-terrorist protection of objects (territories). The condition for bringing to criminal liability for violation of these requirements is the fact of the previous repeated bringing of a person to administrative liability for violation of such requirements.

A violation that inadvertently caused serious harm to human health or caused major damage is punishable by a fine of up to 80 thousand rubles or in the amount of the convicted person's salary or other income for a period of up to 6 months, or by restriction of liberty for up to 3 years. If a violation entailed the death of a person, it is punished by imprisonment for up to 5 years; if it entailed the death of two or more persons, it is punished by imprisonment for up to 7 years.

July 31 – Federal Law 404 "On amendments to the Code of Administrative Offences of the Russian Federation". Administrative liability has been established for not providing assistance to military commissariats when declaring mobilization.

The fine for failure to appear at the military enlistment office on a summons without a valid reason increases (previously – from 500 to 3 thousand rubles; now – from 10 to 30 thousand rubles).

Failure to provide information about changes in marital status, education, place of work (study) or position, place of residence without registration to the military enlistment office (or the primary military registration authority) will be punishable by a fine from 1 to 5 thousand rubles.

A fine of 10 to 20 thousand rubles will be assigned to a citizen subject to primary military registration if they do not inform the relevant structure about leaving their place of residence for more than three months during the conscription period.

The penalty for failure to submit to the military registration office a list of citizens subject to initial putting on military records will be from 40 to 50 thousand rubles. for officials and legal entities – from 350 to 400 thousand rubles.

Fines are also being increased for evading medical examination: now they will amount from 15 to 30 thousand rubles; the fine will be from 3 to 5 thousand rubles for intentional damage or loss of military registration documents.

August 4 – Federal Law 432 "On amendments to certain legislative acts of the Russian Federation". Additional legislative measures have been taken to protect state secrets. The procedure for making a decision on restricting the right to leave the Russian Federation for persons who are aware of information of special importance or top secret information has been established. For example, such a decision regarding senators and deputies of the State Duma is made respectively by the Chairman of the Federation Council, the Chairman of the State Duma in the manner determined respectively by the Federation Council, the State Duma. The departure of such persons from the Russian Federation is carried out with prior notification of the FSB (its territorial body) and the SVR.

A list of circumstances is provided (death of close relatives, the need for emergency treatment, etc.), in the event of which citizens of the Russian Federation who are restricted in the right to leave the country due to their awareness of information of special importance or top secret information can temporarily travel abroad.

The concept of "secrecy regime" has been introduced, the powers of the Government are provided, including the establishment of the procedure for ensuring secrecy in the Russian Federation, as well as the issuance of acts on matters related to the departure from the Russian Federation for citizens admitted or previously admitted to state secrets.

The powers of the President of the Russian Federation on issues of ensuring the secrecy regime in the Administration of the President of the Russian Federation are specified.

August 4 – Federal Law 437 "On amendments to certain legislative acts of the Russian Federation". Changes have been made in the field of maintaining military records and ensuring attendance on the summons to the military commissariat. It is stipulated that citizens who are subject to conscription for military service are prohibited from leaving the Russian Federation from the date of placing the summons of the military commissariat in the register of sent (handed over) summonses. A ban on leaving the Russian Federation has been established as a temporary measure aimed at ensuring the appearance of a citizen subject to conscription for military service.

The obligation has been established for medical, general education and professional educational organizations to provide the information about citizens necessary for conducting military registration to the state authorities of RF constituent entities in electronic form.

Another Federal Law (439), signed by the RF President on the same day, raised the upper limit of the military age from January 1, 2024 (from 27 to 30 years).

Continuation of Insert 1

MEASURES TO PROTECT INFORMATION SECURITY, REGULATE THE ACTIVITIES OF FOREIGN AGENTS, EDUCATION AND UPBRINGING OF THE YOUNGER GENERATIONS
June 24 – Federal Law 264 "On amendments to the Federal Law "On education in the Russian Federation". Amendments have been made to the law on education. Participation in the SMO is regarded as an individual achievement of applicants, which is taken into account by educational organizations when they apply for enrollment in educational programs of secondary vocational education, as well as bachelor's and specialty programs.
June 24 – Federal Law 283 "On amendments to Article 3 of the Federal Law "On education in the Russian Federation". It is established that the Government of the Russian Federation annually, no later than May 15 of the year following the reporting year, submits a national report on the implementation of state policy in the field of education to the chambers of the Federal Assembly of the Russian Federation.
July 24 – Federal Law 358 "On amendments to certain legislative acts of the Russian Federation". It is established that public authorities, their officials, and individuals are obliged to take into account the restrictions related to the status of a foreign agent specified in Article 11 of the Federal Law "On control over the activities of persons under foreign influence". Actions (inaction) of such persons should not contribute to the violation of the legislation of the Russian Federation on foreign agents by a foreign agent. It is also envisaged that unscheduled inspections may be carried out against these persons. It is established that a foreign agent is not entitled to receive state financial and other property support, including in the implementation of creative activities.
July 24 – Federal Law 379 "On amendments to the Federal Law "On the Russian movement of children and youth". It is envisaged that this movement will be given the powers of the chief administrator of budget funds and the recipient of budget funds, as well as the authority to provide subsidies to its regional offices and provide grants. It also provides for the creation of primary branches of the movement in educational institutions of higher education. The Ministry of Education and Science of the Russian Federation is empowered to coordinate the activities of these departments.
July 31 – Federal Law 409 "On amendments to the Federal Law "On nonprofit organizations". Amendments have been made to the legislation concerning the participation of Russian individuals and legal entities in the activities of foreign nonprofit nongovernmental organizations in the territory of the Russian Federation. Persons holding state or municipal positions, positions of state or municipal service, as a general rule, are prohibited from being members of governing bodies, boards of trustees or supervisory boards, other bodies of foreign nonprofit nongovernmental organizations, as well as from engaging in paid activities funded exclusively by funds of foreign states, international and foreign organizations, foreign citizens and persons without citizenship.
August 4 – Federal Law 425 "On amendments to the Code of Administrative Offences of the Russian Federation". Amendments have been made concerning the participation of a foreign or international nonprofit nongovernmental organization in the activities on the territory of Russia. Participation in the activities of such organizations entails the imposition of an administrative fine on citizens in the amount of 3 to 5 thousand rubles; on officials – from 20 to 50 thousand rubles; on legal entities – from 50 to 100 thousand rubles. Also, a new Article 330.3 has been introduced into the Criminal Code of the Russian Federation, which provides for punishment for this type of crime, in particular, in the form of a fine in the amount of 100 to 200 thousand rubles; compulsory or forced labor; imprisonment for up to 2 years. Increased responsibility is established for the organization of the activities of such an organization.
August 4 – Federal Law 468 "On amendments to Articles 97 and 98 of the Federal Law "On education in the Russian Federation". In accordance with the Federal Law, regional, national and international comparative studies of the quality of general education are among the measures to assess the quality of education carried out as part of the monitoring of the education system. Regional comparative studies of the quality of general education are conducted by the decision of the executive authority of the constituent entity of the Russian Federation.

End of Insert 1

MEASURES FOR PROVIDING SOCIO-ECONOMIC SUPPORT TO THE GENERAL POPULATION, STRENGTHENING THE NATIONAL ECONOMY, INCLUDING IN THE INTERNATIONAL ARENA
July 20 – Decree 540 "On amendments to Presidential Decree 100, dated March 8, 2022 "On the application of special economic measures in the field of foreign economic activity in order to ensure the security of the Russian Federation". The decree on the application of special economic measures in the field of foreign economic activity in order to ensure the security of the Russian Federation has been extended until December 31, 2025
July 24 – Federal Law 339 "On amendments to Articles 128 and 140 of Part One, Part Two and Articles 1128 and 1174 of Part Three of the Civil Code of the Russian Federation". The legal regime of circulation of digital rubles as an object of civil rights is determined. For these purposes, it is envisaged that digital rubles are a kind of noncash funds. Settlements in digital rubles are carried out by transferring digital rubles by the Bank of Russia within the framework of the digital ruble platform in accordance with the legislation of the Russian Federation on the national payment system.
July 24 – Federal Law 369 "On amendments to the Federal Law "On the national payment system". Amendments have been made aimed at improving the mechanisms for countering the theft of funds from citizens' accounts: the signs of making a money transfer without the client's voluntary consent are clarified, as well as the procedure for suspending the acceptance of a client's order for execution or refusing to perform the corresponding operation in the presence of such signs, etc.
August 4 – Federal Law 422 "On amendments to certain legislative acts of the Russian Federation". The procedure for applying special economic measures aimed at prohibiting (restricting) financial transactions and (or) freezing (blocking) funds and (or) other property belonging to blocked persons, as well as financial transactions carried out in the interests and (or) in favor of such persons, is being improved. In addition, the Federal Law expands the range of persons against whom special economic measures can be applied. Such persons include, among others, legal entities controlled by foreign organizations, and (or) foreign citizens, and (or) stateless persons.
August 4 – Federal Law 448 "On amendments to the Federal Law "On special economic zones in the Russian Federation and certain legislative acts of the Russian Federation". The procedure for obtaining the status of a resident of a special economic zone by organizations and individual entrepreneurs has been simplified.
August 4 – Federal Law 414 "On excess profit tax". The law on the introduction of a one-time tax on excess profits for organizations whose average profit for 2021–2022 exceeded one billion rubles. The object of taxation is the excess profit received by the taxpayer and defined as the excess of the arithmetic mean of profit for 2021 and profit for 2022 over the arithmetic mean of profit for 2018 and profit for 2019. Taxpayers of excess profit tax are Russian organizations, and foreign organizations operating in the Russian Federation. The procedure for determining the tax base for excess profit tax and the tax rate for this tax in the amount of 10 percent are established.

June 24, following the armed rebellion in Russia, a special meeting of the G7 countries (at the level of foreign ministers) was held, during which "an action plan was discussed in case of destabilization of the situation in Russia, as well as threats emanating from Russian nuclear arsenals in case of destabilization... Similarly, a hundred years ago, Western countries discussed the future of Russia in conditions of revolutionary chaos, and the result of this discussion was the **military intervention of dozens of states, the dismemberment of the country into separate spheres of influence,** British, French, American, Japanese, occupation of a number of Russian territories and their separation from the country. **Now the same countries are again waiting with lust for a new weakening of Russia.**

A clear understanding is needed – **any internal turmoil, any anti-government rebellion,** under whatever flag and pursuing whatever "just" goals, **will automatically prompt our enemies to destroy Russia,** deprive it of sovereignty, finally achieve the right of uncontrolled exploitation of our resources, divide Russia into many separate warring quasi-states"[15].

In one of the previous articles, we analyzed in detail the goals and objectives set by the United States and the countries of the Collective West in relation to Russia. We noted that "the Collective West has been pursuing an overt anti-Russian policy and has been doing it quite openly and publicly for more than 70 years"[16], and, of course, they perceived the attempt at an armed revolt as a chance to implement those plans.

The events that have taken place are important for an objective assessment of the state of the public administration system and the state of affairs in Russia. They allowed us to see the mistakes made in the practice of organizing the public administration system, and to be convinced of their "deadly threat to the statehood and the nation" (as the President noted).

"... any internal revolt is a deadly threat to our statehood and our nation"[17].

According to A. Dugin, it is possible to point out a number of correct and incorrect theses in the "story of the military revolt"[18]. In particular, as the expert notes, it was right to support the President and condemn the attempted rebellion; but at the same time, its causes should be considered seriously in order to deeply and objectively understand the whole situation, draw appropriate lessons from it and prevent similar events in the future.

[15] Shapovalov V. The result of the mutiny. Available at: https://www.kp.ru/daily/27521/4785161/

[16] Ilyin V.A., Morev M.V. (2023). Unusual clarity. Russia is no longer the West. *Economic and Social Changes: Facts, Trends, Forecast*, 16(2), 9–34. DOI: 10.15838/esc.2023.2.86.1.

[17] The President's address to Russians on June 24, 2023. Available at: http://www.kremlin.ru/events/president/news/71496/videos

[18] Dugin A. Putin – Prigozhin: Key points are highlighted. Available at: https://zavtra.ru/blogs/putin-prigozhin_aktcenti_rasstavleni

1. It was right to support Putin in a critical situation and stand up for him.

2. It was right to condemn the rebellion.

3. It was right to take Prigozhin's views seriously and note the validity of a number of his requirements and provisions.

4. It was right to wish for the strengthening of the patriotic vector.

5. It is right to always be on the side of the Russian people and the Russian state, trying to gather all the forces together in the name of the great Victory.

6. It is right to desire more justice, honesty and sincerity in society and the state.

7. It is right to condemn betrayal when there are grounds for such condemnation.

8. It is right to give Lukashenko a standing ovation.

9. It is right to actively participate in the creation of our common destiny.

10. It is right to understand correctly that in order not to make mistakes anymore, sometimes it is necessary to make mistakes. It is human to err and Russians are no exception.

1. It was wrong to rush to tear the Wagner Group to shreds, especially for those who had supported it with all their heart a little earlier.

2. It was wrong to conclude that the "patriots were let loose by the authorities" and it is necessary to end this.

3. It is wrong to talk to Putin in the form of an ultimatum.

4. It is wrong and mean to be a liberal when your country is at war with a hostile liberal civilization.

5. It is wrong to explain everything with money, clan battles and intrigues. Indeed, all this is there, but such explanations speak only about the pettiness and insignificance of their advocate themselves – the story is deeper and more complicated.

6. It is wrong to be a passive observer at a critical moment in the life of the people.

And the reasons for what happened indicate, first of all, the shortcomings of the public administration system created in the previous 30 years.

Let us recall that it began to be built, in fact, back in the mid-1950s, during the period when Nikita Khrushchev was First Secretary of the CPSU Central Committee (1953–1964). According to experts it was then that "the party abandoned its role as the major (conceptual and ideological) force for the development of society, the moral and intellectual leader of Soviet civilization"; those events triggered internal "fermentation" of the elites and eventually led to the betrayal of national interests and the collapse of the USSR.

"After Stalin's death, the party leadership did not dare to continue the work of his life. **The Party abandoned its role as the main (conceptual and ideological) force for the development of society, the moral and intellectual leader of Soviet civilization. The party elite preferred the struggle for power and gradually reborn into a new class of "masters", which culminated in a new civilizational and geopolitical catastrophe in 1991...**

The Soviet system and economy were so stable that unjustified or destructive actions of the supreme power could not immediately cause a catastrophe... However, Khrushchev did the main thing: his de-Stalinization and "perestroika-1" dealt a **fatal blow to the ideological foundations** of Soviet civilization. The destruction processes were launched and led to the 1991 disaster"[19].

[19] Samsonov A. How Khrushchev destroyed the foundation of the Soviet state. Available at: https://topwar.ru/151907-kak-hruschev-razrushil-fundament-sovetskogo-gosudarstva.html

After the collapse of the USSR, the elites who seized power created a system of oligarchic capitalism (or "crony capitalism", "elite and criminal capitalism", as some experts call it), actually bringing the country to the "edge of an abyss" by the end of the 1990s. According to experts, "the ruling class, carrying out the liberal-bourgeois reforms of the 1990s, was guided not by the desire for happiness for all Russians, but completely different motives... **the largest part of the reformers simply used liberal-market concepts for their own selfish purposes...**"[20]

"One of the main mottos of Vladimir Putin's first presidential term[21] was "equidistance of oligarchs", or rather "equidistant position of all market entities from the authorities", as he stated on February 28, 2000 at a meeting with proxies.

The President was able to make the system manageable "in manual mode". At least, it was no longer possible to carry out reforms similar to the 1995 "collateral auctions" reform[22], when major national corporations, industrial enterprises, etc. were "handed over" for a song to the oligarchs for their personal use. As a result, **"during this period, big business lost control over top officials (as it used to have in the 1990s)"**[24].

Vladimir Putin: **"Keeping all the players on the market at an equal distance from the authorities,** on the one hand, and guaranteeing property rights, on the other, is a cornerstone of the political and economic spheres"[23].

In April 1994, **34% of Russians** answered "I approve" to the question "Do you approve or disapprove of how Boris Yeltsin is coping with the duties of the President of Russia?"

By November 1999, their share decreased to **8% (the share of negative assessments increased from 66% to 92%, respectively)**[25].

This was a priority task for domestic policy, since without laying the appropriate groundwork it was impossible to implement a further nationally and socially oriented political course; in fact, a course to regain the public's trust that the government had lost in the 1990s.

However, even after taking state institutions under "hands-on management" and receiving a "credit of trust" from the population for this (as evidenced by the fact that Vladimir Putin was re-elected as head of state four times), the oligarchic-clan principle of the public administration system has not disappeared and, in fact, remains to this day.

[20] Baklanov V.I. The formation of the Russian oligarchic capitalism of the peripheral type in the 1990s. Available at: http://historick.ru/view_post.php?cat=11&id=201

[21] Matveichev O., Danilin P., Martynov A. et al. (2019). Putin's mission: A report. Fund for the implementation of public projects "Vremya". Moscow. P. 45.

[22] We should note that the very idea of "collateral auctions" as one of the mechanisms of privatization was first put forward by the President of ONEKSIMBank V. Potanin on March 30, 1995 at a meeting of the Government of the Russian Federation. And already on August 31, 1995, President of the Russian Federation Boris Yeltsin signed a decree "On the procedure for the transfer of federally owned shares in 1995 as collateral" (source: Collateral auctions in Russia in November – December 1995. Available at: https://tass.ru/info/3114781).

[23] Opening address at a meeting with high-level campaign workers. Available at: http://www.kremlin.ru/events/president/transcripts/24146

[24] RIA-novosti. December 6, 2017. Available at: https://ria.ru/20171206/1508182139.html

[25] Source: VCIOM "Arkhivarius" database. The data present the findings of the survey when this question was asked for the first time and those when this question was asked for the last time.

Already in 2012, experts at Minchenko Consulting described the public administration system in Russia as **"a conglomerate of clans and groups that compete with each other for resources... there are a number of structural contradictions within Putin's "big government"...** moreover, the ruling elite, in addition to solving its own management tasks, **is focused on ensuring its stability over a long period of time..."**[26] *(Fig. 1)*.

By and large, this interpretation of the situation by experts remains in 2023 as well (although with more complex schemes of intra-elite interactions) *(Fig. 2)*: "In the real world, **every representative of the elite has a large number of business lines, connections, interests, motives and goals...** A large number of junior partners, allies, friends and enemies create intricate and complex configurations when a new support unit is formed for each serious decision or project"[27]. It is extremely difficult, almost impossible to reconcile these intra-elite "blocks" and "configurations", even in a system controlled by the President in "manual mode"; and therefore, as experts note, this system is occasionally shaken by "elite and near-elite conflicts".

Thus, "underhand games" and the struggle of clan interests within the elites have always been there and still remain. And today, in the conditions of the SMO, they are becoming more vivid, more visible, **since their consequences lead to a direct threat to national security, which is also felt by the broad strata of the population.**

> **"During the decades that Putin has been in power, this is obviously not the first conflict in elite circles or near them. There are too many people, too many conflicting interests.** The President is used to being the arbiter in such disputes... The unprecedented nature of the current conflict lies in the degree of its publicity. One could speculate about the former ones. Here everything was stated with military directness... **At the top, they understand perfectly well that it is difficult to reconcile individual people within the elite... it is much easier to marginalize an ambitious official or businessman than a paramilitary structure, which the government uses as an important tool – and is going to use further"**[28].

> "The main part of the oligarchy was dissatisfied with these actions of government officials [SMO], as it suffered from the economic sanctions imposed by the West. Someone demonstrated their dissatisfaction be fleeing Russia and withdrawing their capital from the country. And someone began to look for an opportunity to remove those government officials, and first of all President Vladimir Putin, from power. **It was this group that played on the political ambitions of Evgenii Prigozhin, head of the Wagner Group"**[29].

[26] Vladimir Putin's Big Government and the Politburo 2.0: A report by Minchenko Consulting. August 2012. Available at: https://minchenko.ru/analitika/?curPos=65

[27] Shkolnikov A. Myths about clan battles. Available at: https://zavtra.ru/blogs/mifi_o_bitvah_klanov

[28] On the public transformation of the rebellion into an intra-elite dispute. Available at: https://www.ng.ru/editorial/2023-07-12/2_8771_red.html?ysclid=lkxrj9p379535508744

[29] Gaponenko A. Stalin's revolution. Available at: https://zavtra.ru/blogs/voprosi_stalinizma_8

Figure 1. Members of the “Politburo 2.0” in 2012

Source: Vladimir Putin’s Big Government and Politburo 2.0: Minchenko Consulting report. August 2012. Available at: https://minchenko.ru/analitika/?curPos=65

Figure 2. Members of the “Politburo 2.0” in 2023

Source: Russian elites a year after the start of the SMO: Minchenko Consulting report. May 2023. Available at: https://minchenko.ru/analitika/analitika_101.html

For example, the fact that this was one of the main causes of the crisis of statehood, expressed in the June 24 revolt[30] is proved by the goals of the so-called "March of Justice", voiced by E. Prigozhin himself, and the assessments of independent experts indicating that the leader of the Wagner Group is **not an independent figure, but only representing the interests of certain "patrons"**.

The rapid relief of the crisis can be called a kind of "draw" in the battle of clans, while in the context of the common goals of national security and the struggle for sovereignty that Russia continues to pursue during the SMO, this is a clear "loss" for the President, for the public administration system and ultimately for the country as a whole, since the crisis itself demonstrated (to foreign countries, too) the

Nezavisimaya gazeta (editorial): "A month after the revolt, it is obvious that Prigozhin survived thanks to **his connections in the highest echelons of power**. Most likely, these connections, these people were and remain dissatisfied with Defense Minister Sergei Shoigu and Chief of the General Staff Valery Gerasimov. Apparently, **they used Prigozhin for an unprecedented attack on the two key figures – leaders of the Russian Armed Forces...** It can be argued that Prigozhin, in addition to his own commercial interests, fought for **someone else's interests in a different time perspective"**[31].

P. Skorobogaty: "It must be understood that Prigozhin is **certainly not an independent figure...** since his very vigorous activity in Saint Petersburg, **he certainly had partners, companions, and curators in various state authorities of the Russian Federation, including the Presidential Administration**. And later, when he started a very large business in Africa, which concerned not only the private military company (the campaign associated with Prigozhin was engaged in politics there, **lobbying for the interests of big business,** etc.; **a campaign in which a large number of those in power and those who make decisions were involved). And, of course, after he joined the SMO, these connections did not go away ... he has his own clear role; in this sense, he has connections with many figures"**[32].

[30] See, for example (direct quotes of E. Prigozhin. Sources: Online Information Publication Kun.uz. Available at: https://kun.uz/ru/news/2023/07/03/prigojin-zapisal-pervoye-obrashcheniye-za-nedelyu-i-nazval-tseli-marsha-spravedlivosti; Online edition Kurer-sreda. Available at: https://dzen.ru/a/ZJnDRBjKZ377W4fC):

1. "Our "March of Justice" was aimed at **fighting traitors and mobilizing our society**".
2. "The purpose of the campaign was to prevent the destruction of the Wagner Group and **to bring to justice those persons who made a huge number of mistakes during their unprofessional actions. This was demanded by the public**; all the servicemen who saw us during the march supported us".
3. "We went **to demonstrate our protest, not to overthrow the government in the country**".
4. "In the "March of Justice", in addition to the struggle for existence, they [civilians] saw **support for the fight against bureaucracy and other ailments that exist in our country**".
5. Our "March of Justice" showed a lot of what we talked about earlier, **the most serious security problems throughout the country...**"

[31] A month after Prigozhin's revolt. Available at: https://www.ng.ru/editorial/2023-07-23/2_8780_red.html?ysclid=lktc0xzc7b221294017

[32] Skorobogaty P. (deputy editor-in-chief, editor of the policy department of the *Ekspert* journal, expert at the Center for Applied Research and Programs). Video interview in the "Neutral Zone" program (video blog of Israeli journalist A. Waldman). Available at: https://www.youtube.com/watch?v=vt2qH1Sk4dc

vulnerability of the system of oligarchic capitalism managed via "hands-on" approach.

> "The damage that Evgenii Prigozhin inflicted on the Russian state with his psychopathic craving for power is also obvious. And it's not just about the dead pilots and the loss of unique equipment.
>
> **First, it will be necessary to restore the country's reputation abroad,** both in the West and in friendly countries, where a legitimate question has arisen about the controllability of internal processes in Russia and the potential of its armed forces...
>
> **Second, difficulties may arise with our foreign operations and private military companies** as their effective tool... How can we now trust people with weapons who have arrived from abroad, especially the authorities in those regions where coups and uprisings happen with enviable regularity?"[33]

One of the leading Russian sociologists Zh.T. Toshchenko[34] in his article "Social contract as a noumenon: The experience of sociological understanding"[35] conducted an in-depth analysis of historical aspects related to the formation of the concept of Social Contract. Based on this analysis, it can be concluded that the entire history of humankind (including the Russian experience) shows that the **inability of the authorities to adjust their policies in accordance with the key demands of society or a purely formal approach of the state to reach agreement with the majority of the population of the country ultimately leads to disastrous consequences for the statehood.**

We find it necessary to emphasize the author's idea that "unity at the moral level is especially important", "moral unity... is based on the fundamental value orientations of the main social forces, **the coordination of which is the function of the state**".

> "The Social Contract involves ensuring harmony and balance of interests not only between the whole people and the government, but also between the social communities and groups within society that make up this people; in other words, **ensuring that the diversity of interests of social communities and groups is taken into account** – and not only at the political, economic and social levels. **It is especially important to agree on the moral level, since it is the most fundamental level, ensuring the true essence and nature of the Social Contract.** Moral unity arises on the basis of observing and maintaining trusting relationships, **eliminating any attempts at confrontation, rivalry, prejudice,** is built on the basis of **fundamental value orientations of the main social forces, the coordination of which is largely the responsibility of the state authorities"**[36].

This is what underlies the Social Contract, in which the main thing is not "the actual or formal participation in addressing economic, social and political issues", **but "the meaning universally recognized by all participants, for the sake of which the existence of the state is possible"**[37].

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[33] Skorobogaty P. (2023). Only business or a big "scrape". *Ekspert*, 27, p. 19.

[34] Zhan T. Toshchenko – Corresponding Member of the Russian Academy of Sciences, Doctor of Sciences (Philosophy), Professor; Honorary Doctor of RAS Institute of Sociology.

[35] Toshchenko Zh.T. (2023). Social contract as a noumenon: The experience of sociological understanding. *Sotsiologicheskie issledovaniya*, 6, 3–15.

Noumenon is a philosophical concept denoting an intelligible essence, an object of intellectual contemplation, as opposed to a phenomenon as an object of sensory contemplation.

[36] Toshchenko Zh.T. (2023). Social contract as a noumenon: The experience of sociological understanding. *Sotsiologicheskie issledovaniya*, 6, p. 12.

[37] Ibidem. P. 8.

We should say that topic of Social Contract attracts the attention of scientists more and more often[38]. In general, worldwide, as RAS Corresponding Member V.E. Dementiev points out, referring to Google Academy data[39], while during the period from 2001 to 2020, about 16 thousand materials appeared on the Internet every five years on issues related to the Social Contract, "then starting from 2021, in just two and a half years, there have been 15,800 such publications"[40]. And this is no coincidence, because, on the one hand, "the beginning of Russia's special military operation in Ukraine is a turning point in Russian history"[41]; "the situation itself causes an objective need to formulate the task of forming a new Social Contract after the completion of the SMO"[42]. On the other hand, thanks to the SMO, the whole world came into motion, many countries (China, Brazil, India, Iran, the countries of the African continent, etc.) began an active struggle to strengthen their national sovereignty against the hegemony of the United States and the countries of the Collective West.

There has already been an experience of a formal approach to the creation of a Social Contract in modern Russian history (after the collapse of the USSR and the change of the social system). It was the "Agreement on Public Consent" signed on April 28, 1994 by the President of the Russian Federation Boris Yeltsin, Prime Minister Viktor Chernomyrdin, Chairman of the upper house of Parliament V.F. Shumeyko, Chairman of the lower house of Parliament I.P. Rybkin, as well as a number of representatives of authorities, religious denominations, political parties and social movements[43].

The writer, historian and lawyer E.M. Strigin noted in one of his books: "Why not remember about consent, when all the power is in your hands, you can talk about peace... just before the signing of the agreement in April 1994, V. Zorkin stated: "One of the most dangerous features of the political situation in today's Russia **is the split of the leading elite strata of society into warring ideological groups and political clans"**[44].

[38] See, for example:

1. Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. *Journal of Institutional Studies*, 3, 74–90.

2. Polterovich V.M. Competition, collaboration, and life satisfaction. Part 1. The Seven of European leaders. *Economic and Social Changes: Facts, Trends, Forecast*, 15(2), 31–43.

3. Polterovich V.M. (2022). Competition, collaboration, and life satisfaction. Part 2. The fundament of leadership – collaborative advantage. *Economic and Social Changes: Facts, Trends, Forecast*, 15(3), 42–57. DOI: 10.15838/esc.2022.3.81.2

4. Toshchenko Zh.T. (2023). Social contract as a noumenon: The experience of sociological understanding. *Sotsiologicheskie issledovaniya*, 6, 3–15.

5. Dementiev V.E. (2023). Communicative concept of the social contract and formation of the course of economic development. *Economic and Social Changes: Facts, Trends, Forecast*, 16(4), 57–70.

[39] Google Academy is a search engine for scientific publications. The portal is considered the world's largest academic search engine, with a coverage rate of up to 90% of all English-language articles.

[40] Dementiev V.E. (2023). Communicative concept of the social contract and formation of the course of economic development. *Economic and Social Changes: Facts, Trends, Forecast*, 16(4).

[41] Balatsky E.V. Russia 2022: The content of a new social contract. Available at: https://kapital-rus.ru/articles/article/rossiya_2022_goda_soderjanie_novogo_obschestvennogo_dogovora/

[42] Ilyin V.A., Morev M.V. (2022). A framework for a new Social Contract is being formed in Russia. *Economic and Social Changes: Facts, Trends, Forecast*, 15(6), 9–34.

[43] Melnikova V.A. One look back. "Agreement on Public Consent", April 28, 1994. Available at: https://kprf-ugra.ru/archives/13169

[44] E.M. Strigin (writer, historian of special services, lawyer, journalist; staff member of state security agencies, lieutenant colonel; public figure, deputy of the Krasnoyarsk City Council). From the KGB to the FSB. Book 2. From the RF Security Ministry to the RF Federal Counterintelligence Service. Available at: http://res.krasu.ru/kgb-fsb/?book

According to experts, the authorities remembered about public consent after the events of "Black October 1993"[45] and the adoption of a new Constitution on December 12, 1993 (which, as we know, imposed a ban on official ideology in Russia).

The agreement was designed for two years; it stated, in particular, that its participants "assure that they will take all necessary measures to establish stability in the country, without which it is impossible to get out of the economic crisis"[46].

The priority tasks that the Government of the Russian Federation **undertook** to solve already **in 1994**, were as follows:

✓ "reduce the level of inflation and control it",

✓ "create prerequisites for economic recovery";

✓ "ensure the elimination of budget arrears in the payment of wages";

✓ "pursue an active social policy **aimed at stabilizing and subsequently improving the standard of living**, adapting the able-bodied population to new conditions, targeted protection of its most vulnerable strata from the negative manifestations of transitional processes, **reducing the level of income differentiation**, implementing the principles of social partnership";

✓ "develop a federal program to promote employment and other social programs and organize their implementation"[47].

However, as practice has shown, "many agreed to reconciliation, but not all"[48]; "some of the political forces simply refused to join it"[49]. In particular, the leader of the Communist Party of the Russian Federation G. Zyuganov noted that it was **"a contract not of society, but of officials"**[50].

> "At the ceremony of signing the Agreement on Public Consent, Zyuganov, in accordance with the decisions of the faction, defiantly refused to sign the document, but conveyed the demands of the party and the faction to the government in writing. The agreement was also not signed by Aman Tuleyev, Grigory Yavlinsky and Mikhail Lapshin, the leaders of the irreconcilable opposition Viktor Anpilov and Viktor Tyulkin... **The absence of the signature of Zyuganov, the main opposition leader, practically disavowed the document and made it meaningless for the authorities"**[51]

[45] The events of the "Black October 1993" are also known as the "Storming of the White House" or the "Yeltsin Coup of 1993". They mean the dispersal of the Congress of People's Deputies and the Supreme Soviet of the Russian Federation, accompanied by mass riots and armed clashes. As a result of these events, there was a "violent termination of the Soviet model of power that had existed in Russia since 1917" (source: https://ru.wikipedia.org) and a new Constitution of the Russian Federation was adopted.

[46] Text of the Agreement. Available at: https://rulaws.ru/acts/Dogovor-ot-28.04.1994/

[47] Ibidem.

[48] *Kommersant*. April 29, 1994. Available at: https://www.kommersant.ru/doc/77479

[49] The following parties refused to sign the Agreement: the Communist Party, the Agrarian Party, the National Salvation Front, the Russian National Sobor, the Labor Russia movement and some other organizations and movements (source: Melnikova V.A. "Agreement on Public Consent", April 28, 1994. Available at: http://poznaemvmeste.ru/index.php/9-pervyj-poslednij/2202-dogovor-ob-obshchestvennom-soglasii-28-aprelya-1994-goda)

[50] *Kommersant*. April 29, 1994. Available at: https://www.kommersant.ru/doc/77479

[51] Strigin E.M. From the KGB to the FSB. Book 2. From the RF Security Ministry to the RF Federal Counterintelligence Service. Available at: http://res.krasu.ru/kgb-fsb/?book

In addition, in the end, the promises of the authorities were never fulfilled or were formally fulfilled, as well as the very approach to creating a Social Contract in the country.

1. For example, the population with monetary incomes below the subsistence level in 1994, compared with 1993, decreased by 10 percentage points (from 32 to 22%), but in 1995 it increased again (by 3 percentage points, to 25%), and by 1999 it increased by 5 percentage points (up to 30%; *Tab. 2*).

2. The real disposable income of the population since the adoption of the Agreement on Public Consent (1994) by 1999 decreased by 27% (from 113 to 86%). The R/P 10% ratio has not actually changed (14–15 times).

3. The federal program for the promotion of employment of the population of the Russian Federation for 1994 has indeed been developed[52], but, as statistics show, the share of unemployed citizens in Russia continued to grow (from 8% in 1994 to 13% in 1999), the number of people employed in the economy decreased (from 69 to 64%).

The reaction of society to the formal approach of the authorities to the solution of such an acute issue as the achievement of public consent was, in fact, quite predictable: in 1995 and 1999 (that is, before the beginning of Vladimir Putin's presidential terms and before the creation of the United Russia party on December 1, 2001) it was the RF Communist Party (the party that had not supported the 1994 Agreement on Public Consent) that received the majority of votes in the election to the RF State Duma (in 1995 – 22.3%, in 1999 – 24.3%; *Tab. 3*).

Table 2. Dynamics of indicators of the standard of living (1992–1999)

Indicator	Year								Dynamics (+ / -)
	1992	1993	1994	1995	1996	1997	1998	1999	1999 to 1994
Population with incomes below the subsistence level, million people	49.7	46.9	33.3	36.6	32.7	30.7	34.3	43.8	+11
Population with incomes below the subsistence minimum, % of total population	33.5	31.5	22.4	24.7	22.1	20.8	23.4	29.9	+8
People's real disposable income, % compared to the previous year	52.5	116.4	112.9	84.9	100.1	105.3	83.7	85.8	-27
R/P 10% ratio, times	8.0	11.2	15.1	13.5	13.0	13.5	13.8	13.9	-1
Unemployment rate, % of economically active population	5.2	5.9	8.1	9.5	9.7	11.8	12.9	13.4	+5
Number of people employed in the economy, million people	72.1	70.9	68.5	67.1	66.0	64.6	63.6	64.0	-5
Source: Russian Statistical Yearbook – 2000. Available at: https://istmat.org/node/23792									

Table 3. Top three parties that obtained the highest number of votes in the 1995–2003 parliamentary elections

Party	Dec. 17, 1995		Партия	Dec. 19, 1999		Партия	Dec. 7, 2003	
	%	abs. people		%	abs. people		%	abs. people
KPRF	22.30	15432963	KPRF	24,29	16196024	United Russia	37.56	22776294
LDPR	11.18	7737431	Yedinstvo	23,32	15549182	KPRF	12.61	7647820
Nash dom – Rossiya	10.13	7009291	Otechestvo – Vsya Rossiya	13,33	8886753	LDPR	11.45	6944322
Source: official website of the Central Election Commission of the Russian Federation. Available at: http://old.cikrf.ru/								

[52] About the federal employment assistance program of the Russian Federation for 1994: RF Government Resolution 683, dated June 15, 1994.

From the experience of the adoption and implementation of the 1994 Agreement on Public Consent it can be concluded that public statements (whatever form they may have) should, first, be coordinated not just with the majority, but with those participants in the political process who express the opinion of the majority of the population; second, they should not just be declared, but also supported by actual deeds, the results of which can be seen by the public.

However, it looks like after almost 20 years the "Politburo 2.0" (the new management team, the Presidential Administration, which implemented the May 2012 decrees and the 2018 national projects) has not learned this lesson. In previous articles, we have repeatedly cited expert opinions on this issue[53].

As statistics show, many of the key indicators identified in the May 2012 decrees[54] (including the growth of real wages, life expectancy, etc.), have not been achieved on time and, by and large, remain not achieved at the present time (*Tab. 4*).

Table 4. Summary of the achievement of targets, established by the May decrees of the President of the Russian Federation in 2012

"Increasing the share of high-tech and knowledge-intensive industries in GDP by 2018 in 1.3 times compared to the level of 2011"						
Share of high-tech and knowledge-intensive industries in GDP of the Russian Federation, **%**	Data			Deviation (+/-), times		
	2011	2018	2022	2018 target	2018 to 2011 fact	2022 to 2011 fact
	19.6	21.3	22.6	+1.3	+1.1	+1.2
"Creating and upgrading 25 million high-performance jobs by 2020"						
Number of high-performance jobs in Russia as a whole, thousand unit**s**	Data			Deviation (+/-), thousand units		
	2013	2020	2022	2020 target	2020 to 2013 fact	2022 to 2013 fact
	17492.8	21 946.6	22 862.4	+7507	+4454	+5369
"1.4 – 1.5-fold increase in real wages in by 2018"						
Real wages of employees of organizations, rubles, at comparable prices for 2022	Data			Deviation (+/-), times		
	2011	2018	2022	2018 target	2018 to 2011 fact	2022 to 2011 fact
	49294.8	57325.6	65338.0	+1.5	+1.2	+1.3
"Raising domestic research and development expenditures to 1.77 percent of GDP by 2015"						
Domestic research and development expenditures, % of GDP	Data			Deviation (+/-), p.p.		
	2011	2015	2021	2015 target	2015 to 2011 fact	2021 to 2011 fact
	1.02	1.1	1.0	+1.77	+0.08	-0.02
"Ensure an increase in life expectancy in the Russian Federation up to 74 years by 2018"						
Life expectancy, years	Data			Deviation (+/-), years		
	2011	2018	2022	2018 target	2018 fact	2022 fact
	69.83	72.91	72.73	+5.17	+3.08	+2.90
Source: Federal State Statistics Service. Available at: https://rosstat.gov.ru/						

[53] See, for example:

1. Ilyin V.A., Morev M.V. (2018). "Russian Federation – a welfare state?": Assessing the results of 25 years of implementation of Article 7 of the Russian Constitution. *Economic and Social Changes: Facts, Trends, Forecast*, 11(6), p. 20.

2. Ilyin V.A., Morev M.V. (2019). "Intellectual feebleness" of the ruling elites and the "deep people" of the "long state". *Economic and Social Changes: Facts, Trends, Forecast*, 12(2), 9–35.

3. Ilyin V.A., Morev M.V. Vote of confidence for the President is confirmed. Achievement of socio-economic development goals before 2024–2030 is uncertain. *Economic and Social Changes: Facts, Trends, Forecast*, 13(4), 9–37.

[54] See, for example:

Presidential Decree 596, dated May 7, 2012 "On long-term state economic policy";

Presidential Decree 597, dated May 7, 2012 "On measures to implement the state social policy";

Presidential Decree 599, dated May 7, 2012 "On measures to implement state policy in the field of education and science".

Moreover, according to statistics, the same applies to the prospects for their implementation, taking into account the adjustments in the Presidential decrees of May 7, 2018[55] and July 21, 2020[56] (*Tab. 5*).

These facts show that the specific instructions of the head of state have not been carried out for years or were carried out inefficiently, and according to some experts, they were simply "sabotaged"[57] by the ruling elite, led by the "Politburo 2.0".

A similar situation took place with regard to the release of a single history textbook. Let us recall that the President gave the instruction to prepare it on February 19, 2013, noting the importance of a "structured view" of the younger generation about Russia's past, a "unified concept" and a "unified logic" of studying Russian history in order to avoid "internal contradictions" and "double interpretations".

"... Our children's heads are filled with a mishmash of information obtained from a textbook, TV, the Internet, and there is no structured idea about the past of our Homeland, including the history of the peoples inhabiting it...

It seems to me that the system for preventing the interpretations that distort the historical past has not yet been sufficiently built. Perhaps I agree that a single textbook on Russian history will solve this problem... Perhaps we should think about introducing common history textbooks for Russian secondary schools, designed for different ages **but built into a single concept and following a single logic of continuous Russian history, the relations between all its stages and respect towards all the episodes of our past..."**[58]

Table 5. Brief information on achieving the targets set by Presidential Decree 474, dated July 21, 2020 "On the national development goals of the Russian Federation for the period through to 2030"

National development goal **"Increasing life expectancy to 78 years"**					
Life expectancy, years	Data			Deviation (+/-)	
	2018 (fact)	2022 (fact)*	2030 (target)	2030 to 2018 target	2022 to 2018 fact
	72.91	72.73	78.0	+5.09	-0.18
* Without taking into account statistics for the Donetsk People's Republic (DPR), Lugansk People's Republic (LPR), Zaporozhye and Kherson oblasts.					
National development goal **"Halving the poverty rate compared to the indicator of 2017"**					
Number of people with monetary incomes below the poverty line (subsistence level)	Data			Deviation (+/-)	
	2017 (fact)	2022 (fact)*	2030 (target)	2030 to 2017 target	2022 to 2017 fact
million people	18.9	14.3	9.5	-9.5	-4.6
% of total population	12.9	9.8	6.5	-6.5	-3.1
* Without taking into account statistics for the Donetsk People's Republic (DPR), Lugansk People's Republic (LPR), Zaporozhye and Kherson oblasts. Source: Federal State Statistics Service. Available at: https://rosstat.gov.ru/					

[55] On national goals and strategic objectives of the development of the Russian Federation for the period up to 2024: Presidential Decree 204, dated May 7, 2018.

[56] On the national development goals of the Russian Federation for the period through to 2030: Presidential Decree 474, dated July 21, 2020.

[57] See, for example:

1. Podosenov S. Governors that are sabotaging the May presidential decrees will be dismissed. Available at: https://iz.ru/news/567314
2. ONF leaders accused local officials of sabotaging presidential decrees. Available at: https://66.ru/news/politic/172058/
3. Chaldey A. Why are national projects stalling? Available at: https://regnum.ru/article/2660159

[58] Vladimir Putin's speech at the meeting of the Council on Interethnic Relations, February 19, 2013. Available at: http://kremlin.ru/events/president/news/17536

However, as experts note, "the order was not fulfilled then: discussions within the professional community impeded the process"[59]. The textbook for grades 10–11 was presented only 10 years later, on August 7, 2023; in the conditions of the special military operation that has been carried out for a year and a half.

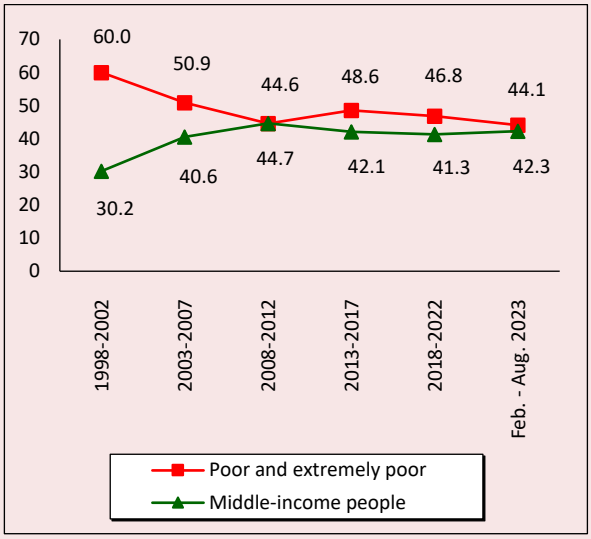
That is, even in the context when, for many years preceding the SMO it was necessary to protect the historical memory and education of the younger generations of Russians, the President, apparently, failed to exert a decisive influence on the liberal top of the ruling elites in the implementation of such a specific, but very important tool as the preparation of a unified textbook on the history of Russia. It was possible to do this only during the special military operation that had already begun.

It should also be noted that the Constitution of the Russian Federation stipulates that "the Russian Federation is a social state" (Article 7), in which "everyone is equal before the law and the court" (Article 19). The Federal Law "On combating corruption" enshrines the principle of "inevitability of responsibility for committing corruption offenses"[60]. The Presidential Decree "On the national development goals of the Russian Federation for the period through to 2030" sets the goal of "reducing the poverty level by half compared to the indicator of 2017"[61]. And the decree "On the approval of the foundations of state policy for the preservation and strengthening of traditional Russian spiritual and moral values"[62], signed by the President relatively recently (already in the conditions of the SMO), points out that justice is one of the "traditional values" and "moral guidelines that form the worldview of Russian citizens" (pp. 4–5), which the state "considers as the basis of Russian society" (p. 7).

Nevertheless, sociological research we conducted in the monitoring mode clearly shows that:

✓ for many years, from 44 to 50% of the population subjectively classify themselves as "poor and extremely poor" (*Fig. 3*); moreover, from 2013 to the present, the proportion of the "poor and extremely poor" exceeds the proportion of those who classify themselves as "middle-income" people (as of February – August 2023 – 44 and 42%, respectively);

Figure 3. Distribution of answers to the question "Which category do you belong to, in your opinion?", % of respondents*



* Data are given for each five-year period over the entire duration of the survey (1998–2023)
Source: VolRC RAS data.

[59] Savitskaya N. The first state textbook after the collapse of the USSR. *Nezavisimaya gazeta*. August 10, 2023.

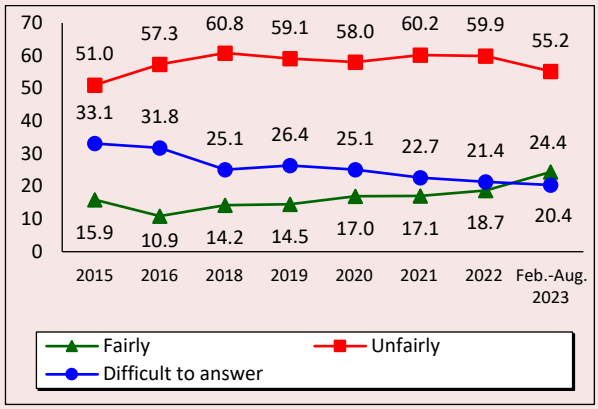
[60] On combating corruption: Federal Law 273-FZ, dated December 25, 2008 (as amended July 10, 2023) (with amendments and additions, effective as of August 13, 2023). Available at: https://www.consultant.ru/document/cons_doc_LAW_82959/9c25ae5432dd35c13bb140322c13ccc304cc10cf/

[61] On the national development goals of the Russian Federation for the period through to 2030: Presidential Decree 474, dated July 21, 2020. Available at: http://www.kremlin.ru/acts/bank/45726

[62] On the approval of the foundations of the state policy for the preservation and strengthening of traditional Russian spiritual and moral values: Presidential Decree 809, dated November 9, 2022. Available at: http://www.kremlin.ru/acts/bank/48502

✓ over the past 8 years (2015–2023), more than 50% of Russians have noted that "modern Russian society is arranged unfairly", and during this period their share has increased from 51 to 55% (*Fig. 4*);

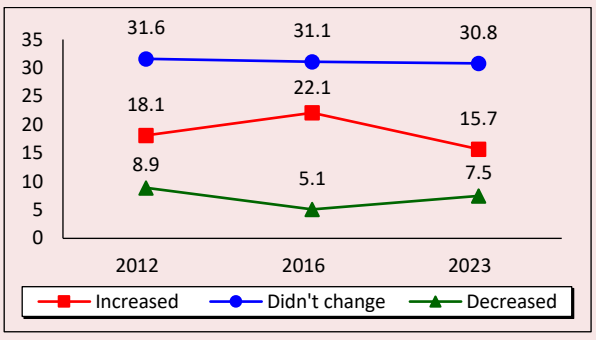
Figure 4. Distribution of answers to the question "Do you think modern Russian society as a whole is arranged fairly or unfairly?", % of respondents*



* The question has been asked since 2015. The average annual data are presented.
Source: VolRC RAS data.

✓ over the past 11 years (from 2012 to 2023), the share of people who believe that the level of corruption in Russia is growing has not actually changed (in 2012 – 18%, in 2023 – 16%; *Fig. 5*). The share of Russians who note a decrease in the relevance of the problem of corruption in the country, as well as 11 years ago, does not exceed 10%.

Figure 5. Distribution of answers to the question "How, in your opinion, has the level of corruption in our country changed over the past year?", % of respondents*



* Surveys were conducted in 2012, 2016 and 2023.
Source: VolRC RAS data.

These facts demonstrate the importance of the role of the "Politburo 2.0" in the implementation of the informal essence of the Social Contract, the assessment of which cannot be reduced to citizens' attitude toward the work of the RF President alone, but requires the achievement of public consent in many aspects:

✓ ensuring a socially fair organization of the state and society;

✓ subjective perception of the dynamics of the standard of living and quality of life;

✓ attitude toward the entire system of public administration, or rather, toward the worldview and values that guide its representatives – the ruling elites of the country.

Society remains dissatisfied with the dynamics of solving the key issues underlying the Social Contract, such as "the requirement for a new ideology", "the requirement to define the national economic system", "the requirement to de-bureaucratize the economy", "combating extreme forms of inequality"[63]. **As for the nonobservance of human rights and freedoms, "which are usually fixed in the Constitution of the country and other official legal documents", this leads, as a rule, to the fact that such a situation "is used by destructive forces to their own benefit"[64]. This is exactly what Russia actually faced on June 24, 2023.**

Of course, it should be borne in mind that as the needs are fulfilled, the level of claims of the population also increases. Experts say that "in Russia many consider themselves financially deprived and do not notice that the standard of consumption has been established at quite a high level among urban residents... Many (not all, but many) have actually raised the bar for life requirements so much that it is very difficult to

[63] Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. *Journal of Institutional Studies*, 3, 74–90.

[64] Toshchenko Zh.T. (2023). Social contract as a noumenon: The experience of sociological understanding. *Sotsiologicheskie issledovaniya*, 6, 3–15.

please them"[65]. That is why dynamic changes are so important in solving the problems of reducing inequality, raising the standard of living and improving quality of life, etc. **Without positive and stable dynamics between society and the state that is felt by a wide segment of the population, a vacuum is created that can only be overcome under extreme, forced force majeure circumstances (for example, an unprecedented increase in threats to national security). But this is only a temporary "tightening of knots" rather than compliance with the Social Contract.**

The June 24 revolt is not the first and, most likely, not the last manifestation of the system-wide errors committed in creating the system of public administration over the 30 years preceding the SMO. In fact, the system of public administration (and the country as a whole) faced this in 1917, in 1991, in 1993, and almost always it led to extremely serious consequences – to the crisis of statehood and the "trauma" of society.

> "The cardinal nature of the changes that took place in Soviet/Russian society during the years of perestroika, and then in the 1991–2000s, led to the emergence and consolidation of **new traumatic features (characteristics) of public consciousness...** First of all, there was disorientation and disorganization of public consciousness... of particular importance... was its **traumatization expressed in a split, bifurcation, inconsistency and conflict of development**"[66].

> **"...the trauma society lacks a clear and unambiguous strategy and understanding of the prospects for economic development.** The planned and implemented measures taken in these societies are usually aimed at **solving current, urgent and critical problems, rather than at the long term...**
>
> Spontaneous and/or disordered development of trauma society **is directly related to the activities of actors, i.e. organizations and persons responsible for the condition of public administration** and methods used to solve strategic problems of an economic and social nature. However, an analysis of the so-called economic elite and its activities shows that **it is concerned primarily with its own clan and caste interests"**[67].

For example, a number of experts similarly assessed the actions of the Central Bank of the Russian Federation to raise the key rate to 12% (August 15, 2023[68]; moreover, "with the possibility of an additional increase in case of increased pro-inflationary risks"[69].

They called this decision nothing less than "sabotage"[70], "criminal act"[71], "a sure way, in two steps, to plunge the economy into a state of clinical

[65] Birov E. Consciousness defines being. Available at: https://zavtra.ru/blogs/soznanie_opredelyaet_bitie_dokazatel_stva_iz_nashej_zhizni

[66] Toshchenko Zh.T. (2015). *Fantomy rossiiskogo obshchestva* [Phantoms of the Russian Society]. Moscow: Tsentr sotsialnogo prognozirovaniya i marketinga. Pp. 19, 37.

[67] Toshchenko Z.T. (2020). Trauma societies and their characteristics. *Humanities of the South of Russia*, 9(1), 30–50. DOI: https://doi.org/10.19181/2227-8656.2020.1.2

[68] Official press release of the Bank of Russia, August 15, 2023. Available at: https://www.cbr.ru/press/pr/?file=15082023_103000Key.htm

[69] The Bank of Russia has dramatically raised the rate. How this will affect the lives of Russians. Available at: https://www.gazeta.ru/business/2023/08/15/17430752.shtml?updated

[70] "This is a criminal act; in some other normal country they would have been put behind bars for such a thing long ago". Glazyev's tough words about the collapse of the ruble and the betrayal of the Central Bank. Available at: https://dzen.ru/a/ZNs82nPxV0kOhfFB

[71] Ibidem.

death"[72], "a revolt of the elite" and "a special operation against the ruble, which was supervised from the outside"[73].

State Duma deputy O. Dmitrieva described the actions of the Bank of Russia as an "extremely harmful measure", adding that "the current leadership of the Russian Central Bank is acting in new conditions according to old American recipes"[74]. And the head of the Duma faction "Jus Russia – For the Truth" S. Mironov called the Central Bank itself "the largest foreign agent in the Russian Federation"[75].

Moreover, it is important to note what analysts have been saying for years: "The leadership of the Central Bank of Russia is engaged in subversive work inside the country"[76] and its "pests are consulting with their "senior comrades from the IMF who really want to replace Putin... for a person that suites their interests more, and therefore are consistently "playing dirty tricks" on our population, which, due to rising inflation and a reduction in income, will arrange a "Maidan" in our country"[77].

Judging by the regularity of such "elite riots", perhaps, we can give only one answer to the question of how frequently Russia will be stepping on the same rake: in the end, everything rests on the question of what kind of state we are building; on questions of ideology.

Without a clear understanding, and most importantly, acceptance of ideological, value changes that occur against the background of the SMO in Russian society, culture and, in theory, should occur in the ruling elites of the country, it seems extremely difficult to promote further movement toward the formation of the contours of a new Social Contract. Rather, on the contrary, there is an increasing risk of new internal crises, which are unacceptable neither in the conditions of the SMO, nor in the run-up to the presidential election.

And if an armed rebellion turned out to be permissible in principle, even in the conditions of the AFU counteroffensive continuing to gain momentum, it means that it is most likely not possible to count on any significant, qualitative changes in the worldview within the "old" Russian elites... And the essence of the current worldview (at least for a significant part of elite circles) is convincingly shown by numerous expert assessments – the elites' worldview is comprador, dependent on the West, and uninterested in strengthening the sovereignty of the Russian Federation (*Insert 2*).

"The most odious representatives of the pro-Western social elite emigrated from Russia after the start of the SMO. **But the people defending the interests of the oligarchs remained in the civil service, in the departments, in the editorial offices of TV and radio studios, at computers"[78].**

[72] Clinical death in two steps. Glazyev told about the murder of the Russian economy. Available at: https://tsargrad.tv/news/klinicheskaja-smert-v-dva-prijoma-glazev-rasskazal-ob-ubijstve-russkoj-jekonomiki_846820?ysclid=lli5i1lwtl103944374

[73] Khazin M. The collapse of the ruble – a revolt of the elite? Available at: https://tsargrad.tv/news/specoperacija-cb-protiv-rublja-kurirovalas-izvne-cepochku-prosledil-hazin_847657

[74] The currency crisis will continue. Available at: https://www.ng.ru/economics/2023-08-16/1_8801_disbalance.html

[75] The State Duma called the Bank of Russia a "foreign agent": It is fulfilling the Western plan for the collapse of the ruble exchange rate. Available at: https://newdaynews.ru/moscow/802765.html

[76] Katasonov V. The Central Bank is conducting subversive work inside Russia. Available at: https://news.rambler.ru/science/49211433-tsentrobank-vedet-podryvnuyu-rabotu-vnutri-rossii-ekonomist/

[77] Khazin M. Pests from the Central Bank. Available at: https://zavtra.ru/blogs/vrediteli_iz_tcentrobanka

[78] Gaponenko A. Stalin's revolution. Available at: https://zavtra.ru/blogs/voprosi_stalinizma_8

Insert 2

Expert opinions on the liberal wing of the ruling elites

*1. "**The liberals from the financial block adjusted the entire tax and customs regulation so that it is oriented toward the export of capital from Russia and the suppression of production instead of developing value-added goods and technology…Outrageous liberal arbitrariness – a new edition of Khrushchev's voluntarism – is the basis of the financial policy of modern Russia. Therefore, the existential threats that Russia has to deal with require ideological, conceptual (and only then personnel) reorganization of the Bank of Russia and the Ministry of Finance**"*[79].

*2. "Judging by the policy of the liberal wing of our elite (which still controls financial policy in the state), **they still pursue the goal of stopping the process of economic growth in Russia". "There has been no alternative in the financial sector for more than 20 years,** and all attempts to explain something about the sabotage of monetary authorities cannot be legalized in official documents. Officially, there is neither Glazyev, nor Delyagin, nor Katasonov, nor me [Khazin] in them …**the real goal is to make it impossible to get rid of the liberals as a team.** Granted, it will be possible to replace some with others, others with still others, but they will try to make sure that in **any case only representatives of the liberal rhizome are in key positions.** This has already happened in the early 2000s in the financial sector. Let's hope it doesn't work out now…"*[80]

*3. "…despite the special military operation, **the nature of the economic system has not changed: there has been no transition from the comprador system to the sovereign one**…comprador capital still holds systemic dominance over the commanding heights of the Russian economy, which allows it to preserve and prop up the system of deindustrialization of Russia, preventing the transition to an advanced economic system… **Meanwhile, the comprador Russia excludes the sovereign Russia in the same way as the sovereign Russia excludes the comprador Russia…** The fate of Russia depends entirely on how the direct antagonism between privatization and nationalization of the commanding heights of the economy will be resolved. **The victory of privatization is equivalent to the defeat of Russia: the victory of strategic nationalization is equivalent to the victory of Russia – such is the situation now. Either the former, or the latter: there is no third option whatsoever.** Whoever is in favor of privatization is in favor of the collapse of Russia; whoever is in favor of strategic nationalization is in favor of the rise of Russia"*[81].

*4. "The electoral legislation in our country is probably one of the most flexible in the world, it changes with an enviable frequency. **The problem is that this legislation "bends" only in favor of one party. All legislative changes of the last decades serve exclusively to strengthen the monopolism of United Russia.** In this vein, there are "municipal filters" in the gubernatorial elections, and the total abolition of direct mayoral elections, and the reduction of party lists in legislative assembly elections, thanks to which we already have single-party parliaments in some cities. That is, voters who do not support United Russia simply do not have their representatives in the city councils…*

With such a legislative framework, unfortunately, there is no reason to doubt the "success" of United Russia in the upcoming election…

***The question is, do the state and society need these successes? Do we need this undivided monopoly**, which is becoming more and more bronze, more and more reminiscent of the CPSU in its worst years…? **The monopoly of United Russia is driving a wedge deeper and deeper between the government and society, and this rupture of ties is especially dangerous today. To overcome it, radical changes in the electoral system are needed**"*[82].

[79] Delyagin M. The conductors of the liberal-monetarist policy in Russia. Available at: https://delyagin.ru/articles/191-materialy-mgd/109935-provodniki-liberal-no-monetaristskoy-politiki-v-rossii?ysclid=lkxs5myt3u27707595

[80] Khazin M. Why is Mishustin so dangerous? Available at: https://zavtra.ru/blogs/kolonka_mihaila_hazina_ot_2_iyulya_2023_goda; Mishustin has waged a war against the IMF and the Federal Reserve System. Available at: https://zavtra.ru/blogs/kolonka_ot_26_iyulya_2023_goda;

[81] Gubanov S.S. (2023). Strange and monstrous: Privatization instead of strategic nationalization? *Ekonomist*, 5, pp. 32–33, 42.

[82] Mironov S.M. A cardinal revision of the electoral legislation is needed. Available at: https://mironov.ru/moya-pozitsiya/neobhodim-kardinalnyj-peresmotr-izbiratelnogo-zakonodatelstva/

It is no coincidence that many experts note that "the current situation in Russia is similar to the situation in the mid-1930s in the USSR"[83]; thus, the popularity of the personality of Joseph Stalin has been growing for several years in almost all segments of the population, including among young people (for the period from 2005 to 2021 – by 39 percentage points, from 11 to 50%), people with higher education (by 17 percentage points, from 27 to 44%) and people with a high level of welfare (by 32 percentage points, from 15 to 47%; *Tab. 6*).

Table 6. Dynamics of the share of people supporting the installation of the monument to Joseph Stalin, in various socio-demographic groups, % of respondents

Population group	2005	2010	2015	2021	Dynamics (+/-), 2021 to 2005
Age					
18–24 years old	11	12	28	50	+39
25–39 years old	17	26	33	45	+28
40–54 years old	33	20	37	46	+13
55 years old and older	44	36	42	52	+8
Education					
Below secondary	40	30	43	59	+19
Secondary	23	25	31	52	+29
Secondary professional	25	24	39	49	+24
Higher	27	17	32	44	+17
Financial situation					
We have barely enough money to buy food	35	27	45	56	+21
We have enough money to buy clothes	24	24	38	46	+22
We have enough money to buy durable goods	15	18	30	47	+32
Total according to the results of the survey					
Positively	**29**	**25**	**36**	**48**	**+19**
I don't care	**28**	**28**	**29**	**29**	**+1**
Negatively	**37**	**36**	**25**	**20**	**-17**
I find it difficult to answer	**6**	**12**	**10**	**3**	**-3**

* The wording of the question: "How would you react to the fact that a monument to Stalin were erected on the next anniversary of the Victory?". The survey was conducted on a representative all-Russian sample of urban and rural population of 1,620 people aged 18 years and older in 137 localities, 50 RF constituent entities. The survey method is a personal interview at the respondents' home.
Source: Stalin Center and Stalin Monument. Press release of Levada-Center*. Available at: https://www.levada.ru/2021/08/04/stalin-tsentr-i-pamyatnik-stalinu/

[83] Gaponenko A. Stalin's revolution. Available at: https://zavtra.ru/blogs/voprosi_stalinizma_8

[84] Fursov A. Why is Stalin's popularity growing among young people? Available at: https://zavtra.ru/blogs/sovetskaya_mechta_pochemu_sredi_molodih_rossiyan_rastyot_populyarnost_stalina

* Included in the register of foreign agents.

The authors of this study commented on the results of the survey that the growth in a positive attitude toward Stalin is also an idea of a "strong hand"; not for everyone, but for those who steal, including oligarchs and ministers.

And, perhaps, according to most experts, this is the main lesson that should be learned (first of all by the President) from this situation: **the extremely liberal ruling elite creates conditions under which specific instructions of the head of state are not implemented, as well as legislative norms of the Basic Law – the Constitution, supported by the majority of the country's population. This means that the elite, in fact, does not intend to fulfil the Social Contract; it does not want or cannot comply with it.**

And such a system of oligarchic capitalism in Russia contradicts the achievement of SMO goals and sooner or later "cracks", and, as real practice has shown, it can "crack" in various ways, up to an armed rebellion.

"What is a request for Stalin today? **First of all, this is a request for social justice**, for "the thief to be in prison". In addition to social justice, **this is a request for sovereign greatness**, so that no one tells us what kind of juvenile justice we should have, how we should raise children, and Western society, which is flooded with the pus of vice, does not teach us how to behave. This is the second thing besides social justice. And finally, for many people, this is such a revenge in general terms, **a revenge for 30 years of our losses in the international arena,** a revenge in the sense of a socio-psychological feeling"[84].

"There is an ongoing process of changing attitudes toward repression. More and more people over the past 10–15 years say that **these were isolated cases, against people who deserved it, against the top, rather than mass repressions.** Stalin is "good" in the mirror understanding of today: **today the president and the elite do whatever they want.** People say: there was no such corruption under Stalin, the top did not go on a vacation to the Maldives, they did not have houses with rooms full of money. **This idea is also about a strong hand, an iron fist.** People say: a strong hand is not for everyone, it's for the top. **Today, a strong hand is needed, again, not for everyone, repression is needed against those who steal: oligarchs, ministers.** The same views are carried over to that period"[85].

"The war is being waged not only in Ukraine... this is only one of the frontlines and, perhaps, not even the most important one, **the most important one is here, inside Russia.** Taking this into account, we must be prepared that in this sense, "blows and answers will alternate more and more often"[86].

The Constitution of the Russian Federation. Article 7, paragraph 1: *"The Russian Federation is a social state whose policy is aimed at creating conditions that ensure a decent life and free human development".*

The Constitution of the Russian Federation. Article 19, paragraph 1: *"Everyone is equal before the law and the court".*

[85] Comment on the results of the study by the director of Levada-Center* D. Volkov (source: Return of the generalissimo. Press release of Levada-Center*. Available at: https://www.levada.ru/2021/09/13/vozvrashhenie-generalissimusa/)

* Included in the register of foreign agents.

[86] Khazin M. Mishustin has waged a war against the IMF and the Federal Reserve System. Available at: https://zavtra.ru/blogs/kolonka_ot_26_iyulya_2023_goda

[87] Shipilin P. A new Russian elite is born. Available at: https://zavtra.ru/blogs/rozhdaetsya_novaya_rossijskaya_elita

"According to a separate quota for military personnel and children of combatants in Ukraine, more than 800 people have been admitted to Saint Petersburg universities. In each educational program, 10 percent of the total number of budget places were allocated for them... what will Russia be like in 10–15 years?

Talk about liberals sitting in government offices will be a thing of the past. These offices will be occupied by those who are now fighting for the future of our country on the battlefield. They will become deputies at the federal and regional levels and be employed in ministries and departments, in district, regional and republican administrations.

Ten percent of the total number of state-funded places at universities is quite enough to form a new elite. This elite will be very patriotic, adhere to common religious values, and it will determine the fate of Russia... In this new country, those who are called relocants today will then feel very uncomfortable"87.

A number of experts pin their hopes on positive changes in the country in 10–15 years. However, to put it mildly, this is a long time, during which the public administration system will certainly have to face more than one test of strength. And so that another crisis of statehood does not happen, **the target indicators contained in laws, decrees, strategies and other regulatory documents must really be fulfilled. Otherwise, the new Social Contract will not be fulfilled and there will be no public consent.**

And for this, a new Social Contract (the need for which, by and large, is already felt now, but the need for which, of course, will arise after the end of the SMO) must have not only clearly stated formal "points" (criteria) that meet the needs of the majority of the population, but also ideological, organizational, legal, personnel mechanisms for their self-defense against an inevitable threat of external ideological influence or internal greed of individual representatives of the ruling elites.

References

Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. *Journal of Institutional Studies*, 3, 74–90.

Matveichev O., Danilin P., Martynov A. et al. (2019). *Missiya Putina: doklad* [Putin's Mission: A Report]. Fund for the implementation of public projects "Vremya". Moscow.

Polterovich V.M. Competition, collaboration, and life satisfaction. Part 1. The Seven of European leaders. *Ekonomicheskie i sotsial'nye peremeny: fakty. tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(2), 31–43.

Polterovich V.M. (2022). Competition, collaboration, and life satisfaction. Part 2. The fundament of leadership – collaborative advantage. *Ekonomicheskie i sotsial'nye peremeny: fakty. tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(3), 42–57. DOI: 10.15838/esc.2022.3.81.2

Strigin E.M. *KGB byl, est' i budet. Ot MB RF do FSK RF (1994 – 1995)* [The KGB Was, Is and Will Be. From the RF Security Ministry to the RF Federal Counterintelligence Service (1994 – 1995)]. Moscow: Eksmo, Algoritm.

Toshchenko Zh.T. (2015). *Fantomy rossiiskogo obshchestva* [Phantoms of the Russian Society]. Moscow: Tsentr sotsialnogo prognozirovaniya i marketinga.

Toshchenko Z.T. (2020). Trauma societies and their characteristics. *Humanities of the South of Russia*, 9(1), 30–50.

Toshchenko Zh.T. (2023). Social contract as a noumenon: The experience of sociological understanding. *Sotsiologicheskie issledovaniya*, 6, 3–15.

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What Will Be the Emerging New World Order?

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Abstract. A new "world order", a notion that originated with the idea of an institutionalization of international relations that developed at the beginning of the 17th century, is emerging. The old "world order", inherited from the end of the Second World War and essentially centered on Western countries and the United States, had become dysfunctional since the beginning of the 1990s. It had gradually fragmented since the international financial crisis of 2008–2010. We can follow the trace of this fragmentation in the study of international trade, in the failures suffered by the United States in its multiple military interventions, but also in the emergence or re-emergence of new economic powers. The two major shocks constituted by the COVID-19 pandemic and the international crisis that has unfolded since the start of the conflict in Ukraine have put an end to it. This new world order will likely unfold based on the probable development of the BRICS. It could give rise to more balanced international relations. This could allow a new social contract to emerge in many countries.

Key words: world order, globalization, BRICS, free trade, protectionism, sovereignty.

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Introduction

We are at the dawn of a new world order. The transformations that have affected the geostrategic balance of power, but also the economic balance of power and the rules and practices of international trade, attest to this. The world order that emerged from the end of the Cold War, and which was marked by the domination that was intended to be undivided by the American Hyper-Power[1] (Védrine, 2000), has gradually fragmented. But what will emerge from this fragmentation is not yet fully defined. A new world order more respectful of the rights of Nations, more centered on the common problems of these Nations, problems which range from the protection of the environment to the social and economic development which remains to be accomplished in many countries, and finally better compatible with the emergence of a social contract of progress within each of them, is undoubtedly the most important challenge that we will have to face in the coming years.

These problems will then be addressed starting by recalling what a world order is, how the dominant world order since 1992 had begun to fragment from the financial crisis of 2008–2010, and how successive shocks – ranging from the COVID-19 pandemic to the new geostrategic situation unfolding since February 2022 – have accelerated this fragmentation and shaped the contours of a new world order. The consequences that this may have on the form and content of the social contract, in other words the dialectic between external factors and internal factors of change, will then be specified. Will these factors go in the direction of social progress or in the direction of regression? This question must also be asked. This will then allow us to try to conclude by seeking to clarify whether we are indeed today in the presence of what could be called a global moment of pivoting of the great balances.

[1] This description of the USA as a "Hyper-Power" comes from the former French Foreign Minister (1997–2002) Mr. Hubert Védrine.

What is a world order?

The phrase "change in the world order" has undoubtedly been widely used since the end of February 2022[2], but with different contents. The notion of world order is born with the institutionalization of international relations, an institutionalization that must be linked to Hugo de Groot (Grotius) who, at the beginning of the 17th century, has revolutionized the vision of Law concerning States (Gurvitch, 1927). Prior to Grotius, rights were essentially seen as attached to objects. He introduced a notion of rights belonging to persons[3], be they moral or physical, meaning then the expression of a capacity to act or the means to achieve such and such a thing. It is therefore between the end of the Wars of Religion and the emergence of what is called the "classical period", that this idea of international law and consequently of a world order gradually emerged (Besson, 2020). These ideas would be found in the Treaty of Westphalia[4] (Blin, 2006) and, later, in the 19th century, in the Congress of Vienna of 1815 (Lentz, 2013; Jarrett, 2013).

Grotius' ideas have known a new youth between the end of the 19th century and the attempts to limit the violence in armed conflicts (Boidin, 1918; Pillet, 1918), and the first world conflict with the

[2] Gnesotto N. (2023). Un nouvel ordre mondial? *Blogpost*. Available at: https://institutdelors.eu/publications/un-nouvel-ordre-mondial/; Saint-Etienne C. (2023). Le nouvel ordre stratégique mondial. *Les Echos*, March 3, 2023. Available at: https://www.lesechos.fr/idees-debats/editos-analyses/le-nouvel-ordre-strategique-mondial-1911771; Husson J. (2022). Vers une probable bascule de l'ordre mondial. *La Tribune*, August 31, 2022. Available at: https://www.latribune.fr/opinions/tribunes/vers-une-probable-bascule-de-l-ordre-mondial-928895.html

[3] Grotius H. (1724). *Le droit de la guerre et de la paix. Volume 1, 2.* Amsterdam: Pierre de Coup. Modern publishing: Grotius H. (2005). *Le droit de la guerre et de la paix.* Paris: PUF.

[4] Bely L. (2000). (dir.) (avec le concours d'Isabelle Richefort *et alii*, introduction de Marc Fumaroli, présentation de Louis Amigues), *L'Europe des traités de Westphalie: esprit de la diplomatie et diplomatie de l'esprit, actes du colloque tenu à Paris, du 24 au 26 septembre 1998, organisé par la Direction des archives et de la documentation du ministère des Affaires étrangères.* Paris: PUF.

Treaty of Versailles[5], the birth of the League of Nations in 1920 (Haakonssen, 1985), and then in 1944–1945 with the United Nations[6]. These concepts quickly found their way in the economic field with the Bretton-Woods agreements in 1944 (Steill, 2013), the Havana Treaty (Steill, 2013) and the creation of the GATT. Behind the expression world order, there is therefore all the power relations between States, power relations that are both institutionalized and determined by the rules of international law (Besson, 2020). It is understood that the application of rules, which are grouped under the term international law, is a better thing than the application of naked force. It is still necessary, however, that these rules are applied equally to all countries and that a country does not decide on its own to create new rules without consultation with the other Nations. This was recalled by Vladimir Putin on February 10, 2007 during his speech at the Munich Security Conference[7] (Levesque, 2007). This is today China and India's position in the face of what it perceives as the application of a "double standard" regarding Russia's position[8].

This world order was hegemonized by a great power, Great Britain before 1914 and the United States since 1945 and in particular since 1991. This poses the problem of relations between dominant countries and dominated countries. Such a world order has never been egalitarian between the nations concerned, and this is particularly the case for the international economic order embodied by the WTO (Galbraith, Choi, 2020). It has disadvantaged formerly colonized countries (or created by colonization) and globally less industrialized countries (Subramanian, Wei, 2007) and ended in an agreement of rich and powerful countries (Gowa, Kim, 2005). No wonder it was challenged and constantly evolved.

From 1949, it included only the allied countries of the United States and excluded, in fact, the USSR, China, and all the communist countries. It changed again in the early 1970s when the United States imposed the principle of floating exchange rates (Glenn, 2007). In fact, with the decomposition of the Bretton-Woods agreements, the notion of the international monetary system or the international monetary order made its appearance. This leads to a focus on the role of the United States dollar (Eichengreen, 2011).

The idea of the emergence of a "new" world order has been emerging since the early 2000s (Sapir, 2008). This world order would be truly multipolar. Undoubtedly, the first to have spoken of it was John Maersheimer (Mearsheimer, 2001). It has been noted that the world order, resulting from the end of the USSR, has been challenged by the rise in power of emerging economies (Goldstein, 2005; Rosecrance, 2006; Struye de Swielande, 2008). With this idea also emerged the notion that a conflict between the United States and China was possible, then to be feared and even inevitable (Swaine, Tellis, 2000; Friedberg, 2005; Wang, 2006).

International trade since the financial crisis of 2008–2010 and the fragmentation of the world order

The world order has always reflected the balance of power. It has not only reflected the differences in wealth between nations, but also their implicit or explicit geostrategic power. The United States had emerged from the disappearance of the Soviet Union, as the hegemonic power holding a form of world imperium (Poirier, 1991). In the last decade of the 20th century, they had total supremacy, both military and economic, both political and cultural. American power then brought together all the

[5] Versailles Treaty. Available at: https://mjp.univ-perp.fr/traites/sdn1919.htm

[6] Available at: https://www.un.org/en/about-us/un-charter/chapter-7

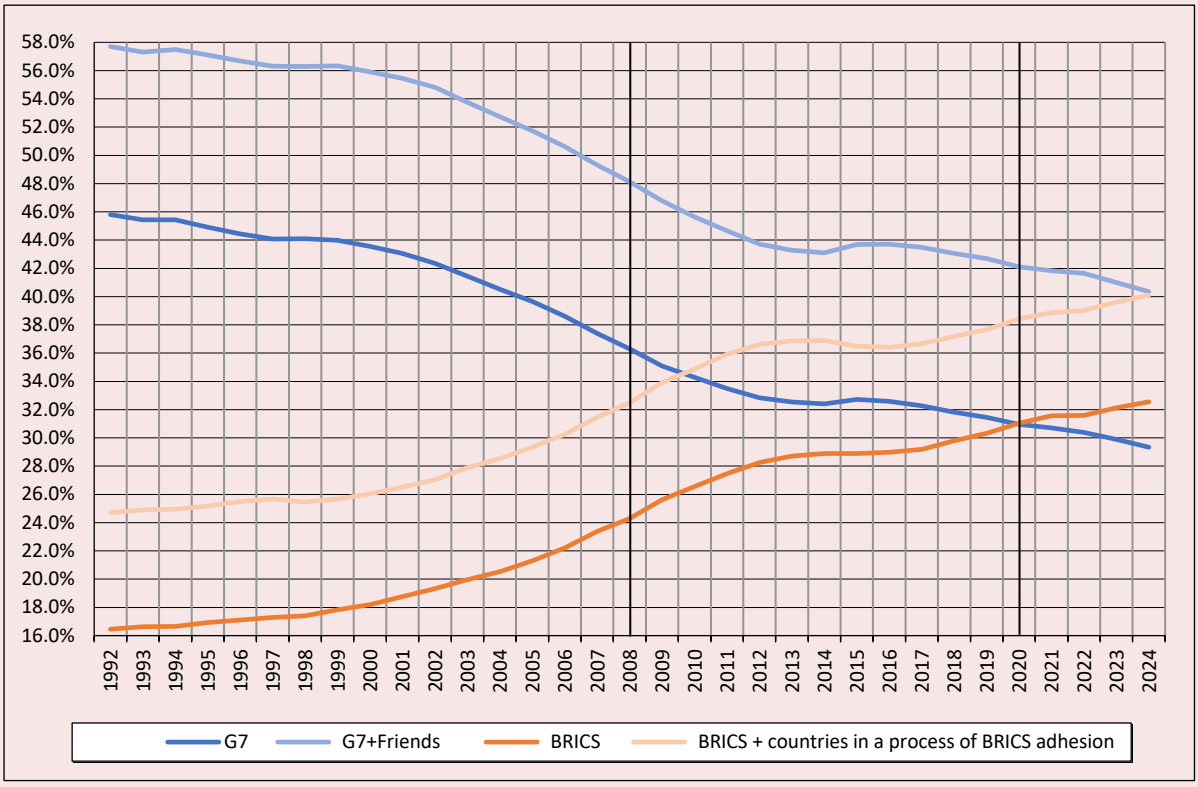
[7] Available at: http://en.kremlin.ru/events/president/transcripts/24034

[8] Rao N. (2023). The Upside of Rivalry. *Foreign Affairs*. Available at: https://www.foreignaffairs.com/india/modi-new-delhi-upside-rivalry?utm_medium=newsletters&utm_source=twofa&utm_campaign=The%20World%20Beyond%20Ukraine&utm_content=20230421&utm_term=FA%20This%20Week%20-%20112017

characteristics of "dominant power", imposing its explicit and implicit representations (Dahl, 1957). However, this hegemony, which is also reflected in the generalized adoption of free trade rules with the transition from GATT to the WTO in 1994[9], would gradually crumble in the face of financial crises that the United States will not be able to control, of military failures (in Iraq and Afghanistan), and of the rapid emergence of new powers (China, India, Brazil) or old ones that have known how to reinvent themselves (Russia) (Primakov, 2002).

The financial crisis of 2008–2010, known as the "subprime crisis", was an important moment in the questioning of the world order that had appeared in 1991–1992, just as it was a major shake-up in the economic world order (Sapir, 2009). But it was not the only one. The financial crisis known as the "Asian crisis" of 1997–1998 largely foreshadowed it (Sapir, 2008). In fact, this world order which resembled a Pax Americana was rapidly breaking down both because of the incapacities and mistakes made by the leaders of the United States and because the rise of other powers. Globalization, which had been accepted as the sole framework for economic activities, was in fact beginning to crumble and to be called into question even before

Figure 1. Share of the World GDP (in PPP)



Note. **G-7 members:** Canada, France, Germany, Italy, Japan, United Kingdom, United States of America; **BRICS members:** Brazil, China, India, Russia, Republic of South Africa; **countries considered as G-7 allies:** Australia, Austria, Belgium, Greece, Hungary, Ireland, South Korea, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Singapore, Spain, Sweden; **countries that have put forward their candidacies for membership in BRICS:** Algeria, Argentina, Saudi Arabia, Bahrain, Egypt, UAE, Indonesia, Iran.

Source: IMF, World Economic Outlook (April 2023) database.

[9] Available at: https://www.wto.org/french/docs_f/legal_f/marrakesh_decl_f.htm

the 2008–2010 crisis (Bello, 2002), a disintegration which was naturally accelerating following this crisis (Sapir, 2011).

In fact, if we compare the countries that today form the BRICS to the G-7 group, we see that their share in world GDP (calculated in PPP) was respectively 46 and 16% in 1992.

By 2008, when the "subprime crisis" started, it has risen to 36% for the G-7 and 24% for the BRICS. When the COVID-19 pandemic hits, in 2020, G-7 countries and BRICS were tied at 31%. If we now look at the respective share of the G-7 group and "allies" and that of the BRICS and identified countries having officially requested their membership of the BRICS in 2023[10], the evolution is even more striking. Their shares were 58 and 25% of world GDP in 1992 and 41 and 39% in 2020. The transformation of economic power relations has been a massive reality over the past thirty years and marks the end of an economic order too exclusively centered on Western countries.

This economic order was based on an internal social order. Globalization had allowed the establishment of a particular social contract from the years 1980-1990. In exchange for low wages, justified by low inflation induced by global competition resulting from the opening of economies following the free trade agreements which multiplied with the transformation of the GATT into the WTO in 1994 (and in "single market"[11]) but also imposed by high unemployment (Duval, 2018; Armstrong, Taylor, 1981) (fed by immigration flows), the working classes of developed countries were offered low-cost consumer products from newly industrialized countries (Bourguignon, 2012). This made the system bearable, despite a sharp rise in social inequalities[12] induced by the domination of the financial sphere and associated activities. The rapid development of the financial sphere since the end of the 1990s has generated a rentier system of a specific nature (Ryan et al., 2014; Ratti et al., 2008; Amable, Chatelain, 1996) which takes a large part of the value created in productive activities. This distortion in the distribution of income, leads to a tendency to the disappearance of the middle classes (Freeland, 2012), and to the territorial relegation of these former fallen middle classes (Guilluy, 2022a; Guilluy, 2022b). The planned destruction of a large part of industry, with the exception of certain sectors which were more or less preserved, fed this unemployment, forced these economies to an accelerated tertiarization and induced social changes which ended in fragmenting society, resulting in what a sociologist called an "archipelago society" (Fourquet, 2019). The resulting protest movements, from the "yellow vests" (Bendali et al., 2019; Tartakowsky, 2019) to the 2023 movement against pension reform in France, but also Brexit in the United Kingdom and the election of Donald Trump in the United States (Espinoza, 2021), testify to the social crisis induced by this development model. The fact that Brexit caused the start of political reconfiguration in Great Britain[13], culminating in Boris Johnson's landslide victory in the late 2019 election[14], was a good symptom of this. The rise of populist politics was a consequence of the society fragmentation[15]. The violence of police

[10] Available at: https://www.agenceecofin.com/actualites/2504-107709-13-pays-ont-officiellement-depose-des-demandes-d-adhesion-au-groupe-des-brics-selon-l-afrique-du-sud

[11] de Ruyt J. (1989). *L'acte unique européen*, Université de Bruxelles, dirigée par l'Institut d'études européennes.

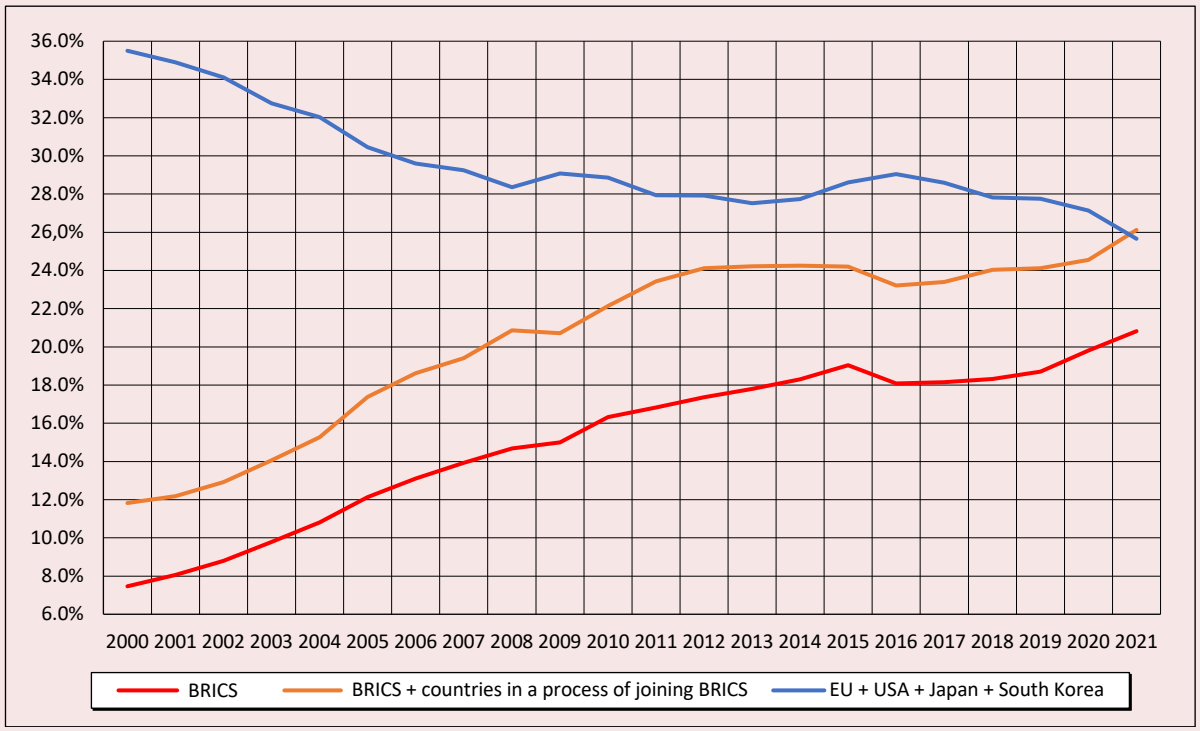
[12] Piketty T., Saez E. (2006). The evolution of top incomes: A historical and international perspective. *Working paper*, 11 955. Available at: www.nber.org/papers/w11955

[13] Available at: https://www.theguardian.com/politics/2019/apr/23/former-communist-claire-fox-standing-as-mep-for-farages-brexit-party

[14] Available at: https://www.letemps.ch/monde/victoire-ecrasante-boris-johnson

[15] Silver L. (2022). Populists in Europe – especially those on the right – have increased their vote shares in recent elections. Available at: https://www.pewresearch.org/short-reads/2022/10/06/populists-in-europe-especially-those-on-the-right-have-increased-their-vote-shares-in-recent-elections/

Figure 2. Share in global exports



Source: WTO (https://www.wto.org/english/res_e/statis_e/merch_trade_stat_e.htm)

repression, particularly in the case of the "yellow vests" movement (Poupin, 2019), also indicates the extent to which the internal social order has been challenged by this movement. World order changes reflect but also challenge the social pact.

If it is not wrong to speak of a de-globalization of the world, it has also to be understood as a de-westernization of the latter (Barma et al., 2009). The relevance of Chinese or Russian initiatives toward Africa is just an example[16]. This probably is the reason why these changes are so strongly opposed by Western countries.

This process of de-globalization is not limited to the simple power of economies. It implies a progressive questioning of the rules of the WTO and generalized free trade and multilateralism. The crisis of the multilateral trading system is in fact profound and reflects the questioning of the international economic order[17]. Thus, the WTO finds itself in competition with bilateral, regional and mega-regional agreements, including in the area of dispute settlement, for which arbitration mechanisms are provided. It would seem that the WTO is unable to adapt to the new context of the conduct of economic policies while it is "called upon to reinvent itself"[18]. It is there, in reality, that we measure the limits of the attempt to impose a form of world order by rules which, at a time, are no longer bearable by groups of countries[19] (Dunoff, Pollack, 2017).

[16] Available at: https://summitafrica.ru/en/

[17] Bown C. (2019). The 2018 trade war and the end of dispute settlement as we knew it. VOXeu.org Column, 13, June.

[18] Basedow R. (2017). Strengthening the world trade organization – critical demands for imperative success identifying politically viable options for incremental reform. Available at: www.bertelsmann-stiftung.de/

[19] Fabry E., Tate E. (2018). Sauver l'organe d'appel de l'OMC ou revenir au Far West commercial? *Policy paper*, 225, 1–21.

Table 1. BRICS shares in multilateral institutions

	World Bank		IDA		MIGA		IMF		SDR Quota	
Country	number of votes	% of total	number of votes	% of total	number of votes	% of total	number of votes	% of total	Million	% of total
Brazil	54,264	2.11	478,0	1.66	2,83	1.3	111,9	2.22	11,0	2.32
Russia	67,26	2.62	90,65	0.31	5,752	2.64	130,5	2.59	12,9	2.71
India	76,777	2.99	835,2	2.89	1,218	0.56	132,6	2.63	13,1	2.76
China	131,426	5.11	661,0	2.29	5,754	2.64	306,3	6.08	30,5	6.41
South Africa	18,698	0.73	74,37	0.26	1,886	0.86	32,0	0.63	3,1	0.64
Total	348,425	**13.56**	2,139,1	**7.41**	17,44	**8.0**	713,2	**14.15**	70,6	**14.84**

Note: IDA – International Development Association; MIGA – Multilateral Investment Guarantee Agency; IMF – International Monetary Fund; SDR – Special Drawing Rights.
Source: (Liu, Papa, 2022).

At the same time, the share of BRICS countries in international trade continued to rise (*Fig. 2*).

It should also be noted that the BRICS countries remain largely under-represented, whether in relation to their share in world GDP or in world trade, in international organizations (*Tab. 1*), a fact which can only weaken the legitimacy of the (old) world order.

But the questioning of multilateralism was actually initiated by one of the countries that had done the most to impose it: the United States. The implementation of various measures, such as the Foreign Corrupt Practices Act, a law passed in 1977[20] but which took on its full importance with a 1998 amendment and its aggressive application by the end of 2000s[21], and the Foreign Account Tax Compliance Act of 2010, was considerably aggravated by the decision of the American authorities to consider that any use of the Dollar automatically brought foreign companies under the scope of American law. This is called the principle of extraterritoriality. A French parliamentary report on this problem was written in 2016[22]. The main problem comes from the fact that the transactions that had to be honored are contracts made in dollars. However, in this case, the transactions necessarily need to pass through an American bank to "buy" dollars, thus falling under American law. French companies (Alstom[23], Technip) and banks (BNP-Paribas, then Crédit Agricole and Société Générale) were condemned via these procedures.

These measures have continued under the administration of Donald Trump. Moreover, in 2014, the European Union rallied to a policy of economic sanctions against Russia and did not react in practice to the sanctions decided by the United States against Iran[24]. Through this policy of "economic sanctions", whether they target Cuba, Iran, Russia or Venezuela, the United States and the European Union[25], which were at the front of the globalization process have therefore accelerated the phenomenon of de-globalization.

[20] Available at: https://www.justice.gov/criminal-fraud/foreign-corrupt-practices-act

[21] Gauvain R. (2019). *Rétablir la souveraineté de la France et de l'Europe et protéger nos entreprises des lois et mesures à portée extraterritoriale*. Paris, Assemblée Nationale.

[22] Ibidem.

[23] Alstom pleads guilty and agrees to pay $772 million criminal penalty to resolve foreign bribery charges. US Department of Justice, Office of Public Affairs, 22 December 2014. Available at: http://archive.wikiwix.com/cache/index2.php?url=https%3A%2F%2Fwww.justice.gov%2Fopa%2Fpr%2Falstom-pleads-guilty-and-agrees-pay-772-million-criminal-penalty-resolve-foreign-bribery

[24] Maitre E. (2018). Observatoire de la Dissuasion. FRS, Bulletin, 55. Available at: https://www.frstrategie.org/sites/default/files/documents/programmes/observatoire-de-la-dissuasion/bulletins/2018/55.pdf

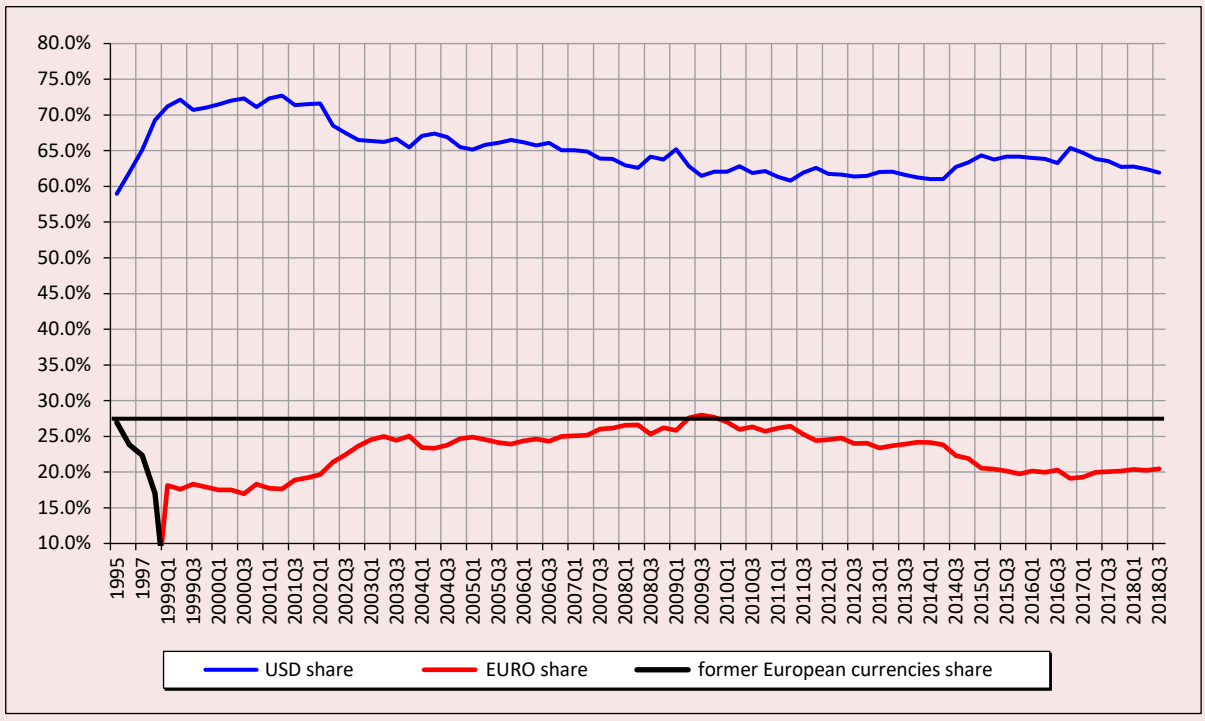
[25] This country was one of the main losers of the 2014 round of sanctions: Fast 700 Millionen US-Dollar pro Monat: Deutschland leidet unter Russland-Sanktionen, in Handelsblatt. Available at: https://www.handelsblatt.com/politik/international/krim-streit-fast-700-millionen-us-dollar-pro-monat-deutschland-leidet-unter-russland-sanktionen/25107884.html?ticket=ST-44354031-vztL3Mvyz2G7mcsrF6Tv-ap4

The US withdrawal from the *Joint Comprehensive Plan of Action*[26] (the agreement with Iran) was not exclusively aimed at isolating Iran through economic sanctions. For fear of reprisals due to the extraterritorial application of American law, the denunciation of this agreement made it possible to strike France and Germany. Apart from Italy and Greece, which negotiated directly with the United States bypassing Brussels, no other European state has so far been able to benefit from American exemptions on Iranian oil exports. This unilateral withdrawal has had heavy economic repercussions for European companies and in particular French companies such as PSA, Renault, Total and Airbus[27].

By showing that trade, and the standards associated with it, could be manipulated or interrupted for essentially political reasons, the United States demonstrated that these trades and these standards corresponded less to a world order than to the policy of United States (Kirshner, 2008). A note from the DGSI[28] thus establishes that "*French companies operating in these sectors (high-tech sectors such as aeronautics, health and research) are the subject of targeted attacks, in particular through legal disputes, attempts to capture information and economic interference*"[29].

Finally, the international order has also crumbled in the monetary field. This was based, since the end of the Bretton-Woods agreements in 1973, on

Figure 3. Currencies share in Central Bank reserves



Source: IMF, COFER, https://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4

[26] Available at: https://www.consilium.europa.eu/fr/policies/sanctions/iran/jcpoa-restrictive-measures/

[27] Available at: https://www.capital.fr/entreprises-marches/total-abandonne-south-pars-11-en-iran-a-moins-dune-derogation-1288307

[28] The French intelligence agency focusing on internal security.

[29] Egrelle O. (2018). Airbus espionné par les Etats-Unis. Portail de l'IE, 23 novembre 2018. Available at: https://portail-ie.fr/analysis/1987/airbus-espionne-par-les-etats-unis

a system that can be described as a dollar standard[30] and which quickly raised many criticisms (Ghymers, 1986). This system has always been dysfunctional (Aglietta, 1986), but this became evident in the early 2000s[31]. The creation of the EURO in 1999 had not changed this situation (Begg et al., 1998), insofar as the share of the EURO in the reserves of the various Central Banks had not exceeded the sum of the shares of the currencies of the countries which had adopted this single currency. This share, after experiencing a movement bringing it closer to the sum of the existing European currencies before the Euro, has also experienced a fairly significant drop from 2010. The share of the US dollar has also fallen, but it remained above 60% before the COVID-19 crisis (*Fig. 3*).

If both the Dollar and the Euro fell, it was due to the rise of "other currencies" used as reserves by central banks. It was therefore clear, and this from 2010, that we were in the presence of a trendtowards fragmentation of the international monetary system, a trend partly induced by geopolitical security reasons (McDowell, 2020). This trend is nevertheless slow. For institutional reasons, such as its massive use as a unit of account in many commodity markets, as well as for reasons of practical expediency (Gopinath, Stein, 2021), the dollar still remained, on the eve of the pandemic, the dominant currency of the international monetary system (Helleiner, Kirshner, 2009).

Globalization, as we have known it in the 1990s and the 2000s may well have been doomed from the start (Galbraith, 1999). But roots of this were going much farther than just the crisis of the "Washington Consensus" (Sapir, 2000). The huge development of inequalities (Atkinson et al., 2011) which was linked to the development of the world order emerging since 1991 has undermined it (Galbraith, 2012). These inequalities have a direct link with financial crisis that shattered the world order (Lysandrou, 2011; Rajan, 2010).

The shock of COVID-19 and the upheaval of the geopolitical situation

These trends were discernible as early as 2010, and the end of what some authors have called hyper-globalization[32]. However, they acquired a new reality between 2020 and 2023.The world has suffered a series of unparalleled health, economic and geopolitical shocks. The consequences will only be fully perceived by the end of the decade. The multiple breaks in the supply chains supplying production, due to COVID-19 (Fulconis, Paché, 2020), have undermined a globalized economy and raised awareness in many countries of the vulnerability arising from these chains. These breaks seem to have had a greater effect in 2021 in economies where the industrial apparatus was significant (Germany) than in economies where the share of services was greater (Dauvin, 2022). Two authors were able to write that this crisis had resulted in a weakening of supply chains, due to the absence of substitute suppliers outside the usual production clusters (Derrien, Van Der Putten, 2021).

Naturally, the new sanctions imposed on Russia from the end of February 2022 imposed new shocks. These sanctions were added to those that had been applied since 2014/2015[33]. The new sanctions had a monetary and financial component (ban on

[30] Goldberg L. (2011). The international role of the dollar: Does it matter if this changes? Staff Report, 522. New York: Federal Reserve Bank of New York.

[31] Carney M. The growing challenges for monetary policy in the current international monetary and financial system. Speech at the Jackson Hole Symposium 2019, August 23, 2019. Available at: www.bis.org/review/r190827b.pdf

[32] Kilic K., Marin D. How COVID-19 is transforming the world economy, CEPR, May 2020.

[33] For the EU: Bēlin M., Hanousek J. (2019). Making sanctions bite: the EU-Russian sanctions of 2014, VoxEU – CEPR. Available at: https://www.consilium.europa.eu/fr/infographics/eu-sanctions-against-russia-over-ukraine/; for the USA: https://www.congress.gov/bill/115th-congress/house-bill/3364/text

Table 2. Growth rates of major groups of economies since the COVID-19 outbreak, %

	2019	2020	2021	2022	2023	2024
World	2.80	-2.80	6.30	3.40	2.80	3.00
Advanced economies	1.70	-4.20	5.40	2.70	1.30	1.40
of which: **European Union**	**2.00**	**-5.60**	**5.60**	**3.70**	**0.70**	**1.60**
of which: **Euro area**	**1.60**	**-6.10**	**5.40**	**3.50**	**0.80**	**1.40**
United States	2.30	-2.80	5.90	2.10	1.60	1.10
Japan	-0.40	-4.30	2.10	1.10	1.30	1.00
Emerging market and developing economies	3.60	-1.80	6.90	4.00	3.90	4.20
of which:						
Emerging and developing Asia	**5.20**	**-0.50**	**7.50**	**4.40**	**5.30**	**5.10**
Emerging and developing Europe	2.50	-1.60	7.30	0.80	1.20	2.50

Note. 2023 and 2024 are forecasts; 2022 are estimates.
Source: IMF, World Economic Outlook, Appendix A. Available at: https://www.imf.org/en/Publications/WEO/Issues/2023/04/11/world-economic-outlook-april-2023#statistical

supplying Western currencies to the Central Bank of Russia, exclusion of certain Russian banks from the SWIFT system[34]), and an embargo-like commercial component[35].

In addition to the sharp reduction in trade between European Union countries and Russia, these sanctions have led to the segmentation of world trade between countries applying the sanctions, such as the United States, Canada, European Union countries, Japan, South Korea, Singapore, Australia and New Zealand and countries refusing to apply them such as China, India, Indonesia, Malaysia, countries in the Middle East (including Turkey, despite being a NATO member), the countries of Africa and most of the countries of Latin America. If the discourse on the "isolation" of Russia seems to be a fantasy of the West[36], the segmentation of world trade is a reality. Moreover, and this even before the sanctions, Russia had, it seems, taken precautions in the face of the threat of new sanctions[37].

Sanctions, and the creeping segmentation of international trade that they have induced, have had significant consequences for global growth. In addition to the acceleration of inflation initially caused by the COVID-19 crisis, they have increased the gap between emerging and developing countries, and in particular those in Asia and developed countries.

The countries of the European Union thus appear to be notoriously lagging behind (Sapir, 2021). Not only have they suffered a greater shock following the COVID-19 pandemic, and this despite public aids which have been considerable (Sapir, 2021), but their economic recovery has been slower. The geopolitical upheavals that have affected the world since February 2022 have led to lower growth, and this can be seen in particular in the forecasts made for 2023 and 2024.

From this point of view, the application of the sanctions had at least as great a deleterious effect on the economies that decided on these sanctions (and

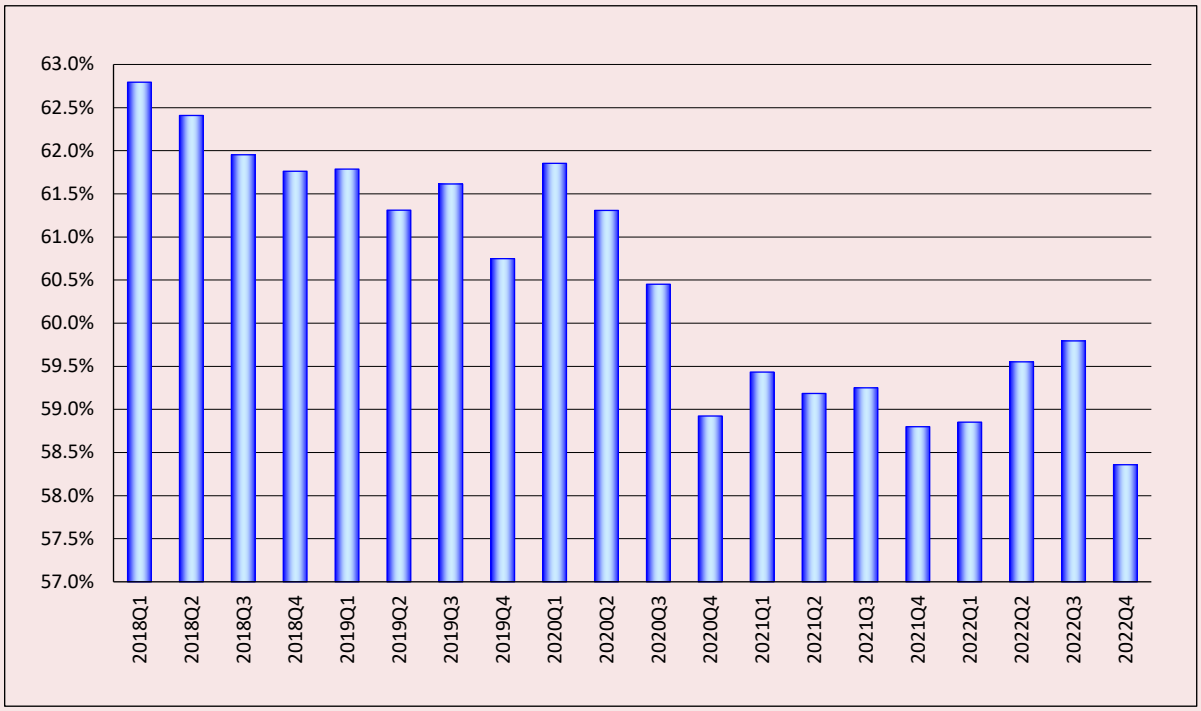
[34] Available at: https://finance.ec.europa.eu/eu-and-world/sanctions-restrictive-measures/sanctions-adopted-following-russias-military-aggression-against-ukraine_en

[35] For the EU countries: https://www.consilium.europa.eu/fr/policies/sanctions/restrictive-measures-against-russia-over-ukraine/#economic; for the USA: https://home.treasury.gov/system/files/126/14065.pdf & https://home.treasury.gov/system/files/126/fr87_41589.pdf and https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/06/fact-sheet-united-states-g7-and-eu-impose-severe-and-immediate-costs-on-russia/

[36] L'isolement de la Russie, un fantasme de l'Occident. Available at: https://mondafrique.com/lisolement-de-la-russie-est-un-fantasme-de-loccident/

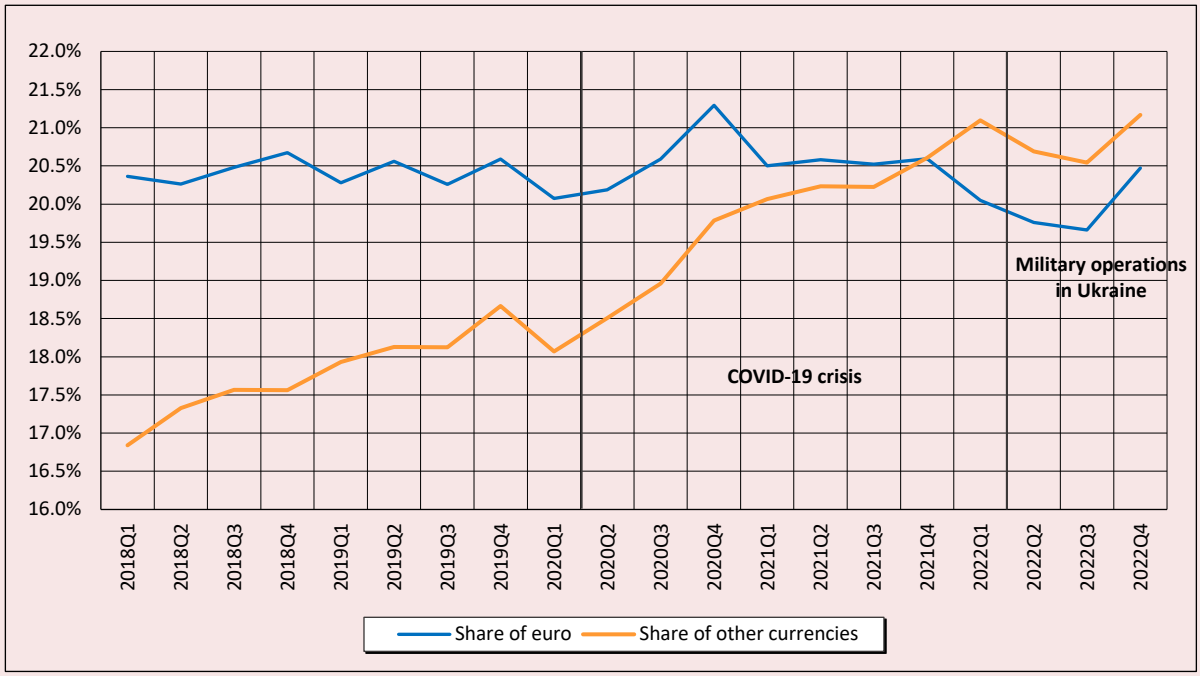
[37] Huileng T. It's no surprise Russia is weathering the West's sanctions: Putin has been preparing for them for nearly a decade. Available at: https://www.businessinsider.com/russia-putin-preparing-west-sanctions-decade-since-ukraine-crimea-annexation-2022-6?r=US&IR=T

Figure 4. Shares of US dollars in Central Bank reserves



Source: Currency Composition of Official Foreign Exchange Reserves (COFER), International Financial Statistics (IFS). Available at: http://data.imf.org/

Figure 5. Shares of Euro and other currencies in Central Bank reserves



Source: Currency Composition of Official Foreign Exchange Reserves (COFER), International Financial Statistics (IFS). Available at: http://data.imf.org/

in particular those of the European Union) as on the targeted country, Russia (Sapir, 2023). This is also reflected in an acceleration of developments concerning currencies. The US dollar seems to be accelerating its decline in the share of central bank reserves. In fact, the trends towards de-dollarization of international trade (Ladasic, 2017), and in particular the project of a common BRICS currency (Liu, Papa, 2022), seem to have been induced by the political instrumentalization of the US dollar as well as by the freezing of the assets of the Central Bank of Russia[38] (*Fig. 4*).

It should be noted that this process did not fundamentally benefit the Euro but all the "other currencies", including the convertible Yuan, the Swiss Franc or the Pound Sterling (*Fig. 5*). In fact, we are indeed in the presence of a movement to question the international monetary system, in other words the world monetary order.

The crisis of the world order dating from 1992 has become evident with the crisis caused by COVID-19 and the geostrategic upheavals that have occurred from 2022. The chief economist of the World Bank, Ms. Carmen Reinhart, recognized it herself: "COVID-19 is the last nail in the globalization coffin"[39].

She is not the only one. Mr. Kemal Dervis, in a column published in June 2020 by the Brookings Institution, one of the most famous "think tanks" of the US Democratic Party added: "With the COVID-19 catastrophe having laid bare the vulnerabilities inherent in a hyper-connected, just-in-time global economy, a retreat from globalization increasingly seems inevitable. To some extent, this may be desirable."[40]. This statement is significant, because the Brookings has been one of the centers of influence that have worked the most for "globalization". Some drew attention to this phenomenon before the health crisis, such as that of Harold James, written for the anniversary of the 2008 crisis (James, 2018). This same Harold James, professor of history and international relations at Princeton University, also spoke of the "global challenge" represented by this de-globalization[41]. In 2022, Joseph Stiglitz pointed out to phenomena of "re-shoring" and "friendly-shoring", which testify to a process of fragmentation and de-globalisation, by showing how they can appear as a response to the errors of globalization[42]. In her October 2022 speech at Georgetown University (Washington DC), Kristalina Georgieva, President of the IMF, took note of these transformations[43]. The Free Trade paradigm has been shattered. The return of protectionism, which had begun to manifest itself openly with the crisis of 2008–2010, tends – because of sanctions and counter-sanctions – to accelerate.

We are now in the presence of a clear risk of a segmentation of the world between what could be called a "collective West" and a "collective South"[44]. The latter tends to be structured around the BRICS, this is measured in terms of applications for membership, but also – and this is less noticed – around the SCO (Deng, 2021). Even if this opposition is inevitable because of the behavior of countries like the United States or Great Britain, whose former Prime Minister Mrs. Truss called for forming the G-7 into an economic NATO[45],

[38] Ping L. The trend toward de-dollarization become clearer as dollar weaponization damages its credibility. Available at: https://www.globaltimes.cn/page/202304/1289944.shtml

[39] Available at: https://www.bloomberg.com/news/videos/2020-05-21/reinhart-says-covid-19-is-the-last-nail-in-the-coffin-of-globalization-video

[40] Available at: https://www.brookings.edu/opinions/less-globalization-more-multilateralism/

[41] James H. (2017). Deglobalization as a global challenge. Princeton University, Center for International Governance Innovation, CIGI Papers No. 135, Princeton, NJ.

[42] Stiglitz J.E. Getting deglobalization right. Available at: https://www.socialeurope.eu/getting-deglobalisation-right

[43] Available at: https://www.imf.org/en/News/Articles/2022/10/06/sp-2022-annual-meetings-curtain-raiser

[44] Something already described in Sapir J., *La Démondialisation*, new edition, op. cit.

[45] Stokes B. The world needs an economic NATO. Available at: https://foreignpolicy.com/2022/05/17/ukraine-war-russia-sanctions-economic-nato-g7/

we cannot be satisfied of this situation which is clearly sub-optimal in terms of dealing with issues of safeguarding the planet and equal development. If a new world order will eventually emerge, it is possible that it will be, because it is multipolar, much less unequal than the one to which it will succeed.

What evolution for the internal social contract of countries?

Changes in the world order that have been witnessed since the end of 2019 have meant the end of the implicit social contract that has dominated in developed countries. This has resulted in a sharp rise in prices[46], largely due to the breakdown of global supply chains[47] and, secondarily, the consequences of economic sanctions and the disruptions they have caused in world trade. But we have also witnessed an awareness, more or less rapid and more or less significant depending on the country considered, that the continuation of the growth model linked to deindustrialization was no longer possible[48]. This awareness is naturally faster in Europe, which finds itself directly threatened by the breakdown of economic relations with Russia[49], and which runs the risk of a growing marginalization (and even vassalization) under the tutelage of the United States in the future world order[50].

Moreover, awareness of the ecological limits of the old growth model, limits which are too often reduced to the question of climate change but which in reality include the question of waste and soil and water pollution, has also asserted itself through the social shock induced by the COVID-19 pandemic.

For other countries, including Russia, the development strategy adopted since the 2000s and based on reciprocal ties of dependence with European economies, ties formed by the sale of cheap energy or cheap products in exchange for investments industries and imports of technology, which has been invalidated. Against a backdrop of strong economic growth, Russia had actively attracted foreign direct investment and localized productions using foreign technologies (Adewale, 2017). This model was shattered with the new round of sanctions. With the new geostrategic situation that has been developing since February 2022, a new development model seems to have to prevail[51] (Gusev, 2023), even if today it is the medium-term constraints (and opportunities) that remain important (Shirov, 2023). The case of the automobile industry is the best known, but it is far from being the only one. Russia was then forced to accelerate its import-substitution

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[46] Harding M., Lindé J., Trabandt M. Understanding Post-Covid Inflation. IMF, Working Paper, WP 23-10, January 20, 2023. Available at: https://www.elibrary.imf.org/view/journals/001/2023/010/article-A001-en.xml

[47] Forbes K.J., Gagnon J., Collins Ch.G. Pandemic inflation and nonlinear, global Phillips curves. Peterson Institute for International Economics. Working paper 21-15, 2021,VoxEU.org. 31; Gopinath G. How will the pandemic and war shape future monetary policy? Speech delivered at the Jackson Hole Symposium. Available at: https://www.imf.org/en/News/Articles/2022/08/26/sp-gita-gopinath-remarks-at-the-jackson-hole-symposium

[48] Leseul G. et al. Commission d'enquête chargée d'identifier les facteurs qui ont conduit à la chute de la part de l'industrie dans le PIB de la France et de définir les moyens à mettre en oeuvre pour relocaliser l'industrie et notamment celle du medicament. Sénat de la République Française, rapport 4923, January 19, 2022. Available at: https://www2.assemblee-nationale.fr/15/autres-commissions/commissions-d-enquete-de-la-xv-eme-legislature/commission-d-enquete-sur-la-desindustrialisation/(block)/RapEnquete

[49] Available at: http://gasprocessingnews.com/news/2023/03/europe-facing-costly-winter-without-enough-long-term-lng-deals/

[50] See the contribution of Joshka Fisher, the former minister of Foreign affairs of Germany in Project Syndicate. Available at: https://www.project-syndicate.org/commentary/europe-biggest-loser-in-multipolar-world-by-joschka-fischer-2023-05?utm_source=Project%20Syndicate%20Newsletter&utm_campaign=649968e73b-sunday_newsletter_05_21_2023&utm_medium=email&utm_term=0_73bad5b7d8-649968e73b-104930809&mc_cid=649968e73b&mc_eid=ce43353b62&barrier=accesspaylog

[51] See also: Frolov I. Ye., Belousov D.R., Artemenko V.G. et al. (2022). On long-term scientific and technological development of Russia: Scientific report. Moscow, IEF-RAS. Available at: https://ecfor.ru/publication/o-dolgosrochnom-nauchno-tehnologicheskom-razvitii-rossii/

strategy[52], and it seems to give positive results[53]. This allowed a beginning of diversification of exports, corresponding moreover to the canonical model of international trade (Krugman, 1984).

Russia is not alone in this case. India could well, within a few months, be faced with a similar challenge. Finally, China has started to refocus on its internal market[54] and could be driven to accelerate this process[55]. Overall, the degree of openness of the BRICS has tended to decrease in the ten years since the 2008-2010 crisis. The BRICS countries have sought to reduce their dependence on international trade and this process should naturally accelerate in the current circumstances marked by an increasing politicization of international trade.

For developed countries, the old strategy, or the old model of growth, could be measured by the share of services in GDP, a share that has grown steadily since the 1970s and which today has become very important (*Tab. 3*). This share fluctuates between 69 and 79%.

Figures for China and India have been presented here for the sake of comparison. The average is between 49 and 58%. As can be seen in Table 4, Western countries have seen their economies become massively tertiarized (Barreiro de Souza et al., 2016; Greenhalgh, Gregory, 2001; Daniels, 1993). This phenomenon is not new (Lichtenstein, 1993), and in a number of cases it can even be justified. But it was probably brought to its climax by the extension of free trade and the implicit social contract it enabled. Indeed, China's level of development is similar to Western countries, but the share of services is much lower there. However, services – except for certain sectors such as financial services – offer lower wages than in industry and construction.

From this point of view, it is interesting to look at the observed and probable evolution of Russia (*Tab. 4*). In 2016, it was close to Germany and in an overall intermediate situation between developed countries and China. It seems, since the beginning

Table 3. GDP percent of different economic sectors, average 2011–2018, %

Sectors	**France**	**Germany**	**Italy**	**United States**	**Japan***	**China**	**India****
Agriculture, forestry, fishing	1.8	0.9	2.2	1.1	1.0	8.6	16.4
Industry	14	25.6	19	15.7	23.4	35.7	18.9
Construction	5.7	4.6	4.7	3.9	5.5	6.9	7.0
Services	**78.5**	**68.9**	**74.1**	**79.3**	**70.1**	**48.8**	**57.7**

Note. * Average 2016–2021; ** average 2016–2019.
Sources: IMF, OECD, https://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1

Table 4. GDP percent of different sectors in the Russian economy, %

Economic sector	2016	2022**	2023***
Agriculture, forestry, fishing	4.8	4.3	4.3
Industry*	25.7	31.1	31.6
Construction	6.2	5.2	5.3
Services	63.3	59.4	58.8

Note. * Incorporating transport of electricity, heat, gas and water; ** estimates; *** forecasts.
Sources: OECD, ROSSTAT (https://rosstat.gov.ru/storage/mediabank/22_20-02-2023.html)

[52] Adamovich A. Russia is switching to a new format of import substitution. Available at: https://www.kp.ru/daily/27289/4427120/

[53] The Atlantean shrugged his shoulders: How the Russian auto industry is recovering and developing. Available at: https://expert.ru/2022/12/18/atlant-pozhal-plechami-kak-vosstanavlivayetsya-i-razvivayetsya-rossiyskiy-avtoprom/

[54] China's Structural Transformation: What Can Developing Countries Learn. Geneva, UNCTAD, GDS/2022/1. Available at: https://unctad.org/system/files/official-document/gds2022d1_en.pdf

[55] Available at: https://www.globaltimes.cn/page/202303/1286727.shtml

of the armed clashes in Ukraine, to have taken another path and tends to approach India and China.

The government's policy seems to be taking the direction of what a Ukrainian sociologist described as "military Keynesianism"[56], through significant aid to sections of the population engaged in the war effort, but also through the volume of public orders for armament[57] and infrastructure. The production capacity utilization rate[58], a good indicator of industrial activity, would have reached – according to information communicated by UNICREDIT[59] – 86% at the start of 2023 is currently more generally around 78 to 82% depending on the country[60]. This implies that industrial activity is currently very high in Russia. If we add to this the efforts made to achieve the substitution of national products for part of the imports, a development model based on industry, on the processing of raw materials and not on the export of raw materials, could be set up. Such a model would logically be more egalitarian, whether socially or territorially, than the reciprocal dependency model developed previously. It will likely require some form of planning[61].

For Western countries, such a change raises many problems. If the objective of re-industrialization, coupled with that of making industry much more compatible with ecological requirements, has indeed been adopted in France as in the United States, and in this country the IRA law bears witness to this[62]. This objective implies colossal investments, in particular to decarbonize energy production. It also implies putting the financial sector at the service of an economy centered on the production of goods and on public services and a coordination of efforts which also does not seem possible without some form of planning (Sapir, 2022). The reduction of inequalities that could result from this would be favorable to the reconstitution of the social basis of democracy. But we can see a significant gap forming between political speeches and the reality of action. The case of the pension reform in France in the first quarter of 2023 clearly shows that the financial dimension remains very present within the government's economic policy. Moreover, the rise of authoritarian behavior within the government apparatus as well as the radicalization of political speeches raise fears of another outcome than that of the reconstruction of the social pact on the basis of re-industrialization.

Since the beginning of 2022, we have witnessed an acceleration of the transformations that had already been at work for at least a decade in the global economy. These transformations sign the

[56] Ishshenko V. Russia's military Keynesianism. Available at: https://www.aljazeera.com/opinions/2022/10/26/russias-military-keynesianism

[57] Cooper J. Implementation of the Russian federal budget during January – July 2022 and the spending on the military. SIPRI Background Paper, SIPRI, Stockholm, October 2022. Available at: https://www.sipri.org/sites/default/files/2022-10/bp_2210_russianmilex.pdf

[58] The INSEE definition could be seen at https://www.insee.fr/fr/metadonnees/definition/c1275

[59] Data obtained during the European Business Association Webinar, February 27, 2023.

[60] Historical average was 83.2% in France for 1963–1989 (source: Bourlange, Chaney, 1990) and 83.9% for 2009–2019. It had fallen to 81.8% in 2022 (https://www.insee.fr/fr/statistiques/serie/001586738#Telechargement). In the USA the production capacity utilization ratio is 79.8% for 2022 (https://fr.tradingeconomics.com/united-states/capacity-utilization)

[61] Sapir J. Economic planning: The Renaissance of forgotten practices and opportunities for Russia. Available at: https://expert.ru/expert/2023/04/ekonomicheskoye-planirovaniye-renessans-zabytoy-praktiki-i-vozmozhnosti-dlya-rossii/

[62] Available at: https://www.democrats.senate.gov/imo/media/doc/inflation_reduction_act_one_page_summary.pdf. See also Stiglitz J.E. Why the Inflation Reduction Act is a big deal. Available at: https://www.project-syndicate.org/commentary/us-inflation-reduction-act-is-a-big-deal-by-joseph-e-stiglitz-2022-08?barrier=accesspaylog&utm_term=&utm_campaign=&utm_source=adwords&utm_medium=ppc&hsa_acc=1220154768&hsa_cam=12374283753&hsa_grp=117511853986&hsa_ad=499567080222&hsa_src=g&hsa_tgt=aud-1249316000597:dsa-19959388920&hsa_kw=&hsa_mt=&hsa_net=adwords&hsa_ver=3&gad=1&gclid=CjwKCAjwgqejBhBAEiwAuWHioOck-GaQCMtd-PKCLXS_QroDjeSzqT63WRnk3Gje9p6-hb6tcx1zOxoCh3sQAvD_BwE

death warrant for the world order that emerged in the early 1990s, a death warrant which takes the form of the rise of non-Western organizations (BRICS, OCS) in international life, and a questioning of the international monetary system. The world order change takes the form of a de-Westernization of the world and intends, rightly or wrongly, to sink its roots into the decolonization movement of the 1950s and 1960s.

But these transformations also affect the social pact, whether implicit or explicit, that worked in most developed and developing countries. It confronts both groups of countries with the impossibility of continuing on the path that has been theirs since the beginning of the 1990s. In both cases the state will be called upon to play a greater role – directly and indirectly – in economic activity and the structuring of society. However, it is not certain that this role would result in significant social and democratic progress and it could, on the contrary, end – in developed countries – in a more coercive and more unequal internal order.

References

Adewale A.R. (2017). Import-substitution industrialization and economic growth – Evidence from the group of BRICS countries. *Future Business Journal*, 3, 138–158.

Aglietta M. (1986). *La Fin des Devises Clés*. Paris: La Découverte.

Amable B., Chatelain J.B. (1996). La concurrence imparfaite entre les intermédiaires financiers est-elle toujours néfaste à la croissance économique? *Revue économique*, 47(3), 765–775.

Armstrong H., Taylor J. (1981). The measurement of different types of unemployment. In: Creedy J. (Ed.). *The Economics of Unemployment in Britain*. London: Butterworth.

Atkinson A., Piketty T., Saez E. (2011). Top incomes in the long run of history. *Journal of Economic Literature*, 49(1), 3–71.

Atkinson A.B., Piketty T. (Eds.). (2007). *Top Incomes Over the Twentieth Century: A Contrast between Continental European and English-Speaking Countries*. Oxford: Oxford University Press.

Barma N., Chiozza G., Ratner E., Weber S. (2009). A world without the West? empirical patterns and theoretical implications. *Chinese Journal of International Politics*, 4(2), 525–544.

Barreiro de Souza K., Quinet de Andrade Bastos S., Salgueiro Perobelli F. (2016). Multiple trends of tertiarization: A comparative input–output analysis of the service sector expansion between Brazil and United States. *Economia*, 17(2), 141–158.

Begg D., von Hagen J., Wyplosz C., Zimmermann K.F. (Eds.). (1998). *EMU: Prospects and Challenges for the Euro*. Oxford: Blackwell.

Bello W. (2002). *Deglobalization, Ideas for a New World Economy*. London & New York: Zed Book.

Bendali Z. et al. (2019). Le mouvement des Gilets jaunes: Un apprentissage en pratique(s) de la politique? *Politix*, 128(4), 143–177. Available at: https://www.cairn.info/revue-politix-2019-4-page-143.htm

Besson S. (2020). The political legitimacy of international law: Sovereign states and their international institutional order. Carrying Dworkin's later work on international law forward. *Jus cogens*, 2(2), 111–138.

Besson S. (2020). L'autorité légitime du droit international comparé. Quelques réflexions autour du *monde* et du *droit des gens* de Vico. In: Besson S., Jubé S. (Eds.). *Concerter les civilisations. Mélanges en l'honneur d'Alain Supiot*. Paris: Seuil.

Blin A. (2006). 1648. La Paix de Westphalie ou la naissance de l'Europe politique moderne. In*: Questions à l'histoire*. Bruxelles.

Boidin P. (1918). *Les lois de la guerre et les deux conférences de La Haye (1899–1907)*. Paris.

Bourguignon F. (2012). *La mondialisation de l'inégalité*. Paris: Seuil.

Bourlange D., Chaney E. (1990). Taux d'utilisation des capacités de production: un reflet des fluctuations conjoncturelles. *Économie et statistique*, 23, 49–70.

Dahl R.A. (1957). The concept of power. *Behavioral Science*, 2(3), 201–215.

Daniels P.W. (1993). *Services Industries in the World Economy*. Cambridge: Blackwell.

Dauvin M. (2022). Évaluation du choc d'approvisionnement. *Revue de l'OFCE*, 2(177), 101–115.

Deng H. (2021). 20 years of SCO, development, experience and future directions. *Contemporary International Relations,* 31(4).

Derrien G., Van Der Putten R. (2021). Des chaînes d'approvisionnement plus résilientes après la pandémie de la Covid-19. *BNP-Paribas Conjoncture*. Available at: https://economic-research.bnpparibas.com/html/fr-FR/chaines-approvisionnement-resilientes-pandemie-Covid-19-20/12/2021,44859

Dunoff J.L., Pollack M.A. (2017). The judicial trilemma. *American Journal of International Law*, 111, 226–276.

Duval G. (2018). Travail: du plein-emploi au chômage de masse. *Alternatives Économiques*, 4(378), 72.

Eichengreen B. (2011). *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*. Oxford: Oxford University Press.

Espinoza M. (2021). Donald Trump's impact on the Republican Party. *Policy Studies*, 7-6. Available at: https://scholarworks.utrgv.edu/cgi/viewcontent.cgi?article=1037&context=pol_fac

Fourquet J. (2019). *L'Archipel français*. Paris: Le Seuil.

Freeland C. (2012). *Plutocrats: The Rise of the New Global Super Rich and the Fall of Everyone Else*. Toronto: Doubleday.

Friedberg A.L. (2005). The future of U.S.-China relations: Is conflict inevitable? *International Security,* 30(2).

Fulconis F., Paché G. (2020). Pandémie de COCID-19 et chaines logistiques. *Revue Française de Gestion*, 8(293), 171–181.

Galbraith J. (2012). *Inequality and Instability. A Study of the World Economy Just Before the Great Crisis*. Oxford: Oxford University Press.

Galbraith J., Choi J. (2020). Inequality under globalization: State of knowledge and implications for economics. In: Webster E., Valodia I., Francis D. (Eds.). *Inequality Studies from the Global South*. London-New York: Routledge.

Galbraith J.K. (1999). The crisis of globalization". *Dissent*. Available at: https://www.dissentmagazine.org/article/the-crisis-of-globalization

Ghymers C. (1986). Réagir à l'emprise du dollar. In: Aglietta M. (Ed.). *L'ECU et la vieille dame*. Paris: Economica.

Glenn G.W. (2007). Floating the system: Germany, the United States, and the Breakdown of Bretton Woods, 1969–1973. *Diplomatic History*, 31(2), 295–323.

Goldstein A. (2005). *Rising to the Challenge. China's Grand Strategy and International Security*. Stanford University Press.

Gopinath G., Stein J.C. (2021). Banking, trade, and the making of a dominant currency. *The Quarterly Journal of Economics*, 136(2), 783–830.

Gowa J., Kim S.Y. (2005). An exclusive country club: The effects of the GATT on trade, 1950–1994. World Politics, 57(4), 453–478.

Greenhalgh C., Gregory M. (2001). Structural change and the New Service Economy. *Oxford Bulletin of Economic Statistics*, 63(special issue), 629–646.

Guilluy C. (2022a). *La France Périphérique*. Paris: Flammarion.

Guilluy C. (2022b). *Les Dépossédés*, Paris: Flammarion.

Gurvitch G. (1927). La philosophie du droit de Hugo Grotius et la théorie moderne du droit international (À L'occasion Du Tricentenaire Du *De Jure Ac Pacis*, 1625–1925). *Revue de Métaphysique et de Morale*, 34(3), 365–391.

Gusev M.S. (2023). Russian economic development strategy – 2035: Ways to overcome long-term stagnation. *Studies on Russian Economic Development,* 34(2), 167–175. DOI: 10.1134/S107570072302003X

Haakonssen K. (1985). Hugo Grotius and the history of political thought. *Political Theory,* 13, 239–265.

Helleiner E., Kirshner J. (2009). *The Future of the Dollar*. Ithaca: Cornell University Press.

James H. (2018). Deglobalization: The rise of disembedded unilateralism. *Annual Review of Financial Economics*, 10, 219–237. DOI: 10.1146/annurev-financial-110217-022625

Jarrett M. (2013). *The Congress of Vienna and Its Legacy: War and Great Power Diplomacy after Napoleon*. London: I.B. Tauris & Company, Ltd.

Kirshner J. (2008). Dollar primacy and American power: What's at stake? *Review of International Political Economy*, 15(3), 418–438.

Krugman P. (1984). Import protection as export promotion: International competition in the presence of oligopoly and economies of scale. In: Kierzkowski H. (Ed.). *Monopolistic Competition and International Trade*. London: Oxford University Press.

Ladasic I.K. (2017). De-dollarization of oil and gas trade. In: *17th International Multidisciplinary Scientific GeoConference SGEM*, 15, 99–106.

Lentz T. (2013). *Le Congrès de Vienne: une refondation de l'Europe (1814–1815)*. Paris: Perrin.

Levesque J. (2007). En marge d'un fameux discours de Poutine. *Diplomatie*, 27, 38–41.

Lichtenstein C. (1993). Les relations industrie-services dans la tertiarisation des économies. *Revue internationale P.M.E.*, 6(2), 9–33.

Liu Z., Papa M. (2022). *Can BRICS De-dollarize the Global Financial System? Elements in the Economics of Emerging Markets*. Cambridge: Cambridge University Press. Available at: https://www.cambridge.org/core/elements/can-brics-dedollarize-the-global-financial-system/0AEF98D2F232072409E9556620AE09B0

Lysandrou P. (2011). Inequality as one of the root causes of the financial crisis: A suggested interpretation. *Economy and Society*, 40(3), 323–344.

McDowell D. (2020). Financial sanctions and political risk in the international currency system. *Review of International Political Economy*, 28(3), 635–661.

Mearsheimer J. (2001). *The Tragedy of Great Power Politics*. New York: W.W. Norton.

Pillet A. (1918). *Les Conventions de La Haye du 29 juillet 1899 et du 18 octobre 1907, étude juridique et critique*. Paris.

Poirier L. (1991). La guerre du Golfe dans la généalogie de la stratégie. *Stratégique*, 51/52, 3e et 4e trimestres.

Poupin P. (2019). L'expérience de la violence policière dans le mouvement des Gilets jaunes. *Sociologie et Sociétés*, 51(1-2), 177–200. Available at: https://www.erudit.org/fr/revues/socsoc/2019-v51-n1-2-socsoc05787/1074734ar/

Primakov E. (2002). *Mir posle 11 Sentjabrja*. Moscow: Mysl'.

Rajan R. (2010). *Fault Lines. How Hidden Fractures Still Threaten the World Economy*. Princeton, NJ: Princeton University Press.

Ratti R.A., Lee S., Seol Y. (2008). Bank concentration and financial constraints on firm-level investment in Europe. *Journal of Banking & Finance*, 32(12), 2684–2694.

Rosecrance R. (2006). Power and international relations: The rise of China and its effects. *International Studies Perspectives*, 7.

Ryan R.M., O'Toole C.M., McCann F. (2014). Does bank market power affect SME financing constraints? *Journal of Banking & Finance*, 49, 495–505.

Sapir J. (2000). Le consensus de Washington et la transition en Russie: histoire d'un échec. *Revue Internationale de Sciences Sociales*, 166, 541–553.

Sapir J. (2008). *Le Nouveau XXIè Siècle*. Paris: le Seuil.

Sapir J. (2009). The social roots of the financial crisis: Implications for Europe. In: Degryze C. (Ed.). *Social Developments in the European Union:2008*. Bruxelles: ETUI.

Sapir J. (2011). *La Démondialisation*. Paris: Le Seuil; reprinted in an augmented version (2021). Paris: Le Seuil.

Sapir J. (2021). Is eurozone accumulating an historic lag toward Asia in the Covid-19 context? *Economic Revival of Russia,* 1(67), 89–102.

Sapir J. (2021). The economic shock of the health crisis in 2020: Comparing the scale of governments support. *Studies on Russian Economic Development*, 32(6), 579–592.

Sapir J. (2022). Is economic planning our future? *Studies on Russian Economic Development,* 33(6), 583–597. DOI: 10.1134/S1075700722060120

Sapir J. (2023). Wendet sich der Wirtschaftskrieg gegen Russland gegen seine Initiatoren? In: Luft S., Kostner S. (Eds.). *Ukrainekrieg. Warum Europa eine neue Entspannungspolitik braucht*. Frankfurt am Main: Westend-Verlag.

Shirov A.A. (2023). Development of the Russian Economy in the medium term: risks and opportunities. *Studies on Russian Economic Development*, 34(2), 159–166.

Steill B. (2013). *The Battle of Bretton Woods: John Maynard Keynes, Harry Dexter White, and the Making of a New World Order*. Princeton, N-J.: Princeton University Press.

Stokes B. The world needs an economic NATO. Available at: https://foreignpolicy.com/2022/05/17/ukraine-war-russia-sanctions-economic-nato-g7/

Struye de Swielande T. (2008). Les États-Unis et le nouvel ordre mondial emergent. *Les Cahiers du RMES*, 5(1).

Subramanian A., Wei S-J. (2007). The WTO promotes trade, strongly but unevenly. *Journal of International Economics*, 72(1), 151–175.

Swaine M.D., Tellis A.J. (2000). *Interpreting China's Grand Strategy: Past, Present, and Future*. Santa Monica: RAND.

Tartakowsky D. (2019). Les Gilets jaunes, les mouvements sociaux et l'État *L'ENA hors les murs*, 494(2), 9–10. Available at: https://www.cairn.info/revue-l-ena-hors-les-murs-2019-2-page-9.htm

Védrine H. (2000). *Les Cartes de la France à l'heure de la mondialisation*. Paris: Fayard.

Wang Y.-K. (2006). *China's Grand Strategy and U.S. Primacy: Is China Balancing American Power?* Washington: CNAPS, Brookings.

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Communicative Concept of the Social Contract and Formation of the Course of Economic Development

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Abstract. The article presents the communicative concept of the social contract. This concept focuses not on reaching a compromise, but on bringing the parties closer together during the discussion of their positions. Mutual understanding regarding the desired future of the socio-economic system is a necessary basis for determining the course of economic development with a communicative understanding of the social contract. Such an interpretation of it takes into account that not only the image of the future is important, the process of its joint comprehension, the organizational aspect of this process is no less important. As evidenced by foreign practice, with standard procedures of electoral democracy, state policy is formed under the influence of business-oriented groups, and the influence of the preferences of an ordinary citizen is close to zero. Information technologies have not only dramatically expanded communication capabilities, but also led to the identification of the information elite. The article analyzes the discussion about the influence of this elite on social development, including the discussion of the theory of information autocracy. When mass media leads to increased polarization of society, it increases investment risks and causes a slowdown in economic growth. As foreign studies show, a new technological elite occupies a special position on topical issues of modern socio-economic development. The elite is interested not only in new technological and economic results, but also in social progress. The strong support of the high-tech elite for income redistribution and progressive taxation allows us to take a fresh look at the prospects for the convergence of the positions of social clusters regarding the course

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of economic development. The communicative concept of the social contract is a suitable basis for the synthesis of ideas of social clusterism and collaborative democracy.

Key words: social contract, course of economic development, information elite, technological elite, social clusterism, collaborative democracy.

Introduction

Germany, Japan, and South Korea managed to work an "economic miracle" after the wars. One would like this situation to be typical for Russia as well. Despite the importance of working out individual projects and programs, the key success factor in a market economy is the formation of institutions that ensure constructive cooperation of elites expressing the interests of the main social groups. As D. Rodrik points out, the analysis of industrial policy should focus not on its results, which are inherently unknowable in advance, but on the correct conduct of the political process. "We need to worry about how we create conditions in which private and public entities unite to solve problems in the production sector, while each side learns about the opportunities and limitations faced by the other, and not about whether, say, targeted lending or subsidies for R&D is the right instrument of industrial policy or whether we should promote the steel industry or the software industry" (Rodrik, 2004, p. 3).

The communicative understanding of the social contract is aimed at creating such conditions: "The justification of the existence of the state consists primarily not in the protection of equal subjective rights, but in ensuring an open process of forming public opinion and will, during which free and equal citizens reach mutual understanding about what goals and norms are of common interest to all of them. Thus, more is required from a citizen of a republican state than a constant focus on self-interest" (Habermas, 2001, p. 385).

Scientific research pays more and more attention to the agenda of social contract. According to Google Academy, in 2001–2020, about 16 thousand materials appeared every five years, in one way or another addressing this topic, while starting from 2021, 15,800 such publications were recorded in just two and a half years. Usually there is a contractual interpretation of the social contract, in which the agreement between the people and the state regarding the goals, means of achieving them, ideological support, the effectiveness of feedback and the participation of the people in the management of the affairs of society and the state appears as the result of a kind of bargaining, compromise of the parties. At the same time, we can talk about the balance of interests not only between the whole people and the authorities, but also between the strata that make up the people, social communities and groups (Toshchenko, 2023).

However, contractual relations allow, with formal equality of the parties, significant differences in their bargaining power, the possibility of manipulation by a weaker, less informed party. According to J. Rawls (1995), equality of initial positions is a necessary condition for choosing a fair social structure. In this regard, we can talk about the limitations of the contractual interpretation of the social contract in relation to Russian society, since justice is among its core values. "Russia has traditionally been a country in which the demand for social justice at all times of its development has been particularly acute and of particular importance" (Grechikhin, 2020, p. 14).

The communicative concept of the social contract focuses not on reaching a compromise, but on bringing the parties closer together during the discussion of their positions. The social contract appears not as a one-time act, but as a

continuous communicative process. The procedural aspect of this process is of great importance for maintaining mutual understanding in the changing circumstances of socio-economic development.

Mutual understanding is formed in conditions when "a) no one who wants to make a relevant contribution to the discussion can be excluded from among its participants; b) everyone is given equal chances to make their own considerations; c) the thoughts of the participants should not diverge from their words; d) communication should be free from external or internal coercion so that the positions of acceptance or nonacceptance regarding the criticized claims to significance are motivated solely by the power of persuasion of more weighty grounds" (Habermas, 2001, p. 115).

The communicative understanding of the social contract assumes that the course of economic development is determined and adjusted in accordance with the mutual understanding reached regarding the desired future of the socio-economic system and the way to achieve it. As Russian practice has shown, the contractual version of the social contract, focused on the obligations of government and business, does not provide the level of investment necessary for economic growth. This refers to the social contract in the wording "loyalty in exchange for stability"[1]. Back in 2011 A.A. Auzan drew attention to the fact that the partners of the federal government "want to participate in making decisions about where the country is going. This is not necessarily political competition in the form in which it existed in the 1990s. It can be in other schemes and variants. But still, business, the active part of society, and regional and municipal authorities are not ready to invest if they do not have guarantees of their participation in decision-making. Therefore, the most preferable option for development is investment in development in exchange for participation in decision-making"[2]. We can conclude that the communicative version of the social contract is close to the needs of many Russian social actors.

As practice shows, countries where economic and political mechanisms meet such requests, where the preference for cooperation and competition is massive, are leaders in the life satisfaction index (happiness index) and are significantly ahead of other Western states, including the United States, in the development of economic and political institutions (Polterovich, 2022a; Polterovich, 2022b).

The war period is not the best time for discussions, but the very preparation for a public dialogue and discussion of its prospects are an important signal for everyone who considers changes within Russian society as a necessary condition for the country to achieve full national sovereignty and competitiveness in the 21st century. "Currently in Russia in the context of the SMO the prerequisites are being created for the formation of a new Social Contract, as well as new criteria for the coexistence and interaction of society and government, which will become relevant after all the goals of the special military operation have been achieved" (Ilyin, Morev, 2022, p. 9).

Some general contours of the future of Russia have already been outlined in the form of the determination to preserve traditional values while respecting the cultural identity of the peoples inhabiting the country. However, different solutions are possible within these boundaries, in particular with regard to economic policy. An attempt to outline the requirements for an updated social contract is presented in the work (Balatsky, Ekimova, 2022).

The elites are called upon to make a direct contribution to the search for a mutually acceptable image of the future for the whole society, which

[1] Alexander Auzan: Business expects guarantees of property rights from the social contract. Available at: https://rg.ru/2011/08/09/business.html

[2] Ibidem.

forms the basis of the social contract. This role of the elites corresponds to their very understanding. Thus, in the interpretation of J. Higley, elites are "individuals and groups that have the organizational potential for regular and strong influence on political decisions" (Higley, 2006, p. 24). The "narrow" interpretation of the elite corresponds to the political and administrative perspective of the analysis.

The understanding of the elite in the "broad" sense reflects the social stratification observed in any field of activity, when those who occupy the highest status positions in it (not necessarily formally fixed) are distinguished. As we know, the word "elite" corresponds to the French élite – the chosen one, the best, from Latin "eligo" – choose. According to this principle, in different spheres there are "communities of people who have received the highest index in their field of activity" (Pareto, 1995, p. 12).

The formation of an image of the future acceptable for the whole society is important not only for the purpose of more accurate forecasting of the achievability of personal goals or making appropriate strategic decisions. It serves to increase institutional and interpersonal trust, and accumulation of social capital. The formation of an image of the future uniting society is also the strengthening of the social identity of the country's population. The communicative interpretation of the social contract takes into account that not only the image of the future is important, but also the process of its joint comprehension, coordination of the views of the parties involved, and their willingness to negotiate under changing conditions. Developing an image of the future that suits different groups is a fundamental step in achieving social justice, and with it national security.

An important aspect of the argument in favor of the communicative concept of the social contract is the analysis of the extent to which the interests of citizens are taken into account by other concepts of public policy formation, including standard procedures for electoral democracy.

What opportunities and risks for the formation of the collective will of different social groups are associated with the development of modern communication technologies? What impact can the formation of an elite associated with digital technologies have on the prospect of transition to a communicative version of the social contract? These technologies appear among the factors prompting the renewal of the terms of the social contract. "The changes caused by digitalization are so radical that people have to rethink the old rules of social coexistence. In other words, a new stage of digital transformation of society implies a revision of the terms of the social contract" (Mikhaylenok, Malysheva, 2021, p. 36).

Review of modern literature

The work (Gilens, Page, 2014) presents the results of an empirical analysis of four theoretical concepts regarding whose interests are reflected by public policy. The empirical basis of the study was the materials of 1779 national surveys in the period from 1981 to 2002, when the general public of the United States was asked the question regarding their approval or disapproval of the proposed policy change. The following interpretations of the political process were compared: majoritarian electoral democracy, according to which the policy of the U.S. government is subordinated to the collective will of citizens, revealed as a result of democratic elections; the concept of dominance of the economic elite, which claims that people with significant economic resources play the main role in policy formation; the concept of majoritarian pluralism, which considers governmental policy as the result of rivalry between different interest groups; the concept of biased pluralism, taking into account the different "weight categories" of such groups.

A comparison of the concepts under consideration shows that public policy is influenced by the preferences of economic elites and the positions of organized interest groups, and the influence of the preferences of the average American is close to zero. M. Gilens and B. Page revealed that the common positions of the most influential, business-oriented groups are negatively related to the wishes of the average citizen. These results contrast with the conclusions of previous studies, which claimed that the policy of the U.S. federal government is consistent with the preferences of the majority of citizens in about two-thirds of cases (Monroe, 1998; Erikson et al., 2001). However, none of them evaluated the influence of variables such as the preferences of rich people or the preferences and actions of organized interest groups.

The work (Gilens, Page, 2014) gives some projection of the results obtained on practical interests: the authors express doubt that economic elites and leaders of interest groups know better which policy will benefit everyone: "Undoubtedly, wealthy Americans and corporate executives tend to know a lot about tax and regulatory policies that directly affect them. But how much do they know about the impact of social security, medical care, food stamps, or unemployment insurance, none of which is likely to be crucial to their own well-being? Most importantly, we see no reason to believe that information competence is always accompanied by a tendency to go beyond one's own interests or a determination to work for the common good. In general, we believe that the public is likely to be a more confident defender of its own interests than any possible alternative" (Gilens, Page, 2014, p. 576).

R. Holcombe (Holcombe, 2021) in his article actually contradicts the above assessment of the public, but in relation to the preferences of citizens in the political sphere. He examines the factors influencing political preferences of the masses, and concludes that people adopt political preferences imposed on them by the political elite. One explanation for this is that people do not independently develop their political preferences on individual issues. Rather, they form anchor preferences that determine their political orientation. Having become attached to the political party that best matches their anchor preferences, people tend to accept the rest of that party's platform as derived preferences (Holcombe, 2023). To reduce cognitive dissonance, people readily accept information that supports their anchor and tend to reject information that calls it into question (Mullainathan, Washington, 2009). Voters who have little incentive to collect information on their own often follow the recommendations of the interest groups with which they identify themselves. People want to fit into the society of their friends and therefore tend to adopt the political preferences of their peer groups (Chen, Urminsky, 2019). In addition, people can vote for candidates and policies that promote the redistribution of public funds in favor of the poor, even if these voters are unfriendly and would not give money to the poor themselves. Voting to help the less fortunate brings such voters moral satisfaction and does not require any material costs from them (Holcombe, 2021).

An example of a narrow interpretation of the economic interests of political power and its leader is the theory of information autocracy, presented in articles by S. Guriev and D. Treisman (Guriev, Treisman, 2019; Guriev, Treisman, 2020). The gap between the "informed elite" and the general public in knowledge about the real state of affairs is a key element of this theory, where the leader is contrasted with the "informed elite" who follows them, and the general public who does not. According to this theory, the leader's position depends on two variables – the number of the informed elite and the ease with which, given the technological capabilities, the state is able to monopolize the media. Both variables are related to the level of the country's economic development. "In highly

developed modern countries, the informed elite is usually too numerous for manipulation to work, and censorship of all private media is expensive: democracy is the only option" (Guriev, Treisman, 2019, pp. 16–17). However, in practice, this provision of the theory of information autocracy is most impressively violated in highly developed modern countries. In the USA and Western Europe, there is currently an almost complete blockade in the media on opinions that are not desirable to the official course of governments.

S. Guriev and D. Treisman actually postulate that in the model of information autocracy, an official does not try to improve the work of the state apparatus, but only seeks to influence public opinion by manipulating information. It is said that the leader does not benefit from GDP growth directly, but only by increasing resources to finance propaganda, co-optation of the informed elite, censorship and/or repression (Guriev, Treisman, 2020).

Although the theory of information autocracy has become quite popular, its interpretation of the activities of leaders, whom S. Guriev and D. Treisman refer to as authoritarian, remains overly simplified. Such leaders include, in particular, Recep Tayyip Erdogan, Lee Kuan Yew, Hugo Chávez, Viktor Orbán. Presenting them as people concerned solely with maintaining their positions of power is highly debatable. Professor A. Przeworski of New York University (Przeworski, 2022) has already drawn attention to this. In his opinion, it is difficult for Democrats to understand the very idea that authoritarian regimes can enjoy popular support. "Unless they are "brainwashed" or "indoctrinated," how can people conceivably support an autocrat? Autocracies are assumed to be inherently brittle, surviving only because people are misled or repressed... Certainly, all actions by government officials have some effects of regime stability. But this does not mean that all their actions are motivated by the drive to survive in power" (Przeworski, 2022, p. 1). The point is that the theory of information autocracy ignores the efforts of rulers to provide what people value. A. Przeworski asks: "Is it irrelevant that average Chinese incomes increased sixfold since 1978?" He points to the ideological bias of the theory of information autocracy. "The very idea that autocracies may enjoy popular support is hard to fathom for democrats" (Przeworski, 2022, p. 2).

The presence of different points of view in the information field is not necessarily a threat to the authorities. This is evidenced by the results of a study carried out on Russian materials. Based on the conducted experiments, it is shown that independent media contribute to the polarization of society (Enikolopov et al., 2022). It was found that access to free online media increases both the turnout of supporters of the regime for the elections and the number of votes for the ruling party in constituencies where support was quite high. While polarization is often considered detrimental to the stability of existing democracies (Abramowitz, McCoy, 2019), in autocracies the effect may be the opposite (Enikolopov et al., 2022, p. 23). In fact, it is confirmed that messages aimed at consumers with polar preferences can have the opposite effect, reinforcing existing preferences rather than canceling them (Lord et al., 1979; Ditto, Lopez, 1992). A similar conclusion about the possibility of a positive influence of independent foreign media on the state of the autocratic regime is contained in (Kern, Hainmueller, 2009).

It is important, however, to take into account the impact of polarization of society, confrontation of elites on the pace of economic development. The paper (Azzimonti, 2011) presents a model showing how disagreements over the structure of spending in a polarized and politically unstable society lead to a slowdown in economic growth. In this model, a formalized explanation is obtained for such empirical conclusions by W. Easterly and R. Levine (Easterly, Levine 1997) and R. Barro

(Barro, 1991). With a strong polarization of society, the policy of the current government is largely dictated by political uncertainty and the prospect of losing power positions. Hence the desire to accelerate the satisfaction of the financial needs of one's own electorate, even at the expense of the prospects for economic development, at the cost of reducing investment. The more disagreements reflected by the degree of polarization, the more short-sightedness is manifested in the policy choice of the current government (Azzimonti, 2011, p. 2202).

D. Acemoglu and J. Robinson showed that political elites can block technological and institutional development due to the "political replacement effect", fearing their displacement from positions of power by the new elite. It is argued that in the presence of political competition, elites are unlikely to block development. However, the higher the political stakes, the more likely is the blocking (Acemoglu, Robinson, 2002). This result is further evidence that the strong polarization of society has a negative impact on investment and innovation.

A leader with ambitious plans for the development of the country has to deal not only with their supporters, but also with groups that are satisfied with the status quo and do not feel the desire for change, and nostalgic for the lost power. When the activities of such groups are aimed at polarizing society, the leader is faced with a choice: try to contain this polarization or sacrifice their own plans.

The observed decrease in the participation of citizens in elections, decline in confidence in political institutions, intensification of protest movements and mass riots indicate the crisis of modern Western democracy based on interparty competition (Polterovich, 2021). The analysis of a number of transformations taking place in Western countries and serving to overcome this crisis has become the basis for the formation of the concept of collaborative democracy. Polterovich defines a representative system of political decision-making as a collaborative democracy if it: a) provides voters with access to the decision-making process and broad opportunities for choice; b) provides for decision-making based on cooperation; c) is aimed at finding effective solutions close to consensus; d) relies on expert assessments and is protected from becoming an ochlocracy (Polterovich, 2021).

The requirement contained in item (c) to search for consensus solutions presupposes the active use of consensus political institutions (Polterovich, 2022a) and is the basis for presenting collaborative democracy as consensual. The approach to rapprochement of the parties during the discussion of their positions allows us to consider collaborative democracy as the embodiment of the communicative concept of the social contract.

Digital technology and the views of the high-tech elite

Technological development leads to the fact that new resources claim to be the key factor of production, and the owners of these resources claim to be the ruling elite. Currently, radical changes in the technological base of the economy are associated with digital technology. The owners of huge digital companies have already noticeably pushed the financial and fuel and energy elite on the economic Olympus. What are we to expect from the new elite? What are its preferences? The answers to these questions are important not only for the economy.

Digital technology has radically changed the information sphere. Electronic media, information and communication platforms play an important role in this area. The example of Alphabet Inc., which manages Google Inc. and its subsidiaries, shows the desire of the information elite to diversify its business. In addition to various services on the Internet, Google's activities cover, in particular, the sale of goods under the brands Fitbit (smart watches), Google Nest (household goods) and Pixel (electronics).

In the theory of information autocracy, the information elite is presented in a very simplified form, in fact without its own power ambitions. Its representatives either serve the autocrat, or track his mistakes and abuses and inform the public about them. Attention is not paid to the willingness of the elite to manipulate information, to introduce its own censorship not only for the sake of the current government, but also to the detriment of it, based on its own interests. The information elite, not co-opted by the authorities, is represented in (Guriev, Treisman, 2020) as a champion of democracy.

This elite appears in a completely different image in the book by A. Bard and J. Söderqvist (Bard, Söderqvist, 2004). In the theory of information autocracy the multiplication of information channels leads to an increase in the democratic orientation of social development, while in the concept of netocracy it is expected that the crisis of democracy will have a fatal outcome, and the information network will act more like an old woman with a scythe than a knight in shining armor. According to this concept, the idea that the transparency of the network will increase the openness of society and the full implementation of the principles of democracy at all levels, that information will be equally accessible to all network participants and they will have equal opportunities for influence, should be considered nothing more than netocratic propaganda.

A. Bard and J. Söderqvist write about a new power hierarchy in the information society, the hierarchy organized on the basis of membership in various networks. In their opinion, at the lower level of this pyramid there is a consumtariat – those who only consume information. Its role in production processes is auxiliary. The process of consumption of production goods is regulated by a higher level; desires are prompted by advertising. The inspired attitude toward self-expression as the goal of being forms the masses that are focused on their own problems and not interested in the world order. A hierarchy of networks with increasingly restricted access rises above the consummate network, filled with information garbage that distracts from what is important. The decisive factor controlling an individual's position in this hierarchy is their attractiveness to the network, that is, the ability to absorb, sort, evaluate and generate attention to themselves and valuable information. At the top of the hierarchy are those who make up the ruling class of the netocrats, who are most adept at owning attention as the most valuable resource in the new world. The appropriation of attention appears as a new meaning of exploitation, and knowledge of the true state of things is a privilege of the netocracy and one of the foundations of its power. The lack of attention to the fact that the information elite is also a high-tech elite brings the concept of netocracy closer to the theory of information autocracy.

We should note that the allocation of several levels of the information pyramid in the concept of netocracy reflects the practice of increasing the efficiency of information manipulation. Opinion leaders can act as an intermediate level between netocrats and the consumtariat. They not only help to perceive the transmitted information, but also give it greater credibility.

A. Bard and J. Söderqvist are not enthusiastic about the decline of democracy and do not assume the role of capitulators or fatalists. In the preface to their book, they note: "Granted, in any conditions, it is possible to find a way to influence the course of social development to one degree or another, but only based on a more or less adequate model of such development. Good intentions are powerless by themselves. Opportunities to influence the course of events will appear only if we are able to create a sufficiently detailed and at the same time unbiased model of what are the objective historical prerequisites and the inner nature of the phenomena gaining strength" (Bard, Söderqvist, 2004, p. 2).

Presented by A Bard and J. Söderqvist back in 2000[3], the picture of the development of the information sphere is close to what appears in modern literature as surveillance capitalism (Zuboff, 2015), platform capitalism (Srnicek, 2016). In all these concepts, asymmetry in knowledge ("information is the new oil") leads to asymmetry in power.

The activities of information and communication platforms are not limited to the role of intermediaries. Facebook not only unites more people than any one country on this planet controls, but also "knows more about voters' personal preferences, political engagement and psychographic trigger points than many governments in this world" (Helberger, 2020, p. 842). Such knowledge turns platforms into holders of significant political power over public opinion. Back in 2007, M. Castells drew attention to the fact that "politics is based on socialized communication, on the ability to influence people's minds" (Castells, 2007, p. 240).

In the work (Helberger, 2020, p. 849) it is stated that "currently, in Europe, there are no proposals on the table to set limits to how far platforms may go in using AI, algorithms and the data they collect to persuade and abuse that power for own political purposes". Attempts to introduce certain standards of social responsibility of platforms further strengthen the influence of these platforms on public opinion and, consequently, their political power.

In such conditions, special importance is attached to the studies that do not consider the economic elite as homogeneous, but are aimed at identifying the views of the new technological elite on topical issues of modern socio-economic development. These studies actually serve to form a model of objective historical prerequisites and the inner nature of the phenomena gaining strength; this was advocated by A. Bard and J. Söderqvist.

[3] The book by A. Bard and J. Söderqvist was published in Swedish in 2000.

Tech entrepreneurs have already used their opportunities to influence U.S. politics. For example, in 2012, Google and other Internet companies asked their websites' visitors to contact Congress to oppose the Stop Online Piracy Act, which would make them responsible for posting content that violates copyrights. Congress has faced a flood of appeals, as a result of which Congressional support for the bill has come to naught (Broockman et al., 2019).

Research results show that U.S. tech entrepreneurs (Apple, Amazon, Alphabet/Google, Microsoft, Facebook, etc.) adhere to a special set of views unusual for any other mass or elite group. In the work (Broockman et al., 2019), based on the conducted surveys, the opinion of the high-tech elite is presented in four policy areas: redistribution, regulation, globalization and social issues.

Tech entrepreneurs are strongly committed to globalization, support free trade agreements (87%), and advocate for an increase in immigration (56%). Among tech entrepreneurs who participated in the survey, 61.3% identify themselves as Democrats compared to only 14.1% who identify themselves as Republicans.

Tech entrepreneurs almost unanimously support same-sex marriage (96%), are in favor of gun control (82%) and against the death penalty (67%), consider abortion as a matter of personal choice (79%).

Such entrepreneurs strongly support redistribution and progressive taxation. Almost all of them are in favor of raising taxes for those who earn more than $250,000 or $1,000,000 a year, 75% support federal spending on programs that benefit only the poor, and 59% believe that such spending should be increased, 82% stated the need for universal health care, even if it is means higher taxes.

Despite their liberalism in matters of economic redistribution, technology entrepreneurs are very conservative in matters of government regulation. They are less likely than Democrats to support regulation of commodity markets and are much

more likely to believe that government regulation of business does more harm than good. Their conservative views on issues related to trade unions and labor market regulation are very similar to the views of Republicans. The combination of conservative views of technology entrepreneurs on regulation and liberal views on economic redistribution is unique.

These observations allow us to imagine the possible evolution of the policy of the U.S. Democratic Party under the influence of tech entrepreneurs, and in this regard, the evolution of American politics as a whole. Students specializing in computer science already hold much the same views as the founders of tech companies.

The conclusion that members of the tech elite adhere to similar worldviews and clearly form a separate faction of the capitalist class was confirmed in a study that was no longer limited to U.S. entrepreneurs, but focused on Forbes 100 richest people in the world in the field of high technology (Brockmann et al., 2021). Those who got on the Forbes list earned their money mainly on computer programs, hardware and Internet-related technologies and services. Half of the 100 largest technology billionaires are representatives of the USA, 5 – Canada, 5 – Europe, 17 – China, 3 – Hong Kong, 7 – other parts of East Asia: South Korea, Japan, Taiwan and Singapore. Three are entrepreneurs from Israel, two from India, two from Australia, one from Brazil and one from Russia. The study showed that the 100 richest representatives of the world of technology demonstrate special views that distinguish them from the general population and other wealthy elites. Since the companies they have created occupy a dominant position in the emerging technology-based economy, the views of the high-tech elite have a great influence on how economic resources are spent. It is suggested that, despite the concern about money as a measure of success, the technological elite seems to really have strong positive feelings toward the idea of "making the world a better place". The argument is that sixty technology entrepreneurs from the sample under consideration have charitable foundations that maintain their own websites (Brockmann et al., 2021). To what extent such actions are self-valuable for the technological elite, to what extent they are designed to weaken the resistance to change on the part of the old elite, the future will show.

Conclusion

The advantages of collaborative democracy presented in the works (Polterovich, 2022a, Polterovich, 2022b) can be supplemented by a higher stability of the economy in a turbulent economic environment, which was demonstrated during the COVID-19 pandemic by a group of countries (Denmark, Norway, Sweden, Finland, Iceland, Switzerland and the Netherlands) that gravitate toward this management system (*Table*).

GDP dynamics in 2020–2022, %

Country	2020	2021	2022
Denmark	-1.99	4.86	3.82
Norway	-1.28	3.90	3.28
Sweden	-2.17	5.39	2.64
Finland	-2.35	3.05	2.08
Iceland	-7.24	4.33	6.44
Switzerland	-2.38	4.22	2.06
The Netherlands	-3.89	4.86	4.48
European Union	-5.67	5.47	3.54
UK	-11.03	7.60	4.10
OECD countries	-4.21	5.47	2.78
Source: World Development Indicators.			

The cumulative decline in GDP for this group of countries in 2020 was 2.6%, which is more than twice less than in the European Union as a whole.

During large-scale structural shifts in the economy, uncertainty about the future is fuelled by a significant difference in the views of the elites on it. In such conditions, of particular importance is the joint understanding of the prospects for the development of the country by the Russian elites. Despite the attractiveness of direct participation of citizens in decision-making, in order to prevent the polarization of the options put to the vote, it is advisable to bring the positions of opinion leaders and the existing elites closer together. The concept of social clusterism focuses on achieving a balance of their interests (Makarov, 2010). Taking into account the above, it is necessary to identify subclusters within the business cluster.

The involvement of cluster elites in the search for consensus solutions opens up the prospect of addressing two of the most important and related difficulties of collaborative management. We are talking about the complexity of organizing a productive discussion between millions of agents and the need for a high level of competence for effective government decision-making (Polterovich, 2021).

The cooperation of the elites of social clusters does not mean that the issue concerning direct voting and the voting within clusters can be withdrawn from the agenda. An important warning is the argument presented in (López, Dubrow, 2020) that the reproduction of political inequality within countries and over time is the result of two key interrelated mechanisms: the coordination of elites and the discoordination of the masses.

Under any management system, there is a danger of its degeneration, erosion of the original principles. R. Michels drew attention to this back in 1911 when he formulated the "iron law of oligarchy" (Michels, 2001). When the basis of a social contract is a general recognition of the need for mutual understanding of all parties, such recognition should be confirmed and implemented within the framework of regular practice. This is the meaning of interpreting a communicative social contract as a process rather than a one-time act. In order for the coordination of the interests of social clusters not to be replaced by the coordination of the interests of elites, it is necessary to expand the direct participation of citizens in decision-making, including regular referendums on the most important issues. At the same time, the role of experts called upon to analyze and explain to citizens the possible consequences of certain decisions is increasing (Polterovich, 2021).

According to E. Ostrom, effective joint activity requires a certain community of interests. In the successful self-governing institutions she has studied, people have a common past and expect to share a future. It is important for them to maintain their reputation as reliable members of the community (Ostrom, 2013).

As studies of the foreign high-tech elite show, they are interested not only in new technological and economic results, but also in social progress. The fact that this elite advocates for redistribution and progressive taxation allows us to take a fresh look at the possibilities of reducing the differentiation of social clusters by income. It can be expected that the ambitions of Russian business in the field of high technology will eventually go increasingly beyond the pursuit of profit. It is to be hoped that the approval of some inclusive cultural innovations will remain the specifics of the U.S. high-tech elite.

Business is forced to respond to the measures of the state economic policy. However, their support for the country's economic development course will become more active if this course is developed with the direct participation of business along with other social clusters. Moreover, such a joint formation of an economic course will not be reduced to the clusters bargaining for some concessions from the government.

The elites' preliminary formulation of ideas about the country's future for the medium and long term can be useful to accelerate the development of a joint strategy for national socio-economic development. At the same time, it is important to have the initial attitude that the formation of collective will is associated with a change in the initial preferences of the parties and their plans for the future. Political institutions are designed to add this to the process of forming collective will (Floridia, 2013). When armchair strategies developed outside of the presented process claim to express such a will, it looks like a request for the transfer of power to a meritocracy. Currently, the concept of meritocracy is questioned in many articles and books (Frank 2016; Littler 2017; Markovits, 2019). As critics of the meritocratic formulation of "equality of opportunity" point out, it has a positive meaning, but serves plutocrats as a cover for inequality. "Whilst the existence of elites is hardly new, what is to some degree more historically novel is the extent to which large sections of today's plutocracy feels the need to pretend they are not an elite at all" (Littler, 2017, p. 115). This tactic is successful: "The more unequal a society, the more likely its citizens are to explain success in meritocratic terms, and the less important they deem nonmeritocratic factors such as a person's family wealth and connections" (Mijs, 2021, p. 7).

Diligence in studies increases the chances of getting a high-paying job, but 22 of the 100 richest representatives of the world's high-tech elite have never studied at college or university (Brockmann et al., 2021). People experience severe psychological stress when there is an imbalance between the dominant and pervasive ideology of meritocracy and their efforts to climb the social ladder through hard work (Garrison et al., 2021).

It is possible to put "equality of results" above "equality of opportunity" (Littler, 2017), taking into account that wealth is not a universal measure of results. The concept of social clusterism allows for the joint elaboration of a development strategy, the coordination of the interests of clusters, when each of them is guided by their own understanding of the results. The communicative concept of social contract is a suitable basis for the synthesis of ideas of social clusterism and collaborative democracy.

References

Abramowitz A., McCoy J. (2019). United States: Racial resentment, negative partisanship, and polarization in Trump's America. *The ANNALS of the American Academy of Political and Social Science*, 681(1), 137–156.

Acemoglu D., Robinson J.A. (2006). Economic backwardness in political perspective. *American Political Science Review*, 100(1), 115–131. DOI:10.1017/S0003055406062046

Azzimonti M. (2011). Barriers to investment in polarized societies. *American Economic Review*, 101(5), 2182–2204. DOI: 10.1257/aer.101.5.2182

Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. *Journal of Institutional Studies*, 3, 74–90. DOI: 10.17835/2076-6297.2022.14.3.074-090 (in Russian).

Bard A., Söderqvist J. (2004). *Netokratiya. Novaya pravyashchaya elita i zhizn' posle kapitalizma* [Netocracy: The New Power Elite and Life After Capitalism]. Saint Petersburg: Stokgol'mskaya shkola ekonomiki v Sankt-Peterburge.

Barro R. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), 407–443.

Brockmann H., Drews W., Torpey J. (2021). A class for itself? On the worldviews of the new tech elite. *PLoS ONE*, 16(1), e0244071. DOI: https://doi.org/10.1371/journal.pone.0244071

Broockman D.E., Ferenstein G, Malhotra N. (2019). Predispositions and the political behavior of American economic elites: Evidence from technology entrepreneurs. *American Journal of Political Science*, 63(1), 212–233. DOI: https://doi.org/10.1111/ajps.12408

Castells M. (2007). Communication, power and counter-power in the network society. *International Journal of Communication*, 29(1), 238–266.

Chen S., Urminsky O. (2019). The role of causal beliefs in political identity and voting. *Cognition*, 188, 27–38. DOI: 10.1016/j.cognition.2019.01.003

Ditto P.H., Lopez D.F. (1992). Motivated skepticism: Use of differential decision criteria for preferred and nonpreferred conclusions. *Journal of Personality and Social Psychology*, 63(4), 568–584.

Easterly W., Levine R. (1997). Africa's growth tragedy: Policies and ethnic divisions. *Quarterly Journal of Economics*, 112(4), 1203-50.

Enikolopov R., Rochlitz M., Schoors K.J.L., Zakharov N. (2022). *The Effect of Independent Online Media in an Autocracy.* Available at: https://ssrn.com/abstract=4131355. DOI: http://dx.doi.org/10.2139/ssrn.4131355

Erikson R., Mackuen M., Stimson J. (2001). *The Macro Polity. Cambridge Studies in Public Opinion and Political Psychology.* Cambridge: Cambridge University Press. DOI:10.1017/CBO9781139086912

Floridia A. (2013). *Participatory Democracy Versus Deliberative Democracy: Elements for a Possible Theoretical Genealogy. Two Histories, Some Intersections. Paper Presented at the 7th ECPR General Conference, Sciences Po, Bordeaux, September 4–7.* Available at: https:// ecpr.eu/Filestore/PaperProposal/71d7f83c-3fe4-4b11-82a2-c151cd3769f4.pdf

Frank R.H. (2016). *Success and Luck: Good Fortune and the Myth of Meritocracy*. Princeton, NJ: Princeton University Press.

Garrison Y.L., Rice A., Liu W.M. (2021). The American meritocracy myth stress: Scale development and initial validation. *The Counseling Psychologist*, 49(1), 80–105. DOI: 10.1177/0011000020962072

Gilens M., Page B. (2014). Testing theories of American politics: Elites, interest groups, and average citizens. *Perspectives on Politics*, 12(3), 564–581. DOI: 10.1017/S1537592714001595

Grechikhin V.G. (2020). Problems of social justice and inequality in modern Russian society. *Teoriya i praktika obshchestvennogo razvitiya=Theory and Practice of Social Development,* 5(147), 14–17 (in Russian).

Guriev S., Treisman D. (2019). Informational autocrats. *Journal of Economic Perspectives*, 33(4), 100–127. DOI: 10.1257/jep.33.4.100

Guriev S., Treisman D. (2020). A theory of informational autocracy. *Journal of Public Economics*, 186(104158). DOI: https://doi.org/10.1016/j.jpubeco.2020.104158.

Habermas J. (2001). *Vovlechenie drugogo. Ocherki politicheskoi teorii* [The Inclusion of the Other: Studies in Political Theory]. Saint Petersburg: Nauka.

Helberger N. (2020). The political power of platforms: How current attempts to regulate misinformation amplify opinion power. *Digital Journalism*, 8(6), 842–854. DOI: 10.1080/21670811.2020.1773888

Higley J. (2006). Democracy and the elites. *Politiya,* 2, 22–31 (in Russian).

Holcombe R.G. (2021). Elite influence on general political preferences. *Journal of Government and Economics*, 3(C), 1–7. DOI: 10.1016/j.jge.2021.100021

Holcombe R.G. (2023). *Following Their Leaders: Political Preferences and Public Policy*. Cambridge University Press. DOI: https://doi.org/10.1017/9781009323178

Ilyin V.A., Morev M.V. (2022). A framework for a new Social Contract is being formed in Russia. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(6), 9–34. DOI: 10.15838/esc.2022.6.84.1 (in Russian).

Kern H.L., Hainmueller J. (2009). Opium for the masses: How foreign media can stabilize authoritarian regimes. *Political Analysis*, 17(4), 377–399.

Littler J. (2017). *Against Meritocracy: Culture, Power and Myths of Mobility*. New York: Routledge.

López M., Dubrow J.K. (2020). Politics and inequality in comparative perspective: A research agenda. *American Behavioral Scientist*, 64(9), 1199–1210. DOI: https://doi.org/10.1177/0002764220941234

Lord C.G., Ross L., Lepper M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37(11), 2098–2109.

Makarov V.L. (2010). *Sotsial'nyi klasterizm. Rossiiskii vyzov* [Social Clusterism. Russian Challenge]. Moscow: Biznes Atlas.

Markovits D. (2019). *The Meritocracy Trap: How America's Foundational Myth Feeds Inequality, Dismantles the Middle Class, and Devours the Elite*. New York: Penguin Press.

Michels R. (2001). *Political Parties. A Sociological Study of the Oligarchical Tendencies of Modern Democracy*. Kitchener: Batoche Books.

Mijs J.B. (2021). The paradox of inequality: Income inequality and belief in meritocracy go hand in hand. *Socio-Economic Review*, 19(1), 7–35. DOI: https://doi.org/10.1093/ser/mwy051

Mikhaylenok O.M., Malysheva G.A. (2021). COVID-19 pandemic – new stage of social digital transformation. *Sotsial'nye i gumanitarnye znaniya*, 7(1), 28–39 (in Russian).

Monroe A.D. (1998). Public opinion and public policy 1980–1993. *Public Opinion Quarterly*, 68, 6–28.

Mullainathan S., Washington E. (2009). Sticking with your vote: Cognitive dissonance and political attitudes. *American Economic Journal: Applied Economics*, 1(1), 86–111.

Ostrom E. (2013). *Upravlenie obshchim. Evolyutsiya institutsii kollektivnogo deistviya* [Governing the Commons: The Evolution of Institutions for Collective Action]. Kiev.

Pareto V. (1995). History – the cemetery of the elites. *Politicheskaya mysl',* 3.

Polterovich V.M. (2021). Crisis of institutions of political competition, Internet and collaborative democracy. *Voprosy ekonomiki*, 52–72. DOI: https://doi.org/10.32609/0042-8736-2021-1-52-72 (in Russian).

Polterovich V.M. (2022a). Competition, collaboration, and life satisfaction. Part 1. The Seven of European leaders. *Ekonomicheskie i sotsial'nye peremeny: fakty. tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(2), 31–43. DOI: https://doi.org/10.15838/esc.2022.2.80.2 (in Russian).

Polterovich V.M. (2022b). Competition, collaboration, and life satisfaction. Part 2. The fundament of leadership – collaborative advantage. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(3), 42–57. DOI: 10.15838/esc.2022.3.81.2 (in Russian).

Przeworski A. (2022). Formal models of authoritarian regimes: A critique. *Perspectives on Politics*, 1–10. DOI: 10.1017/S1537592722002067

Rawls J. (2010). *Teoriya spravedlivosti* [a Theory of Justice]. Second edition. Moscow: URSS; LKI.

Rodrik D. (2004). Industrial policy for the twenty-first century. *CEPR Discussion Papers 4767*. Available at: https://cepr.org/publications/DP4767

Srnicek N. (2016). *Platform Capitalism*. Wiley.

Toshchenko Zh.T. (2023). Social contract: Historical and contemporary realities in Soviet/Russian society. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 16(3), 39–53. DOI: 10.15838/esc.2023.3.87.2 (in Russian).

Zuboff S. (2015). Big Other: Surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, 30(1), 75–89. DOI: 10.1057/jit.2015.5

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Scenario Modeling and Forecasting of the Spatial Heterogeneity of Innovation Development in Russia

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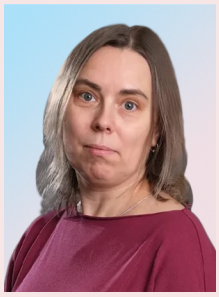

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Abstract. Uneven spatial innovation development of Russia is due to many factors such as GRP volume, fiscal capacity of territories, fixed capital investments attracted by enterprises. However, the key factors determining the concentration of innovation industries in territorial systems of various levels are enterprises' expenditure on innovation activity and the available scientific personnel potential. The increasing spatial heterogeneity of localization and concentration of these resources, according to our research hypothesis, enhances the spatial heterogeneity of innovation development in Russia. To confirm this hypothesis, we aim to assess the spatial heterogeneity of enterprises' innovation development at the national level and carry out scenario modeling and forecasting of the dynamics of this heterogeneity until 2025. The paper presents a methodological approach to scenario forecasting of the spatial heterogeneity of innovation development of Russia. In the framework of the approach, the heterogeneity is assessed using spatial autocorrelation analysis according to P. Moran's method,

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regression analysis of the dependence of the volume of shipped innovation goods and services performed on the costs of innovation activities carried out by enterprises, and the number of research personnel in the regions, as well as autoregressive analysis of the dynamics of their changes using a moving average (ARIMA modeling) to form the most likely forecast scenarios of innovation development for different groups of regions. The novelty of the approach lies in the system-wide use of spatial autocorrelation analysis methods based on various spatial weight matrices, regression analysis methods based on panel data and ARIMA modeling, which in combination with each other make it possible to determine the degree of influence of the factors on the heterogeneity of innovation development in regions and to form a system of various forecast scenarios. The results of the study will serve as the basis for the formation of Russia's innovation framework. The constructed forecast scenarios will help to form strategies for innovation development in Russian regions, taking into account the identified features of the spatial localization of factors that have a significant impact on innovation development.

Key words: spatial heterogeneity, Russia's regions, innovation development, expenditure on innovation activity, Cobb – Douglas function, regression modeling, spatial autocorrelation, ARIMA modeling.

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Introduction

Currently innovation development of enterprises is an important factor promoting sustainable, progressive socio-economic development of territorial systems at various levels. The introduction of technical, technological, organizational, economic, social and other innovations in various spheres of life and their active implementation in the form of innovation products open up new technological opportunities for the development of enterprises and growth of their competitiveness and also shape the progress-based image of territories. A significant number of research works deal with innovation issues and investigate trends in innovation development of territories, factors contributing to such development, and mechanisms that help to increase innovation activity. Some of the works include those by A.G. Granberg, S.D. Valentey (Granberg, Valentey, 2006), N.I. Komkov (Komkov, 2017), I.M. Golova, A.F. Sukhovey (Golova, Sukhovey, 2017), O.A. Donichev, D.Yu. Fraimovich, S.A. Grachev (Donichev et al., 2018), A.A. Kisurkin (Kisurkin, 2012), P.A. Degtyarev (Degtyarev, 2020), S.N. Mityakov, O.I. Mityakova, N.A. Murashova (Mityakov et al., 2017) and others. However, little attention is given to spatial aspects related to the implementation of innovation activities by enterprises. The current polarization of innovation development is largely due to the spatial features regarding the concentration of scientific potential and financial resources. Thus, an urgent task is to assess and predict the dynamics of changes in the spatial heterogeneity of the placement of these factors in order to develop mechanisms for smoothing it.

We test a hypothesis according to which the increasing spatial heterogeneity in the localization and concentration of research personnel and enterprises' expenditures on the implementation of innovation activities enhances the spatial heterogeneity of innovation development in Russia. Thus, the aim of the work is to conduct an assessment, scenario modeling and forecasting of spatial heterogeneity of innovation development of enterprises in Russia until 2025. To achieve the

goal, we set the following tasks: theoretical review of assessment methods, scenario modeling and forecasting of spatial heterogeneity of innovation development of territories and the formation of a system-wide approach that takes into account the advantages and disadvantages of these methods; assessment of spatial heterogeneity of Russia's innovation development; search for the main centers (growth poles), regions that are similar in the level of their innovation development that can unite in spatial clusters, as well as the zones of their influence; formation of the Cobb – Douglas regression model using panel data on Russian regions to assess the effectiveness of innovation industries in territorial systems, the impact of enterprises' expenses on innovation activities and research personnel in the region on the volume of shipped innovative goods; ARIMA modeling of the dynamics of these factors in order to form the most likely forecast scenarios for innovation development of regions until 2025: an inertial scenario, taking into account the observed trends, an optimistic and a pessimistic scenario. Solving these research tasks will make it possible to forecast the dynamics of spatial heterogeneity of innovation development of Russian regions, and the constructed models will help to develop mechanisms for smoothing it.

Theoretical and methodological approaches to the assessment and forecasting of spatial heterogeneity in the innovation development of a territory

Spatial heterogeneity of innovation development is investigated with the use of various assessment methods, statistical analysis being the most common of them. Researchers use various techniques and methods to assess spatial aspects of innovation development of Russian regions: A.V. Krivchanskaya (Krivchanskaya, 2017), M.S. Gusarova (Gusarova, 2021), M.A. Dugarzhapova and E.A. Zhalsaraeva (Dugarzhapova, Zhalsaraeva, 2020), O.S. Moskvina (Moskvina, 2019), V.N. Makoveev (Moskvina, Makoveev, 2019) use statistical indices; E.F. Nikitskaya (Nikitskaya, 2020) uses indicators of density, structure, concentration, convergence and connectivity; V.V. Filatov (Filatov, 2014) uses commission methods, the Delphi method, morphological analysis and extrapolation; O.P. Smirnova, A.O. Ponomareva (Smirnova, Ponomareva, 2020) use methods of correlation analysis, standardization and aggregation of indicators; E.A. Polina and I.A. Solovyeva (Polina, Solovyeva, 2019) use multidimensional factor analysis methods. These methods of studying spatial heterogeneity are more often used by researchers at the initial stage of its assessment, for grouping territories according to enterprises' innovation development indicators. They do not allow us to simulate the influence of factors on innovation development of territorial systems and form predictive scenarios for the deployment of innovation processes in the future.

Spatial heterogeneity of innovation development of territorial systems was also assessed with the help of spatial clustering methods. Thus, A.L. Myachin, for example, used methods of analyzing clustering patterns (Myachin, 2020). The use of clustering methods allowed F.A. Blanco, F.J. Delgado, M.J. Presno to establish the convergence of the European Union countries in terms of spending on science and substantiate "the need to revise the EU policy in the field of research and development in the direction of greater coordination of resource use, as well as the introduction of new tools" (Blanco et al., 2020). Spatial clustering methods were also used by A.S. Mikhailov, V.V. Gorochnaya, D.V. Khvaley, I.S. Gumenyuk according to several criteria. The statistical assessment was "supplemented by an analysis of the spatial concentration of innovation potential taking into account the agglomeration factor" (Mikhailov et al., 2020).

I.P. Kilina used intraregional and spatial innovation parameters (density and homogeneity indices) to cluster regions according to the level of innovation development. On the basis of the indices and with the use of gravity indicators, the author formed an innovation profile of regions,

which made it possible to arrange RF constituent entities into typological groups, identify their specifics, and reveal directions of interregional cooperation in the innovation sphere[1]. To assess the spatial heterogeneity of innovation development, I.V. Naumov and A.Z. Barybina used "spatial autocorrelation analysis according to the method of P. Moran and L. Anselin using various spatial weight matrices to search for innovation growth poles, interregional spatial clusters, zones of their influence" (Naumov, Barybina, 2020).

In comparison with statistical methods, cluster analysis methods are more suitable for assessing the spatial heterogeneity of innovation development of territorial systems; they help to objectively form clusters of similar territorial systems. At the same time, unlike statistical methods, cluster analysis methods focus primarily on spatial aspects when identifying clusters and include closely located territories in clusters. At the same time, both statistical research methods and clustering methods do not allow modeling and forecasting changes in the spatial heterogeneity of innovation development in the future, but form only the basis for it. Thus, when assessing and modeling the heterogeneity of the distribution of green innovations in 30 provinces of China from 2009 to 2019 P. Liu, L. Zhang, H. Tarbert, and Z. Yan used spatial-temporal characteristics of these innovations and the factors affecting the effectiveness of their implementation (Liu et al., 2021). A similar study was conducted by K.-L. Wang and F.-Q. Zhang (Wang, Zhang, 2021). The authors used a global measurement model based on Moran's spatial autocorrelation indices and a vector autoregression (VAR) model. Using the spatial econometric model, X. Yong Gang assessed the characteristics of convergence and variations of regional innovations, studied the influence of space-related factors on the convergence of regional innovations (Yong Gang, 2023). Using regression analysis methods and indices of regional spatial structure, innovation efficiency and innovation gap index, Z. Ye, C. Zou, and Y. Huang investigated the impact of various types of spatial structures on the introduction of scientific and technological innovations in 26 provinces and autonomous regions of China from 2005 to 2019 (Ye et al., 2022). K. Wu, Y. Wang, H. Zhang, Y. Liu, Y. Ye studied the spatial heterogeneity of regional innovation development in China's Pearl River Delta by combining negative binomial regression and Geodetector (Wu et al., 2021). To model the spatial heterogeneity of innovation development in 67 European countries M.A.M. Antunes used a quantile regression model with a discrete dependent variable (Antunes, 2016).

Regression analysis aimed at searching for factors influencing innovation development of productive forces in Russia's regions was used by O.S. Mariev, E.D. Ignatieva, E.P. Naberezhneva and I.V. Savin. The modified Cobb – Douglas "knowledge generation function" they constructed (Mariev et al., 2012) may well be used to design forecasting scenarios for the dynamics of regions' innovation development. L.V. Marabaeva, O.A. Sokolov, I.A. Gorin, and A.E. Kovalev formed forecasting scenarios for the development of territorial innovation clusters in Russia using ARIMA model (Marabaeva et al., 2020).

A theoretical review of the works that apply regression analysis showed a wide variety of tools used to model the factors promoting innovation development of territorial systems. At the same time, scientific literature does not contain sufficient results of modeling and forecasting the spatial features of innovation development and the spatial heterogeneity of the placement of innovation industries; only a small part of the models formed was used to build a system of forecasting scenarios for innovation development. Scenario modeling and forecasting spatial heterogeneity of innovation development of territorial systems is a complex and multi-stage process requiring the solution of several tasks: assessing spatial heterogeneity of development

[1] Kilina I.P. (2020). Innovation development of regions: Spatial approach: Candidate of Sciences (Economics) dissertation abstract. Chelyabinsk.

of innovation processes and clustering territories on this basis; assessing production factors for innovation products in different territorial systems using regression analysis; making multivariate forecasts of changes in the dynamics of factors influencing innovation development of territorial systems; building on their basis a system of forecast scenarios of innovation development of territories; assessing the forecast level of concentration of innovation industries in different groups of territorial systems. Accordingly, the solution of the tasks requires comprehensive use of various modeling and forecasting methods.

Methodological approach to scenario modeling and forecasting spatial heterogeneity of innovation development of a territory

At the stage of assessing the spatial heterogeneity of innovation development of territories and their clustering we propose to use statistical research methods. They will help to identify the following groups of regions by the volume of shipped innovation goods: regions with a high value exceeding the standard deviation from the average, regions with an indicator value close to the average level and slightly exceeding it, and regions with a volume of shipped goods below the average level. Assessing the concentration of shipped innovation goods in each region and by groups of regions will help to establish the presence of spatial heterogeneity of innovation development. To confirm this heterogeneity and carry out spatial clustering, it is assumed to use spatial autocorrelation analysis according to P. Moran's method with the generalization of the results for various spatial weight matrices between regions (by highways and linear distances, adjacent borders, by railway, as well as their normalized versions). The calculated global and local spatial autocorrelation indices in terms of the volume of innovation goods shipped will allow us to establish the formed and emerging growth poles, spatial clusters of regions similar in terms of innovation development, zones of their influence, as well as direct and inverse interterritorial relationships.

At the next stage of the study, regression modeling is supposed to be carried out within the selected groups of regions; the purpose of the modeling is to assess the degree of influence of the main factors of production (enterprises' innovation activities costs and the entire set of research personnel in the region) on the volume of innovation goods shipped in the regions. Since in this study we consider it important to assess the degree of influence of factors on the spatial heterogeneity of the dynamics of the volume of innovation goods shipped, we will use the classical Cobb – Douglas production function. In order to obtain more correct results in the conditions of spatial heterogeneity of data on innovation development of enterprises, it is assumed to form a quantile regression (1) assessing the degree of influence of these factors in three groups of regions:

$$Q_\tau(V_{it}|X_{it}) = \mathrm{A}(\tau) + \beta_1(\tau)L_{it} + \beta_2(\tau)C_{it} + \varepsilon_i, \quad (1)$$

where $Q_\tau(V_{it}|X_{it})$ – τ-th conditional quantile V_{it} of the given X_{it};

V_{it} – volume of shipped innovation goods in the region, million rubles;

X_{it} – factors L_{it}, C_{it};

L_{it} – number of personnel engaged in scientific research in the region, people;

$\beta_1(\tau)$ – coefficient of elasticity in terms of the number of personnel;

C_{it} – costs of innovation activities of organizations in the region, million rubles;

$\beta_2(\tau)$ – coefficient of elasticity in terms of innovation costs;

$\mathrm{A}(\tau)$ – technological coefficient, a combination of other factors;

ε_i – regression error.

The constructed models for the three quantiles will not only become the basis for scenario forecasting spatial heterogeneity of regions' innovation development, but will also allow us to establish emerging effects from the scale of production activities of innovation enterprises in different groups of regions, to assess the effectiveness of

their organization. To confirm the different degree of influence of these factors on the volume of shipped innovative goods in different groups of regions, it is planned to build Cobb – Douglas regression models for each region for the same period under consideration (2010–2020). To assess the contribution of the factors to the formation of spatial heterogeneity of innovation development, at the next stage, it is planned to conduct a spatial autocorrelation analysis of the features of their distribution according to P. Moran's method, during which growth poles, spatial clusters and zones of their influence will be determined by the financial resources attracted by enterprises for innovation and the number of research personnel.

In order to form forecast scenarios for changes in the volume of shipped innovative goods in three groups of regions, at the next stage of the study, it is planned to conduct an autoregressive analysis of the dynamics of changes in the enterprises' innovation activities costs and the number of research personnel in all regions of Russia for the period from 2010 to 2020 using a moving average (ARMA/ARIMA). This method will allow us to determine the most probable – inertial scenario of the dynamics of these factors until 2025, taking into account the preservation of the trends noted during the period under consideration, as well as to identify extremely possible (pessimistic and optimistic) scenarios for changing their dynamics in the future. The obtained forecast values of changes in the dynamics of these factors will be substituted into the equations of the quantile regression model of three groups of regions (1) to form inertial forecast scenarios and extremely possible forecast scenarios for the dynamics of the volume of shipped innovative goods. The regression models presented in this paper can also be used to form a whole system of various scenarios due to a combination of predictive values of the factors.

Thus, the methodological approach to the scenario forecasting of spatial heterogeneity of innovation development in Russia that is presented in the article is based on the system-wide use of various research methods: standard deviation methods and spatial autocorrelation analysis for clustering regions by volume of enterprises' innovation activity, regression modeling methods to assess the dependence of the volume of shipped innovative goods on the level of enterprises' innovation activities costs, and the number of research personnel in the regions, as well as the degree of influence of these factors in different groups of regions, methods of autoregressive analysis of the dynamics of their changes to form the most likely and extremely possible forecast scenarios of changes in the dynamics of these factors in the future, corresponding to scenarios of changes in the dynamics of innovative goods shipped by enterprises and their concentration in certain regions.

Research results

Considering the country's innovation development in the regional context, we can note the strong spatial heterogeneity of enterprises' innovation activity. Currently, 54% of all innovative goods shipped in Russia are concentrated in eight regions: Moscow, Saint Petersburg, the Republic of Tatarstan, Perm Krai, the Moscow, Nizhny Novgorod, Sverdlovsk, and Tyumen oblasts (*Tab. 1*).

A significant increase in the concentration of innovative goods was observed in the city of Moscow and in the Tyumen Oblast. The second group of regions with the volume of shipped innovative goods above the average in Russia according to 2020 included: the Belgorod, Samara, Omsk, Tula, Murmansk, Rostov and Chelyabinsk oblasts, the republics of Bashkortostan, Udmurtia and Mordovia, and Krasnoyarsk and Khabarovsk krais. In 2020, 26.8% of all innovative goods and services were shipped in 12 regions of this group. A significant increase in the concentration of innovative goods was observed in Krasnoyarsk and Khabarovsk krais, in the Omsk, Tula, Murmansk and Belgorod oblasts; and a decrease was observed in the Samara Oblast. The regions of the third group, with the volume of shipped innovative goods and services below the average in Russia, which

Table 1. Dynamics of the volume of shipped innovative goods and the level of their concentration in the regions of Russia in 2010 and 2020

Region		2010		2020	
		Million rub.	%	Million rub.	%
Major centers of innovation development	Moscow	64 543	5.1	626 603	12.0
	Republic of Tatarstan	161 216	12.8	528 840	10.2
	Saint Petersburg	84 474	6.7	448 025	8.6
	Moscow Oblast	90 231	7.2	380 965	7.3
	Nizhny Novgorod Oblast	76 468	6.1	276 160	5.3
	Perm Oblast	65 317	5.2	190 630	3.7
	Sverdlovsk Oblast	59 748	4.8	185 485	3.6
	Tyumen Oblast	2 789	0.2	175 458	3.4
Regions with the volume of shipped innovative goods above the Russian average	Belgorod Oblast	9 392	0.7	158 024	3.0
	Samara Oblast	96 237	7.7	157 163	3.0
	Republic of Bashkortostan	44 702	3.6	150 638	2.9
	Krasnoyarsk Krai	4 957	0.4	135 373	2.6
	Omsk Oblast	9 783	0.8	132 406	2.5
	Tula Oblast	8 396	0.7	131 270	2.5
	Murmansk Oblast	792	0.1	112 798	2.2
	Khabarovsk Krai	4 557	0.4	109 696	2.1
	Rostov Oblast	19 185	1.5	106 740	2.0
	Chelyabinsk Oblast	19 352	1.5	78 108	1.5
	Udmurt Republic	8 768	0.7	63 741	1.2
	Republic of Mordovia	20 996	1.7	61 536	1.2
Regions with the volume of shipped innovative goods below the Russian average		403 182	32.1	997 859	19.2
Source: Federal State Statistics Service.					

included 65 constituent entities of the Russian Federation, accounted for only 19.2% in 2020, while in 2010 – 32.1%. Thus, at present there is an increase in the spatial heterogeneity of innovation development, their significant concentration of innovative goods and services in the regions of the first and second groups. Spatial autocorrelation analysis according to P. Moran's methodology was also used to assess the degree of spatial heterogeneity of Russia's innovation development and clustering of regions in terms of the volume of goods shipped. Positive values of the global Moran index for all spatial weight matrices and Z-scores have shown that in Russia there are regions similar in terms of innovation development, which, with the active development of interregional relationships, can form spatial clusters. The results of spatial autocorrelation analysis, reflected in the Moran scatter plots for eight spatial weight matrices, were summarized and systematized in *Table 2*.

This analysis was also carried out in order to confirm the results of the performed grouping of regions by volume of innovative goods shipped. The spatial cluster of innovation development with a high level of spatial interaction is formed by the city of Moscow, the Moscow Oblast, and the Sverdlovsk Oblast. These regions have an extremely high volume of shipped innovative goods and are included in the first group of regions. The regions that are growth poles, according to the majority of spatial weight matrices, include Saint Petersburg, and the emerging poles of growth are Krasnoyarsk and Khabarovsk krais and the Rostov Oblast, which differ significantly from the surrounding regions in terms of the volume of goods shipped. The formed growth pole, according to the grouping presented in Table 1, also belongs to the first group of regions, and the emerging growth poles with a low level of spatial interaction belong to the second group of regions with the volume of goods shipped slightly

Table 2. Generalized P. Moran's scatter plot by volume of shipped innovative goods in Russia in 2020

***LH* – Influence zones**		***HH* – Spatial clusters**	
High level of mutual spatial influence	Low level of mutual spatial influence	High level of mutual spatial influence	Low level of mutual spatial influence
Kurgan, Ryazan, Vladimir, Tver, Kostroma, Kaluga, Ivanovo, Oryol, Smolensk, Tambov oblasts	Voronezh, Bryansk, Kursk, Lipetsk, Yaroslavl, Volgograd oblasts; Khanty-Mansi Autonomous Okrug, Yamalo-Nenets Autonomous Okrug	City of Moscow; Moscow and Sverdlovsk oblasts	Nizhny Novgorod, Samara, Murmansk, Omsk, Tyumen, Chelyabinsk, Belgorod, Tula oblasts; Perm Krai; republics of Bashkortostan, Mordovia, Tatarstan, and Udmurtia
LL		***HL* – Regions that are growth poles**	
Other regions of Russia		Saint Petersburg	Krasnoyarsk and Khabarovsk krais; Rostov Oblast
Source: own elaboration.			

above the national average. The emerging spatial clusters of similar regions, which do not have such a high level of spatial interaction as those already formed, were included in the first (the Republic of Tatarstan, Perm Krai, the Nizhny Novgorod and Tyumen oblasts) and the second (the republics of Bashkortostan, Mordovia, Udmurtia; the Murmansk, Belgorod, Tula, Samara, Omsk and Chelyabinsk oblasts) group of regions. The zone of influence of spatial clusters included mainly regions of the Central and Ural federal districts (see Tab. 2). Most of the regions of the Far Eastern, Siberian, Northwestern, North Caucasian and Southern federal districts have not become growth poles or spatial clusters and have not entered the zone of their influence. These regions form the third group of territories with the volume of shipped innovative goods below the Russian average. The presence of 65 constituent entities of the Russian Federation in this group indicates an extremely high spatial heterogeneity of Russia's innovation development.

The Cobb – Douglas quantile regression model was used to forecast the dynamics of change in the heterogeneity and assess the degree of influence of production factors. Panel data on 85 Russia's constituent entities for the period from 2010 to 2020 (935 observations) were used to form the model. Before its construction, the descriptive statistics of variables were analyzed and the stationarity of time series was estimated using the augmented Dickey – Fuller test (ADF test). According to the results of the analysis of the calculated descriptive statistics, a high level of data variation was established, which confirms the spatial heterogeneity of the regions' innovation development. To obtain more reliable estimates, the data were reduced to a comparable form by extracting the natural logarithm. The results of the constructed model for three groups of regions are presented in *Table 3*.

Regression coefficients for all quantiles of this model were tested using the Wald test, the normality of the error distribution was checked using the Jarque – Bera test, and the stability of the model parameters was tested using the Ramsey technique. Regression coefficients in this model are statistically significant with the exception of the third quantile for the "number of personnel engaged in scientific research" variable. The constructed quantile regression model shows that in the group of regions with a high volume of shipped innovative goods, the main factor is enterprises' innovation activities costs. The personnel scientific potential formed in the second group of regions according to the results of modeling is a secondary factor that does not have a significant impact on innovation development in these regions. This factor influenced the innovation development of the regions of the second group, which differ in the volume of shipped innovative goods above the Russian average. According to this model, an increase in the number of research personnel in the regions included in the second quantile by 1% contributes to an increase in the volume of innovative goods sold by 0.16%. In this group of regions, there was also a more significant impact on innovation

Table 3. Parameters of the quantile regression model of the dependence of the volume of shipped innovative goods (V) on the volume of enterprises' innovation activities costs (C) and the number of personnel engaged in research and development in Russia's constituent entities

First quantile of regions with a low volume of shipped innovative goods (tau = 0.25)				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
Const	**-0.906**	0.215	-4.221	0.000***
C	**0.939**	0.031	31.113	0.000***
L	**0.214**	0.042	5.109	0.000***
Pseudo R-squared	0.563	Mean dependent var		8.584
Adjusted R-squared	0.562	S.D. dependent var		2.877
S.E. of regression	1.581	Objective		407.719
Quantile dependent var	7.206	Restr. objective		933.203
Sparsity	3.591	Quasi-LR statistic		1560.783
Prob(Quasi-LR stat)	0,000			
Second quantile of regions with an median volume of shipped innovative goods (*tau* = 0.5)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Const	**0.735**	0.193	3,803	0.0002***
C	**0.875**	0.027	32,146	0.0000***
L	**0.164**	0.038	4,346	0.0000***
Pseudo R-squared	0.524	Mean dependent var		8.584
Adjusted R-squared	0.522	S.D. dependent var		2.877
S.E. of regression	1.440	Objective		466.497
Quantile dependent var	9.223	Restr. objective		979.038
Sparsity	2.801	Quasi-LR statistic		1463.66
Prob(Quasi-LR stat)	0.000			
Third quantile of regions with a high volume of shipped innovative goods (tau = 0.75)				
Const	**2.541**	0.174	14.601	0.000***
C	**0.854**	0.025	34.832	0.000***
L	**0.046**	0.034	1.342	0.181
Pseudo R-squared	0.498	Mean dependent var		8.584
Adjusted R-squared	0.497	S.D. dependent var		2.877
S.E. of regression	1.718	Objective		347.461
Quantile dependent var	10.381	Restr. objective		691.797
Sparsity	2.913	Quasi-LR statistic		1260.886
Prob(Quasi-LR stat)	0.000			
Source: own compilation.				

activity carried out by enterprises compared to the regions of the first group. The degree of significance of these two factors was the highest in the third group of regions. The elasticity coefficients for production factors in this group of regions were significantly higher than in the first and second groups. These regions are characterized by less developed human scientific potential and a smaller volume of costs attracted by enterprises for the implementation of innovation activities. Therefore, their importance for innovation development in this group of regions is much higher. The Cobb – Douglas production function made it possible to establish the effectiveness of innovation activities carried out by enterprises in different groups of regions: an increasing return on the scale of innovation activity in the regions of the first and second groups, in which the sum of elasticity coefficients exceeded one, and a decreasing return in the third group of regions. The low efficiency of the innovation activity carried out in the regions of the third group is associated with a low concentration of research personnel and the costs incurred by enterprises for the production of innovative goods, services and works. The models

constructed by time series for the period from 2010 to 2020 for each constituent entity of the Russian Federation allowed us to confirm the differentiated influence of production factors on the volume of shipped innovative goods in Russia's constituent entities (*Tab. 4*).

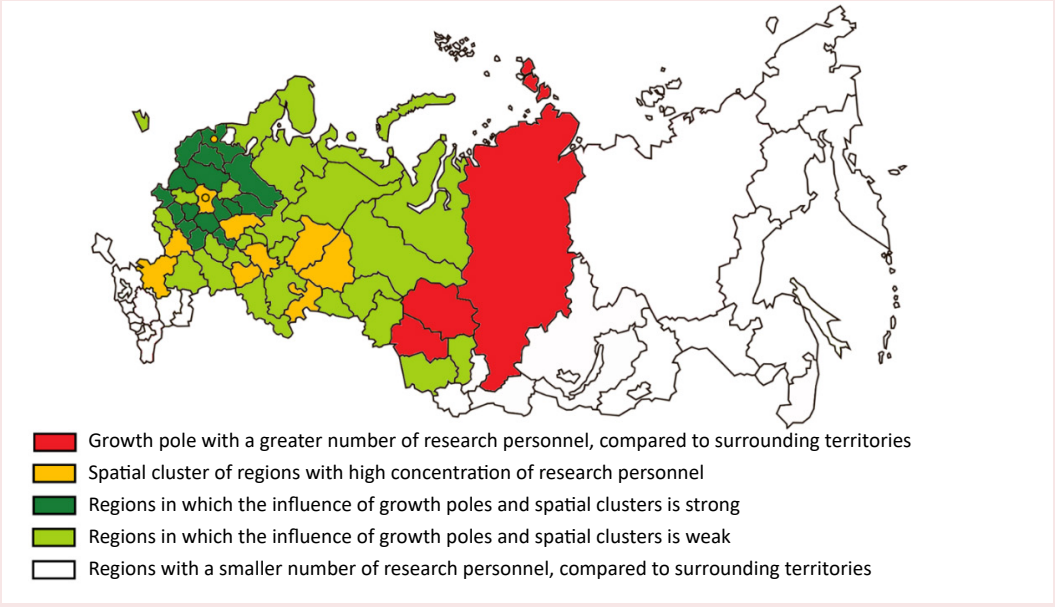
Table 4. Results of regression analysis of the dependence of the volume of shipped innovative goods on the enterprises' innovation activities costs and the number of research personnel in Russia's regions

		Region	Volume of innovation activities costs	Number of research personnel
Regions of the first group – innovation development centers		Moscow	0.688**	0.367*
		Saint Petersburg	0.905**	0.205**
		Sverdlovsk Oblast	1.105***	-
		Tyumen Oblast	1.212***	-
		Perm Oblast	0.566*	0.654*
		Nizhny Novgorod Oblast	0.465***	0.659***
		Moscow Oblast	0.521***	0.576***
		Republic of Tatarstan	0.591***	0.659***
Regions with the volume of shipped innovative goods	above the Russian average	Belgorod Oblast	0.649***	0.684***
		Samara Oblast	0.523***	0.702***
		Republic of Mordovia	0.195*	1.304***
		Chelyabinsk Oblast	-	1.14***
		Omsk Oblast	-	1.189***
		Tula Oblast	0.721**	0.482*
		Rostov Oblast	0.748***	0.384***
		Republic of Bashkortostan	0.849***	0.339**
		Udmurt Republic	1.209***	-
		Krasnoyarsk Krai	1.006***	-
		Murmansk Oblast	1.083***	-
		Khabarovsk Krai	1.120***	-
	below the Russian average	Ulyanovsk Oblast	0.527***	0.689***
		Stavropol Krai	0.411***	0.869***
		Kemerovo Oblast	0.027*	1.273***
		Tver Oblast	0.188*	0.965***
		Kursk Oblast	0.085*	1.136***
		Novosibirsk Oblast	0.329*	0.744***
		Chuvash Republic	0.481*	0.804**
		Altai Krai	0.314*	0.84***
		Kostroma Oblast	0.576*	0.991*
		Oryol Oblast	0.195*	0.948*
		Saratov Oblast	0.268*	0.828***
		Komi Republic	0.131*	1.131***
		Yaroslavl Oblast	-	1.181***
		Volgograd Oblast	-	1.193***
		Ryazan Oblast	-	1.185***
		Vologda Oblast	-	1.607***
		Leningrad Oblast	-	1.101***
		HMAO Knanty-Mansi Autonomous Okrug	-	1.311***
		Zabaikalsky Krai	-	1.372***
		Sakhalin Oblast	-	1.421***
		Novgorod Oblast	-	1.185***

Note: * – statistical significance at the level of 10%, ** – statistical significance at the level of 5%, *** – statistical significance at the level of 1%.
Source: own compilation.

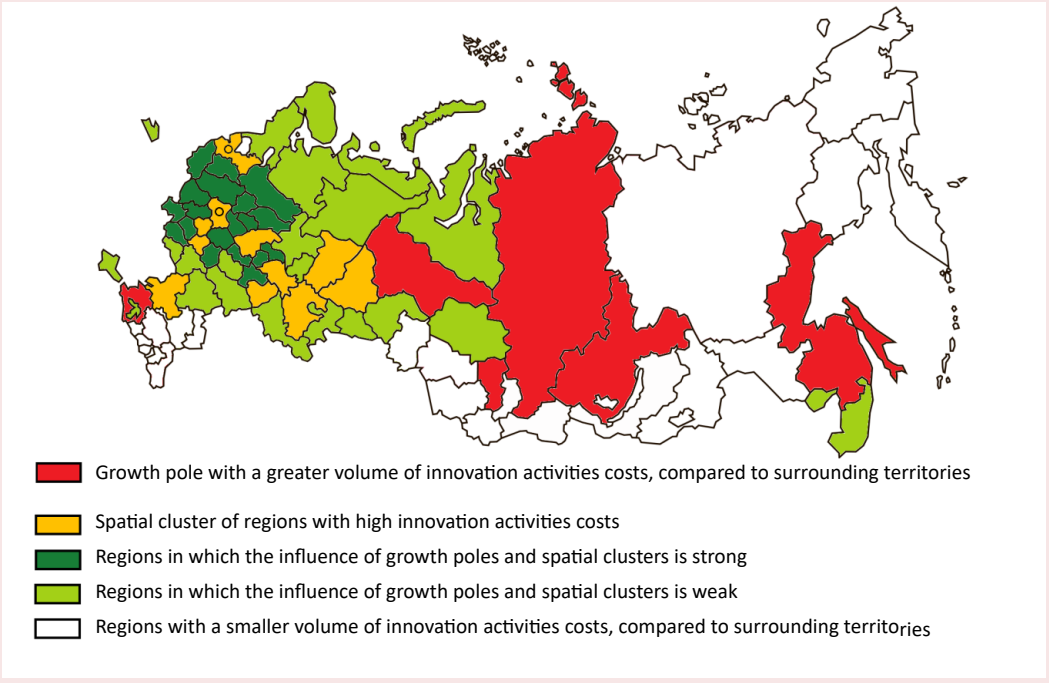
To confirm the high importance of these factors in the formation and deepening of the spatial heterogeneity of innovation development in Russia, a spatial autocorrelation analysis of the distribution of these factors was carried out according to P. Moran's method (*Fig. 1, 2*).

Figure 1. Spatial clustering of regions by number of research personnel in 2020



Source: own elaboration.

Figure 2. Spatial clustering of regions by volume of enterprises' innovation activities costs in 2020



Source: own elaboration.

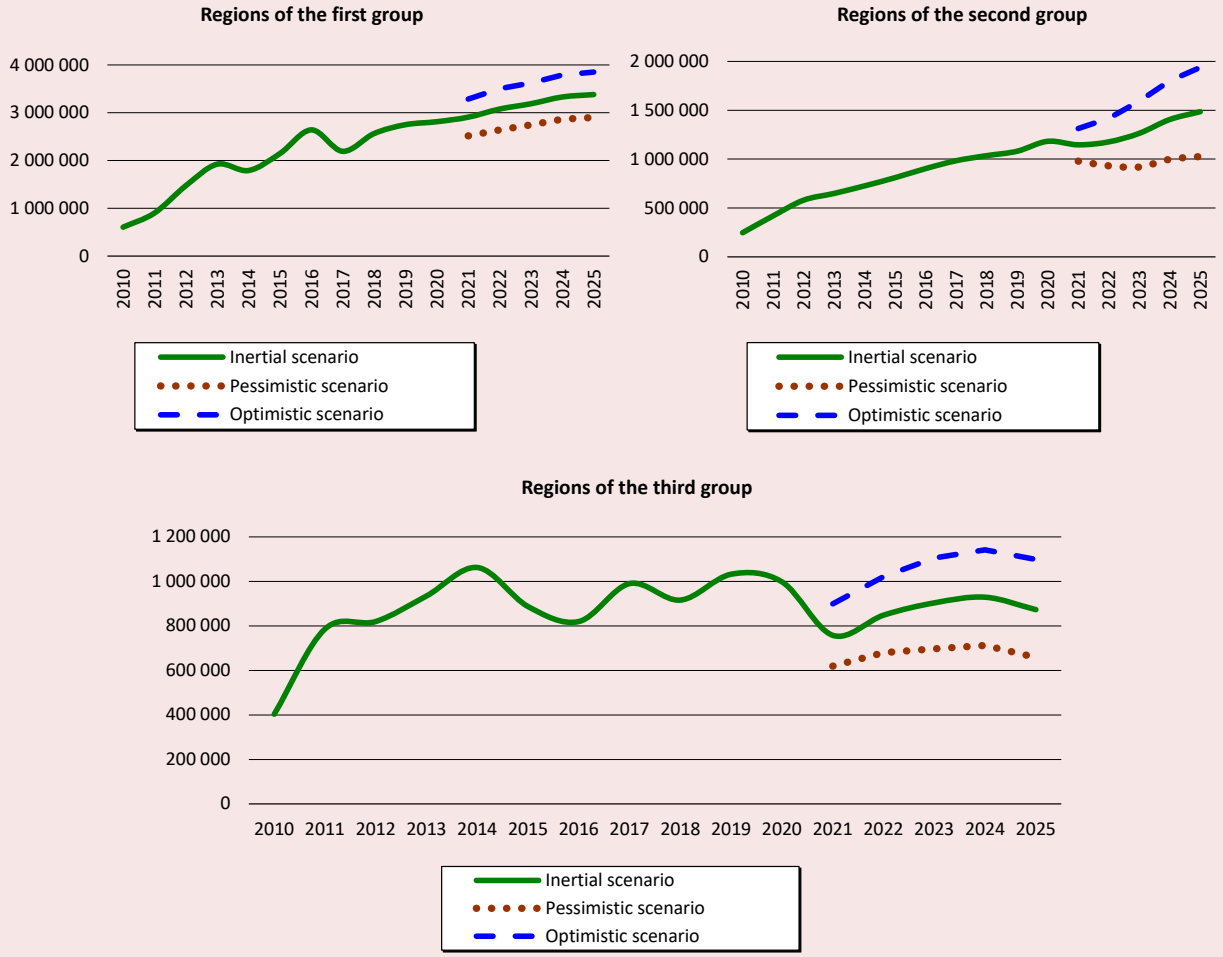
As a result of the analysis, we identified growth poles with a high concentration of research personnel (the Tomsk and Novosibirsk oblasts, Krasnoyarsk Krai), clusters of similar regions were formed in terms of the number of research personnel: "Central" (Moscow, the Moscow and Nizhny Novgorod oblasts), "Southern" (the Voronezh and Rostov oblasts), "Privolzhsky" (the Samara Oblast, Perm Krai, and the Republic of Tatarstan), "Uralsky" (the Sverdlovsk and Chelyabinsk oblasts), as well as the zones of their influence extending to the regions of the Central and Northwestern federal districts (see Fig. 1). Spatial autocorrelation analysis has shown that regions with a high concentration of research personnel (growth poles and spatial clusters) form the first and second groups of regions with a high volume of shipped innovative goods.

The established spatial clusters and their zones of strong influence in terms of the number of research personnel (see Fig. 1) and in terms of the volume of innovative goods shipped (see Tab. 1) almost completely coincided. The quadrants of LL regions with low values of these indicators also coincided. This quadrant includes regions of the North Caucasian, Siberian and Far Eastern federal districts, that is, regions with a low concentration of research personnel and a low level of innovation activity of enterprises. A very similar clustering of regions was established as a result of spatial autocorrelation analysis and in terms of the volume of enterprises' innovation activities costs (see Fig. 2). Most of the identified spatial clusters and zones of their influence for this indicator coincided with similar quadrants of P. Moran's scatter plot in terms of the number of research personnel (see Fig. 1). The results of the spatial autocorrelation analysis in terms of enterprises' innovation activities costs are very similar to the results of the analysis in terms of the volume of shipped innovative goods, works and services, which confirms our hypothesis about the significant influence of this factor on the deepening of the spatial heterogeneity of innovation development in Russia. A significant part of the financial resources allocated to the implementation of innovation activities are concentrated in the regions included in the Central, Northwestern, Volga and Ural federal districts.

ARMA and ARIMA modeling of the dynamics of the considered production factors was used to construct forecast scenarios for innovation development in Russia's regions. As a result, the forecast values of their dynamics up to 2025 were determined according to three possible trajectories: taking into account the preservation of the noted trends in the dynamics of indicators for the period from 2010 to 2020, as well as the maximum permissible forecast values in case of the implementation of positive or negative trends. The forecast values of these factors were used to design three basic forecast scenarios for changes in the dynamics of the volume of shipped innovative goods in Russia's regions – inertial, optimistic and pessimistic (*Fig. 3*).

An inertial scenario, assuming the continuation of the noted trends in the dynamics of shipped innovative goods, works and services for 2010–2020, predicts further moderate growth of this indicator in the first and second groups of regions and the preservation of the achieved values without a directional trend in the regions of the third group. According to an optimistic forecast scenario, a moderate increase in the volume of shipped innovative goods is possible in the first and third groups and a more significant increase in this indicator in the second group of regions. The growth of innovation development in the regions of the third group, in our opinion, is constrained by the insufficiently high level of concentration of research personnel and financial resources of enterprises directed to innovation activities in comparison with the regions of other groups. Perhaps that is why in the regions of this group, the growth of enterprises' innovation activity is not expected while maintaining the noted trends in the future, that is, when implementing an inertial scenario.

Figure 3. Forecast scenarios for the dynamics of the volume of shipped innovative goods in three groups of regions until 2025, million rubles

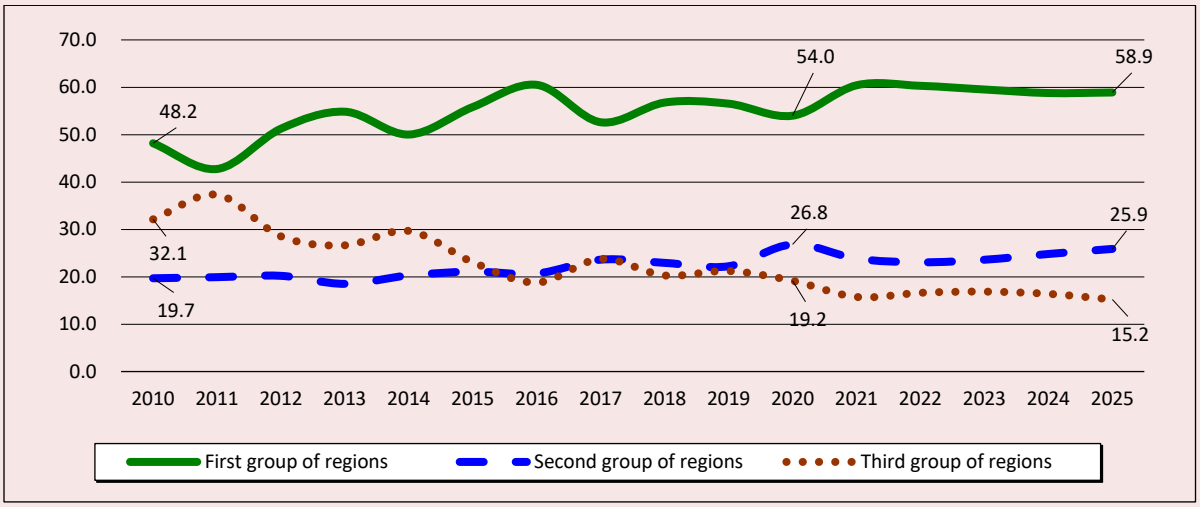


Source: own elaboration.

In our opinion, the rapid growth in the dynamics of the volume of shipped innovative goods in the second group of regions, expected under an optimistic scenario, is due to the fact that these regions belong to the emerging spatial innovation clusters (see Tab. 1), having a high level of concentration of research personnel and financial resources of enterprises, close interregional relationships with research centers. At the same time, due to the significant deterioration of the geopolitical situation and sanctions pressure on the Russian economy, it is quite possible that a pessimistic scenario will be implemented, which involves a reduction in the volume of shipped innovative goods in all groups of regions (see Fig. 3).

An assessment of the dynamics of changes in the level of concentration of shipped innovative goods in three groups of regions during 2010–2020 and its forecast values within the most likely, inertial scenario showed a deepening of the processes of increasing spatial heterogeneity of innovation development in Russia (*Fig. 4*). In 2010 48.2% of all innovative goods shipped in Russia were concentrated in the first group of regions, while by 2020 the concentration level has increased to 54%.

Figure 4. Inertial forecast of changes in the concentration of innovation industries in three groups of regions until 2025, %



Source: own elaboration.

By 2025, it is possible for this indicator to grow to 58.9%. It is likely that the high level of concentration of innovation industries will also remain in the second group of regions, which was achieved by 2020 for the period from 2010 to 2020. The concentration level of shipped innovative goods in this group of regions has increased from 19.7 to 26.8%. By 2025, according to an inertia scenario, the concentration level of all shipped innovative goods in Russia is expected to reach 25.9% in the regions of this group. A significant deepening of spatial heterogeneity is also evidenced by the forecast reduction in the concentration of shipped innovative goods in the regions of the third group, which includes 65 constituent entities of Russia. If in 2010 the level of concentration of all goods shipped in Russia in this group of regions was 32.1%, then by 2020 it has decreased to 19.2%, and by 2025 the decline is expected to continue up to 15.2%. This means the curtailment of innovation industries in a significant part of the regions. Thus, according to the most likely forecast scenario, by 2025, an even more significant increase in the spatial heterogeneity of innovation development in regions is expected, and the main factors contributing to this process, according to our study, are the financial resources attracted by enterprises directed to the implementation of innovation activities, as well as the number of personnel in the region engaged in scientific research and development.

Conclusion

The study has confirmed the hypothesis that the increasing spatial heterogeneity of localization and concentration of research personnel and the costs of enterprises for the implementation of innovation activities enhance the spatial heterogeneity of innovation development in Russia. The study has revealed a strong spatial heterogeneity of Russia's innovation development in the regional context, there is a significant concentration of volumes of shipped innovative goods and services in the regions of the first and second groups. Thus, 54% of all innovative goods shipped in Russia are concentrated in eight regions: the cities of Moscow and Saint Petersburg, the Republic of Tatarstan, the Moscow, Nizhny Novgorod, Sverdlovsk and Tyumen oblasts, and Perm Krai. In the second group of regions with

the volume of shipped innovative goods above the Russian average, which included the Belgorod, Samara, Omsk, Tula, Murmansk, Rostov, and Chelyabinsk oblasts, the republics of Bashkortostan, Udmurtia and Mordovia, and Krasnoyarsk and Khabarovsk krais, according to 2020, 26.8% of all Russian innovative goods and services were shipped. The regions of the third group, with the volume of shipped innovative goods and services below the Russian average, which included 65 Russia's constituent entities, accounted for only 19.2% in 2020.

The paper presents an original methodological toolkit based on the methods of standard deviations and spatial autocorrelation analysis using P. Moran's method, regression modeling, autoregressive analysis using a moving average (ARMA, ARIMA). As a result of the study, clustering of regions was carried out by the volume of innovation activities carried out by enterprises, the dependence of the volume of shipped innovative goods on the level of enterprises' innovation activities costs and the number of research personnel in the regions, as well as the degree of influence of these factors in different groups of regions, the most probable and extremely possible forecast scenarios of changes in the dynamics of these factors were formed in the future, corresponding scenarios of changes in the dynamics of innovative goods shipped by enterprises and their concentration in certain regions. The calculation of the concentration level in the regions of all innovative goods shipped in Russia according to the values forecast until 2025 will allow us to establish further directions of spatial localization of innovation industries, trends of decreasing or increasing spatial heterogeneity of innovation development of regions. The constructed forecast scenarios can be used to form strategies for innovation development in Russia's regions, taking into account the identified features of the spatial localization of factors that have a significant impact on it.

References

Antunes M.A.M. (2016). *Regional innovation heterogeneity in Europe: A Quantile Regression Analysis*. Final Work in the form of Dissertation, Católica Porto Business School, 42.

Blanco F.A., Delgado F.J., Presno M.J. (2020). R&D expenditure in the EU: Convergence or divergence? *Economic Research-Ekonomska Istraživanja*, 33(1), 1685–1710. DOI: 10.1080/1331677X.2020.1756371

Degtyarev P.A. (2020). Influence of socio-economic factors on innovative development of regions and implementation of technological initiatives. *Finansovye issledovaniya*, 1(66), 71–77 (in Russian).

Donichev O.A., Fraimovich D.Yu., Grachev S.A. (2018). Regional system of economic and social factors in the formation of innovation development resources. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 11(3), 84–99 (in Russian).

Dugarzhapova M.A., Zhalsaraeva E.A. (2020). Models and mechanisms of spatial development: Innovation aspect. *Vestnik Altaiskoi akademii ekonomiki i prava*, 8, 175–185 (in Russian).

Filatov V.V. (2014). Forecasting of development of the market of innovations sectoral economic systems in conditions of uncertainty of the environment. *Nauchnyi zhurnal NIU ITMO. Seriya "Ekonomika i ekologicheskii menedzhment"=Scientific Journal NRU ITMO. Series "Economics and Environmental Management"*, 3, 576–584 (in Russian).

Golova I.M., Sukhovey A.F. (2017). Development of innovative component for the region's economic security. *Ekonomika regiona*,13(4), 1251–1263 (in Russian).

Granberg A.G., Valentey S.D. et al. (2006). *Dvizhenie regionov Rossii k innovatsionnoi ekonomike* [Movement of Russian Regions Toward an Innovation Economy]. Moscow: Nauka.

Gusarova M.S. (2021). Problems of innovative development in Russia: Factor analysis and institutional solutions. *Voprosy innovatsionnoi ekonomiki=Russian Journal of Innovation Economics*, 11(4), 1383–1402. DOI: 10.18334/vinec.11.4.113870 (in Russian).

Kisurkin A.A. (2012). Factors influencing innovation development in the region and their classification by management levels. *Sovremennye problemy nauki i obrazovaniya*, 2. Available at: https://science-education.ru/ru/article/view?id=5762 (accessed: January 17, 2023; in Russian).

Komkov N.I. (2017). Scientific and technological development: Limitations and opportunities. *Problemy prognozirovaniya=Studies on Russian Economic Development*, 5, 11–21 (in Russian).

Krivchanskaya A.V. (2017). Features of the innovation market. *Ekonomika i menedzhment innovatsionnykh tekhnologii=Economics and Innovations Management*, 11. Available at: https://ekonomika.snauka.ru/2017/11/15430 (accessed: December 15, 2022; in Russian).

Liu P., Zhang L., Tarbert H., Yan Z. (2021). Analysis on spatio-temporal characteristics and influencing factors of industrial green innovation efficiency – from the perspective of innovation value chain. *Sustainability*, 14(1), 342. DOI: 10.3390/su14010342

Marabaeva L.V., Sokolov O.A., Gorin I.A., Kovalev A.E. (2020). Scenario forecast of the Russian territorial innovative clusters development based on the project approach. *Innovatsii*, 1, 86–93 (In Russian).

Mariev O.S., Ignat'eva E.D., Naberezhneva E.P., Savin I.V. (2012). Econometric modeling of regional factors of production forces innovational development in the resources-dependent Russian economy. *Vestnik UrFU. Seriya "Ekonomika i upravlenie"*, 5, 133–145 (in Russian).

Mikhailov A.S., Gorochnaya V.V., Khvalei D.V., Gumenyuk I.S. (2020). Innovative development of Russian coastal regions: North-south divergence. *Baltiiskii region=Baltic Region*, 12(3), 105–126. DOI: 10.5922/2079-8555-2020-3-7 (in Russian).

Mityakov S.N., Mityakova O.I., Murashova N.A. (2017). Innovative development of the regions of Russia: Results of monitoring (on the example of the Privolzhsk federal district). *Innovatsii*, 8(226), 114–119 (in Russian).

Moskvina O.S. (2019). Measuring the spatial polarization of development of innovative processes in Russia. *Kreativnaya ekonomika=Creative Economy*, 13(4), 685–692. DOI: 10.18334/ce.13.4.40602 (in Russian).

Moskvina O.S., Makoveev V.N. (2019). Statistical analysis of spatial unevenness of Russian regions' innovative development. *Problems of Territory's Development*, 5(103), 124–137. DOI: 10.15838/ptd.2019.5.103.8 (in Russian).

Myachin A.L. (2020). Innovation development: Review and estimation of heterogeneity. In: *Proceedings of the 20th International Conference on Group Decision and Negotiation*. Ryerson University, 22.1-22.10. Available at: https://publications.hse.ru/en/chapters/369954183

Naumov I.V., Barybina A.Z. (2020). The spatial autoregression model of innovative development of Russian regions. *Vestnik Tomskogo gosudarstvennogo universiteta. Ekonomika= Tomsk State University Journal of Economics*, 52, 215–232. DOI: 10.17223/19988648/52/13 (in Russian).

Nikitskaya E.F. (2020). Spatial irregularity in innovative development of macro-regions and regions of Russia. *Federalizm=Federalism*, 25(4)(100), 68–89. DOI: 10.21686/2073-1051-2020-4-68-89 (in Russian).

Polina E.A., Solovyeva I.A. (2019). Methodology for comprehensive assessment of regional innovative development. *R-Economy*, 5(2), 79–91. DOI: 10.15826/recon.2019.5.2.009

Smirnova O.P., Ponomareva A.O. (2020). Assessment of innovative development differentiation of Russian regions. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 11(13), 11A13P. DOI: 10.14456/ITJEMAST.2020.262/. Available at: http://TUENGR.COM/V11A/11A13P.pdf

Wang K.-L., Zhang F.-Q. (2021). Investigating the spatial heterogeneity and correlation network of green innovation efficiency in China. *Sustainability*, 13(3), 1104. DOI: 10.3390/su13031104

Wu K., Wang Y., Zhang H., Liu Y, Ye Y. (2021). Impact of the built environment on the spatial heterogeneity of regional innovation productivity: Evidence from the Pearl River Delta, China. *Chin. Geogr. Sci.*, 31, 413–428. DOI: 10.1007/s11769-021-1198-4

Ye Z., Zou C., Huang Y. (2022). Impact of heterogeneous spatial structure on regional innovation – from the perspectives of efficiency and gap. *Sustainability*, 14, 12095. DOI: 10.3390/su141912095

Yong Gang X. (2023). Research on spatial heterogeneity of regional innovation convergence. *ECIT 2022*, AHE 11, 419–426. DOI: 10.2991/978-94-6463-005-3_41

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Digitalization and the Development of a "Smart" Society: The Logic and Practice of Management

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Abstract. The rapid spread of new technologies in all areas of activity leads to quick and profound changes in the structure of industrial production, global markets, and the economic and social sphere. The potential of information and communication technologies, accumulated by the 21st century, causes significant changes in the functioning of economic systems at different levels, from the global economy

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to individual economic entities; informatization and digitalization are the most important factors of economic growth. Under their influence, there is a transition from the introduction of individual digital technologies to the complex construction of a digital ecosystem. The rapid development of digital technologies has led to a model of society in which the real world and virtual space interact, a value orientation that combines big data algorithms with small data mining is emerging, a scenario spanning two opposing modes of decentralization and centralization is constructing, and different governance logics are emerging in which rule management and code-based regulation complement each other. This logic of governance has been put into practice in the process of social construction, creating an open and secure digital ecosystem, a collaborative multi-managerial circle and an inclusive dividend distribution circle, enriching the connotation of "co-building, co-managing and sharing", thereby laying the scientific and technical foundation for modernizing the national governance system and management capacity. The aim of our work is to comprehend the concept, the essence of the term "smart society" in its relationship with the phenomenon of the economy digitalization and studying the practice of management of development of such a society. The scientific novelty and originality of the research is reflected in the development of theoretical and methodological approaches and conceptual apparatus of studying the essence of "smart society" in the context of the economy digitalization; in the development of scientific and methodological foundations of a comprehensive assessment of the state, development trends of "smart" society in the Russian Federation and China; in the formation of a set of practical measures and a list of indicators characterizing the development of "smart" society.

Key words: digitalization, "smart" society, logic and practice of management, sharing, Russia, China.

Introduction

In the era of economic globalization, the digital economy has become a major driver of economic development, not only in promoting faster growth of gross domestic product (GDP), but also in productivity gain, helping to transform consumption patterns, optimizing investment patterns, increasing the scale of enterprise exports, improving the quality of human capital, and developing new "smart" cities.

The transition from the introduction of digital technologies to the complex construction of an international digital ecosystem requires new approaches and changes. This trend reflects the need for effective cross-border interaction between all participants in the digitalization process: public authorities, business, educational institutions, industrial enterprises, and financial structures.

Industry 4.0 is not just a change of a new way of life, not just the digitalization of companies' communications with each other and with the authorities, not just the automation of work processes and the replacement of human resources with software. It is a change in the principles of government activity and business building, transformation of mentality and consciousness.

The deepening informatization, modern media and current environment have made traditional society "intelligent", leading humankind to the "smart" society. The information revolution brought about by the rapid development of digital technology has profoundly shaped every aspect of this society, transforming and reforming how people's way of living and thinking, interaction, as well as social order. The popularization of the industrial Internet and the Internet of Things, together with the promotion of the projects such as "Smart" City and "Smart" Transportation have gradually shown a specific digital logic for social

governance, which diversify the concept of co-construction, co-governance and sharing. The increasingly mature concept of social governance has built the scientific and technological base for the modernization of the national governance system and governance capacity.

Materials and research methods

The study is based on the application of an interdisciplinary approach, which involves the use of a single methodological framework to summarize the research results of scientific, technological, industrial, socio-economic, institutional, managerial, political, legal and other areas of complex analysis of the key development factors promoting digital economic transformation and the development of "smart" society.

The information base of the study includes the works of Russian and foreign economists in the field of research and technological and innovation development, public administration; scientists working on the digitalization of the economy, the problems of formation and implementation of the digital transformation of the economy in their relationship with socio-economic development problem.

The research uses the following scientific methods: analytical review of theoretical information; analysis and processing of statistical information; review of the regulatory framework in the regulation of the digital economy; generalization and presentation of the research results in graphical form.

Theoretical aspects of the study

Digital economy and "smart" society

The term "digital economy" was first introduced by American businessman Tapscott Don (1996), who was recognized as the "father of the world digital economy". He detailed the impact of the Internet on the economy and indicated that the development of e-commerce would determine the future trend of the digital economy, but he did not conduct in-depth quantitative research on the digital economy. The digital economy is an important driver of fairer and more efficient digital transformation (Zuo, Chen, 2021).

S.A. Belozyorov believes that the spread and improvement of digital technologies affect the development of industrial relations, economic structures and education, and determine new requirements for communications, computing power, information systems, and services (Belozyorov et al., 2020). Yu.N. Guzov thinks that the biggest innovations in the digital economy are the emergence of artificial intelligence and robotics, cryptocurrencies, "smart" factories, "smart" cities, "smart" things, blockchain technology, etc. (Guzov, 2021). I.A. Strelkova states that in modern business world the digital economy is understood as a fast-growing economic sector, which completely changes the usual business relationships and existing business models (Strelkova, 2018).

Huang Jie points out that the digital economy is a new economic form in which data resources are the key element, modern information networks are the main carrier, the convergence of information and communication technology apps and the digital transformation of all factors are important driving forces (Jie, Ying, 2022).

In modern conditions, economic development is undergoing significant qualitative changes, which are associated with its transition from the level of industrial development to the new post-industrial level, which is characterized by an increased degree of intellectualization of all activity types and informatization of all technological processes.

Informatization and digitalization taking place in economic processes are becoming comprehensive trends covering not only the information and communication industry itself, but also all economic activity areas. Internet commerce, digital manufacturing, "smart" grid systems, unmanned vehicles, personalized healthcare, each of these

areas is feeling the impact of the digital revolution gaining momentum. As a result, it is reflected in changing structure of cross-border resource flows. Since 2005, annual international information flows have increased by almost 70% (Bublik et al., 2018). At the same time, migration flows increased by only 20%, and capital and goods – about 5–7%.

The technological revolution of the late 20th century has led to the transition from a "material" to "information" society based on the transformation of information into a priority production factor, which is expressed in such socio-economic transformations as the change in the GDP structure, emergence of new professions, the development of information and communication infrastructure of society, economic globalization and digitalization, convergence of services and technologies, networks and information transmission and processing systems (Kuzovkova et al., 2017).

In the context of the implementation in production, the theoretical basis for developing the information technology was formed within the framework of several theoretical views. They are based on the theories of information society; post-industrial society (Bell, 2001); economic theory of new industrialization; the theory of new industrial society (Galbraith, 2004), etc.

The information society as a concept began forming due to the development of the post-industrial doctrine, which gave information and knowledge the main role in developing production and society.

At the same time, the scientific community has not reached a consensus on the methodological approaches to the definition of the post-industrial society economy, there is no single generally accepted term.

In the literature, the terms "knowledge economy", "information economy" and "smart society" are used to define modern processes in the economy along the lines of the information society.

In our opinion, "smart" society is a society in which the efficiency of socio-economic development depends on the production, processing, storage and transmission of information. Thus, "smart" society should be understood as a qualitative improvement in the socio-economic state of society through modern information and communication technologies. The emergence and development of "smart" society would not be feasible without an adequate technological base that makes it possible to spread codified knowledge beyond spatial constraints with minimal time and labor.

Changes to the shape of "smart" society

Along with the accelerated advancement of digital technology, various data aggregation has set the stage for the revolution of production factors, and the innovation of various new business models has become the "engine" for rebuilding social order. The new societal form has broken through the tangible barriers of physical space, where people gradually transcend the physical structured space and explore the unstructured space of digital form. The iteration of information technology has pushed users in the digital environment closer to each other, so that even if they are separated from each other in the offline physical space, people can still "meet online" and feel each other and go through experiences together. The intermingling of time and space is ultimately a set of paths through which social support, resources and connections can be exchanged and developed (Changshan, 2020).

(1) Digital space dilutes the presence of physical space

On the one hand, digital space reshapes behavioral patterns. In the "smart" society, the flattening or horizontalization of the organizational structure in the workplace tends to transform labor into creativity expression, and the mechanical model in the traditional factory or company is gradually being replaced by a resilient, interactive and open model (Kapur, 2014).

The frequent attention to the digital landscape has solidified some of the constant attention as a behavioral norm. While the depth of individual attention is shallowing, its breadth is growing. People are increasingly fostering the ability to freely switch between scenes in the process of adapting to digital space.

On the other hand, digital space changes social relations. The virtual space enabled by information technology no longer applies to traditional geographical rules, but to a whole new realm. People are able to reap the benefits of a virtual "third space" outside the home and workplace, where they can spend time in the company of others.

In this layer of space, people get to participate in a voluntarily chosen, non-coercive form. The low level of obligation allows them to feel their presence and the existence of the dialogue in large-scale conversations, even if they are just slightly involved. Such a mode of feeling interpersonal relationships enables individuals to feel that they are being integrated into a society where their life is important and valued (Chayko, 2019).

For individuals, excessive participation may lead to an unhealthy escape from offline responsibilities, but the existence and expansion of the "third space" is a positive presence for society as a whole, as it continues reshaping social relations.

(2) The demand for expansion of the scope of digital space gives rise to more practical exploration of physical space

First, in the digital space, the zero distance of information constantly strengthens the coverage and influence of communication media. By December 2022, the number of online video users (including short videos) in China had reached 1.031 billion, an increase of 55.86 million over December 2021, accounting for 96.5% of the total netizens. Among them, the number of short video users was 1.012 billion, an increase of 77.7 million compared with December 2021, accounting for 94.8% of the total netizens[1].

Meanwhile, audiences are immersed in their own information cocoons and gradually lose their initiative to leave their comfort zone. In contrast to the growing number of media platforms provided by digital channels, audiences' search for information has become increasingly homogeneous and limited, followed by the manipulation of public opinion and the reinforcement of the echo chamber effect, which constantly weakens the judgment of audiences.

Moreover, most social communities that do not follow the "winner-takes-all" model have one thing in common: they are often parasitic on pre-existing, real-world social networks, so that the expanding influence in digital space produces more practical experiences in physical space (Hindmann, 2016).

(3) Physical space and digital space are co-constructed and mutually shaped by reality and fiction

Although digital and physical spaces have essential differences, new scenes of human life reshaped by information technology are not a binary existence where online and offline lives are independent and separate from each other. The accelerated renewal of information technology such as the Internet, big data, cloud computing and artificial intelligence, as well as the speedy rise of new models and new business models such as the industrial Internet, platform economy and contactless economy have not only promoted the integration of physical and digital spaces and facilitated the extensive and deep integration of data elements with the real economy, but also broken down industry barriers horizontally, making cross-border integration the norm and contributing greatly to the development of "smart" society. In 2021, the scale of China's digital economy reached 45.5 trillion yuan, among which, the scale of

[1] CNNIC. The 51st Statistical Report on the Development of China's Internet.

digital industrialization reached 8.4 trillion yuan, accounting for 18.3%, and the scale of industrial digitalization reached 372,000 yuan, accounting for 81.7%[2].

The vigorous development of new models and industries has incubated a number of new jobs, such as e-contract delivery workers, digital business operators, online education trainers, heads of community group purchases, copyright buyers, and so on.

In a cultural context unique to "smart" society that allows free participation and broad mobility, we also witness the growing "prosumers" group, a neologism derived from "producers" and "consumers", who pay for their own digital experiences by providing labor and data (Hebblewhite, 2016). For the numerous contents created, configured, consumed and disseminated on the Internet, they are both passive consumers and digital laborers who are highly active and constantly producing content for public consumption, and the free sharing, exchange and consumption of content is driving the rise of participatory culture.

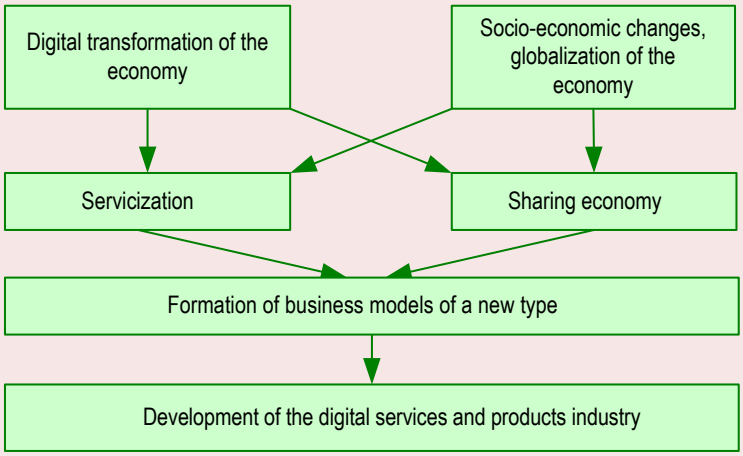
The deep intersection of the two space layers has enabled the current society to move beyond simple digitalization and is considered the "beginning of the Fourth Industrial Revolution" for promoting the birth of a global platform that is closely connected to the real world (Schwab, 2016).

Digitalization and the "smart" society

Thus, digitalization is changing the very nature of production and provision of services by introducing entirely new technologies and service provision platforms, providing digital formats for service provision, eliminating intermediaries, redefining the principles of interaction with customers, suppliers and partners, enabling ecosystems and connecting partners and contractors to the infrastructure, and providing new payment schemes.

The development of digitalization is determined by combination of the following key trends (*Fig. 1*):

Figure 1. Trends shaping current digitalization development



Source: (Gorbashko, Vatolkina, 2019).

[2] China Academy of Communications. China Digital Economy Development Report (2022). Available at: https://www.toutiao.com/article/7117986854318047759/?app=news_article&timestamp=1681638311&use_new_style=1&req_id=202304161745103CCEF8BCC5D549C3596E&group_id=7117986854318047759&wxshare_count=1&tt_from=weixin&utm_source=weixin&utm_medium=toutiao_android&utm_campaign=client_share&share_token=45114752-e56c-4658-9d7f-454778f82456&source=m_redirect&wid=1681638989370.

1) digital transformation of the economy and social life; 2) socio-economic processes of globalization and sustainable development; 3) trends of serviciation and the emergence of hybrid products; 4) development of the collaborative consumption economy and cooperation economy.

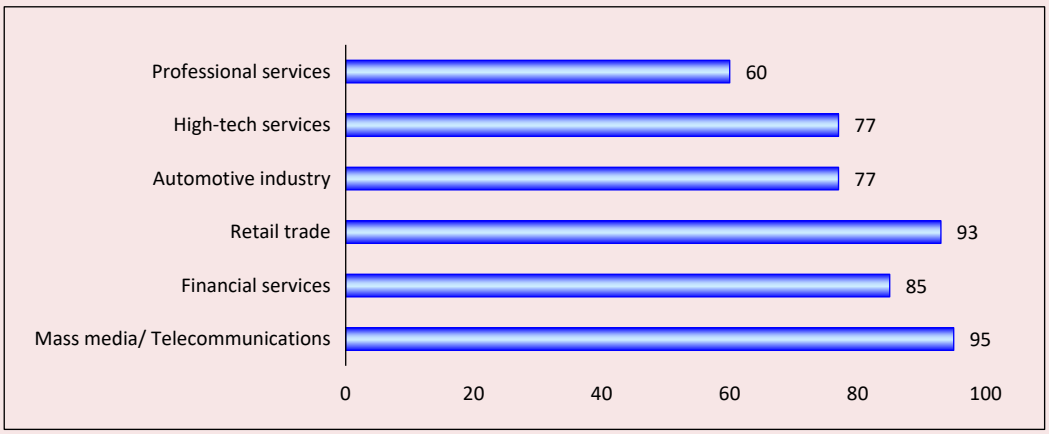
The experience of companies in the USA, the EU and China in introducing digital technologies into production shows that the level of digitalization in these countries is still not high. On average, the level of digitalization is only about 25% of the total potential of the sector (*Tab. 1*).

Global experience shows that in the most digitally developed sectors of the economy, the "winner takes all" principle works. Today, the 10% of companies with the highest digitalization revenues account for up to 80% of the income received in their sector: from 60% in professional services, to more than 90% in the media and telecommunications (*Fig. 2*).

Table 1. Level of digital technologies use by industries in the USA, the EU, and China

Industry	Organizations using digital technologies, %	Factors limiting the industry's development in the context of digitalization		
		Cash flow	Automation and supply chain	Digital workforce
Pharmaceuticals	13.4	+	+	+
Business and professional services	17.0		+	+
Health care	24.3	+		
Media	25.0			+
Consumer goods	28.5	+		
Financial services	29.7	+	+	
Telecommunication services	31.0		+	+
Retail	46.0	+		
Travel services	51.0		+	
Average level by industry	**25.0**			
Source: mckinsey.com				

Figure 2. Revenue share of the top 10% companies using digital technology in their sector, %



Source: mckinsey.com

Table 2. Comparative characteristics of the development level of digital services in the RF and EU countries in 2021, %

Indicator	Russia	China	EU countries
Share of population shopping online	42	48	75
Share of organizations using CRM systems	17	14	38
Share of e-commerce in the total volume of retail trade	3,9	15.9	14.8
Share of population receiving public services online	40	23	56
Share of organizations having an website	51	43	75
Mobile Internet penetration rate	77	98	68
Internet penetration rate	76	82	88

Sources: own compilation according to Abdrakhmanova G.I., Baskakova O.E., Vishnevskii K.O., Gokhberg L.M. et al. (2020). *Tendentsii razvitiya interneta v Rossii i zarubezhnykh stranakh: analiticheskii doklad* [Trends in Internet Development in Russia and Foreign Countries: Analytical Report]. Moscow: HSE University; Tadviser; Rosstat; Kommersant; Tinkoff; Eurostat, Profit.

Digitalization processes in Russia have gained momentum in recent years. Private companies have made significant progress, the labor market is gradually changing, the state is implementing major infrastructure projects, and the Internet, mobile and broadband communications are being widely implemented. Despite the efforts, Russia still lags behind the digital leaders in key indicators of the development of the digital economy, in particular the European Union countries (*Tab. 2*). For example, the share of organizations with the Internet sites in Russia is almost two times lower, there is low citizens' activity receiving public services via the Internet and making purchases online, and there is a smaller number of organizations that have CRM systems.

The achieved level of digital technology development has had the most significant impact on the transformation of the services sector allowing unlimited scaling of business. According to the results of 2019, the contribution of the Internet economy to the Russian economy, amounted to almost 4 trillion rubles. The main share is occupied by the e-commerce (finance and trade) sector and market for electronic payment services, which is the fastest-growing sector of the digital economy[3].

The main factor in the development of the digital economy and information society is considered to be the Internet penetration rate. In recent years, the Internet audience has been growing slowly, mainly due to the inclusion of elderly users. The indicators characterizing the dynamics of the use of electronic services in the Russian Federation in the period 2013–2020 (*Tab. 3*) allow concluding that the fastest growth rates of electronic services are the Internet use for ordering goods, services (226%), the use of the Internet to obtain state and municipal services in electronic form (242.9%). During the study period, the share of the population using mobile Internet via smartphones increased from 12 to 59%.

The Internet penetration rate in business and social sectors is also high and has remained virtually unchanged since 2013.

[3] Kazaryan K., Saykina M. Runet Economy 2018. Digital Economy of Russia 2018. Electronic Communications Association. Avaialble at: https://raec.ru/upload/files/ru-ec_booklet.pdf

Table 3. Selected indicators characterizing the dynamics of the electronic services use in the Russian Federation in 2013–2020, %

Indicators of electronic services use	2013	2014	2015	2016	2018	2020	2020 to 2013,%
Share of population that has ever used the Internet in total population aged 15–74	71.0	74.1	77.7	80.8	83.7	87.3	122.9
Share of population using the Internet almost every day in total population aged 15–74	48.0	51.6	55.1	57.7	60.6	68.8	143.3
Share of population using the Internet for ordering goods and services in total population aged 15–74	15.3	17.8	19.6	23.1	29.1	34.7	226.8
Share of population using the Internet to get state and municipal services in electronic form in the total number of people aged 15–72 who received state and municipal services in the last 12 months	30.8	35.2	39.6	51.3	64.3	74.8	242.9
Share of business sector organizations (in their total number) that use:							
Broadband Internet	80.8	81.4	78.9	80.5	81.6	–	101.0*
Cloud services	11.0	13.8	18.4	20.5	22.6	–	205.5*
Electronic data exchange between own and external information systems	24.1	53.1	59.2	61.6	62.2	–	258.1*
Share of social sphere organizations (in their total number) that use:							
Broadband Internet	75.8	79.2	79.3	81.5	83.5	–	110.2*
Cloud services	12.0	14.1	20.0	21.8	24.4	–	203.3*
Electronic data exchange between own and external information systems		49.8	57.6	61.0	62.6	–	125.7**
Share of the population using mobile Internet with smartphones, %	12.0	18.0	37.0	42.0	52.0	59.0	491.7

Sources: Abdrakhmanova G.I., Vishnevskii K.O., Gokhberg L.M. et al. (2017). *Digital Economy Indicators in the Russian Federation: Data Book*. Moscow: HSE University; Abdrakhmanova G.I., Gokhberg L.M., Kevesh M.A. et al. (2019). *Digital Economy Indicators in the Russian Federation 2019: Data Book*.. Moscow: HSE University; Internet Penetration in Russia. Moscow. GfK Research. Available at: https://www.gfk.com/ru/insaity/press-release/issledovanie-gfk-proniknovenie-interneta-v-rossii/

In order to increase the level of digitalization of services, a set of measures is needed to reduce their cost, and to improve their quality, especially their simplicity, usefulness and security. The perception of the quality of electronic services and the intention of their use are influenced by personal, social and marketing factors. That is why the formation of a positive image of electronic services, information literacy improvement and accumulation of positive experience in the service use currently have the main influence on the increase in the audience of users.

The term "smart society" is widely used as a slogan which indicates a nation's vision or a region's future plan to achieve a highly developed information society.

Most studies describe "smart" society as a state, in which citizens' quality of life, as well as the efficiency, productivity and competitiveness of society are significantly improved through widespread use of such advanced information and communication technologies, and artificial intelligence technologies.

The word "smart" is widely used in such terms as "smartphone", "smart car", "smart house", etc. In such phrases as "smart car", "smart house", the word "smart" means that a car, house, building and agricultural object fulfil their functions autonomously with the help of programming technology or artificial intelligence with no manual manipulation of an owner. At the same time, the concept of "society" includes a kind

of sub-elements: governance, citizens, lifestyle, etc. Therefore, for a society to be called "smart", its governance, citizens and lifestyle should be intelligence (Netesova, 2020).

"Smart" society uses the potential of technologies to increase the workforce productivity; to enable them to use their resources for truly meaningful actions and relationships; and ultimately to improve health, well-being and quality of life.

The Center for Big Innovation has identified five factors that will contribute to the continued development of "smart" society, encompassing what it takes: a data-driven culture; empowered and digitally literate citizens; empowering government institutions that provide "smart" leadership; empowering infrastructures; and open platforms and markets. These are the aspects that should be focused on in order to maximize the opportunities offered by the next wave of "smart" society development[4].

The formation of a "smart" society depends on the degree of the digital technology development. "Smart" technologies make our lives better in three main areas:

– currently, almost all activities are being carried out more efficiently and effectively;

– digital technologies are changing the relationship norms, making new kinds of relationships possible and expanding and strengthening our connections with each other;

– new types of business models are being created which produce, deliver and add value by increasing efficiency and effectiveness through new forms and norms of relationships, and innovative and complementary products and services.

The Internet is also having a significant impact on how businesses conduct business and interact with each other. Cloud storage, integrated procurement systems and "enterprise social networks", which improve real-time communication within and between organizations, help states to increase the quality of life of their citizens. Thus, "smart" digital technologies are helping to create a "smart" society.

Society consists of components such as politics, government/public service, productive/economic activities, knowledge creation (education), culture (attitudes and lifestyles) and citizens, hence the

Table 4. Main features of "smart" society

Category	Characteristics or features necessary for a society to be called "smart".
Politics	Citizens' active participation in politics (legislative and policy development); openness of legislative/policy development processes
Public administration/public service	Citizens' active participation in the process of public administration and service delivery; openness of the process of public administration and provision of public services; transition from civil servant-centered to citizen-centered public administration and public service delivery
Production and economic activities	Development of products and services which enable autonomous operation or functioning based on sensing and artificial intelligence technologies; realization of demand and interest of citizens in the field of production and economic activities
Knowledge creation (education)	Active participation of ordinary citizens in the process of knowledge creation, e.g. collective intelligence; realization of the principle that a pupil is the main participant in the learning process in educational institutions
Culture (attitudes and lifestyles)	Shaping a culture to promote innovative lifestyles focused on a citizen's needs; harmonization of diverse lifestyles and values/views through non-discriminatory treatment of all citizens regardless of their status, including race, gender, age, income level, region of residence, etc.
Citizens	Developing the potential of every citizen to participate in information creation and community activities

[4] Question 1/2: Shaping a "smart" society: Socio-economic development through ICT applications. Final report. Available at: https://www.itu.int/pub/D-STG-SG02.01.1-2017

characteristics of "intellectual capabilities" can be described in relation to each component of society, as presented in *Table 4*.

Thus, a "smart" society can also be described as follows: it is a society in which the spheres of politics, public administration/public service, production and economic activity, knowledge creation (education), culture (attitudes and lifestyles), as well as the civic sphere, exist and function with the active participation of citizens not only through the use of advanced ICTs, but also through changes in the legislative sphere and systems of society.

The logic of governing "smart" society

The development of the IoT technology and people's reliance on "smart" devices has brought the volume and type of data gathered to a new level accelerating positive feedback between big data and algorithmic analysis. The function of algorithms is no longer limited to prediction and service, as governments and platforms make more use of them to promote the digital economy development and construction of social order. However, along with the expanding scope of algorithmic analysis, the arising issues are no longer necessarily related to simple model construction and calculation. In fact, some alarming issues worth our attention have emerged in the process of convergence of algorithmic analysis with offline everyday life contexts.

(1) The value orientation of coupling big data algorithms with small data mining

One of them is algorithmic collusion. In general, the fine-grained analysis of individuals in digital society can be regarded as a neutral interpretation of the objective world, and the transparency of the market environment is positively correlated with the utility of competition mechanisms. However, along with the deepening of social transparency, the normal differences between individuals may expand due to the dramatic increase in the amount of available information, resulting in the illusion of a fully competitive and equilibrium market, but in fact it is an implicit allocation of client resources by using subtle algorithms to adopt conscious parallel behaviors to target specific groups (Ezrachi, Stucke, 2018). Under the combined influence of the attributes of the online market, the ease of access to data, the continuous upgrading of algorithms, and the increased transparency of the market, coupled with the promotion of similar algorithms, the platform for algorithmic collusion is built, the results of solid collusion are sustained, and the negative impact on individuals is continuously expanded.

The second trend is algorithmic discrimination. The use of algorithms can eliminate structural ambiguities in social relationships to a certain extent. For example, platforms such as Alipay and WeChat can accurately screen consumers based on data indicators such as their average consumption amount, daily consumption frequency and borrowing status, effectively identify low- and middle-income groups or groups with spending power, so as to collect data for its potential offering of financial help and assistance to those target demographic groups. But the results of algorithmic collusion may harbor more implicit and deeper levels of oppression and discrimination. When highly automated programs differentiate between populations based on the identity data collected, their propensity to measure and select data with bias allows unjust assumptions and values to be embedded at every step of algorithm creation adversely affecting disadvantaged populations. In addition, an over-reliance on data correlation can lead to neglect of the accuracy of the data in the operation of the algorithm. When errors are systematized, algorithmic control fails. For collective discrimination, groups may be able to get organized to protest, but for algorithmic injustice and discrimination against individuals, they may be completely unaware of the reasons or have difficulty protesting effectively.

In fact, individual needs and value preferences are mainly derived from the evaluation of the value of things, and the "calculations" lurking in the algorithm render the rational thinking directly based on individual biological instincts or innate moral values less stable (Pentland, 2015). Further, computer systems may evolve into more complex architectures and states of connection, but this does not mean that algorithms will purposefully become self-aware in the future (Zarkadakis, 2017); human dependence on algorithms does not equate to computers acquiring human consciousness. Accordingly, in the new social form created by humans and machines, although the issues may grow more diverse and complex, and the range of people's professional skills will continue developing, the direction of responding to people's appeals and creating a more equitable social contract to meet their expectations remains unchanged. We still need to "be humble and bear in mind the essence of human nature" (Mayer-Schönberger, 2013), avoid falling into the "knowledge arrogance" caused by over-reliance on data algorithms, and start exploring small data from the perspective of showing a deeper sense of humanity.

If big data is a collection of individual or local data flowing to the overall or holistic data, then small data is a personalized and targeted "return flow" after the formation of the data pool, through the immersive perception of individual traits, observation of insignificant behavior, and personalized labeling of data to explore the unmet needs and even unknown needs.

The relationship between algorithmic analysis built on data and structured information and the immersive mining of small data is not a contradictory or opposing one. First, big data algorithms and small data mining are symbiotic in scientific decision making. Algorithmic analysis of recognition models predicts future behavior based on aggregation of data about individuals and perceived similar entities, while algorithms built on internal computation and built-in preferences influence the outcome of an individual's online search. The weakening of habitual human thinking is such that in the near future we may no longer be able to observe our true selves, as algorithms will decide for us "who we are and what we should know about ourselves" (Harari, 2018). And the mining of small data is to build a stronghold of balance in the "poles" that are beyond the reach of big data algorithms, and to supplement the "cold" algorithms with a sense of "human" warmth. Second, these two concepts are in a progressive relationship. Big data algorithms build a connection channel between the quantifiability of information and the uncertainty of the world through exhaustive enumeration to present significant correlations between things in quantitative analysis. Probabilism encodes our beliefs about a static world, while causality tells us whether and how probabilities change when the world is altered, regardless of the form through which they are realized (Pearl, Mackenzie, 2019). Small data mining, within the range determined by the quantitative analysis that has already eliminated uncertainty, is a way of using qualitative analysis to further understand patterns and uncover the value of data in order to form a course of action conducive to achieving the desired results.

(2) Scenarios of order in which decentralization and centralization are juxtaposed

The information technology revolution has reconstructed the basis of order and the cognitive architecture of human society.

On the one hand, there is the logical revolution of decentralization. The Internet has opened a new era of connected networking and decentralized communication, and the production and dissemination of information has shifted from centralized to decentralized, as has the power of governance (Xuefeng, Ping, 2018), leaving the conventional social governance structure facing severe challenges.

For example, in the platform operation, under the multiple influences caused by the increasing personalization of customer needs, diversification of information sources, transmission and processing channels, marketization of intra-organizational relationships, as well as the increase in the density and frequency of social connections, the pyramidal organizational structure common to large-scale production is constantly being impacted and challenged, with the boundaries of enterprises being increasingly blurred and the boundaries of various platforms continuously expanded, in which different transaction players are integrated and converted with one another, thereby forming a multilateral market with a web-like structure. The distributed network has greatly expanded public access to information, fundamentally transforming the traditional centralized, hierarchical and top-down information paradigm, and enabling more value- and wealth-creating interactions among individuals through the detailed sharing of virtual but universal and standardized digital identities.

Another example is that along with the maturity and marketization of 5G, artificial intelligence and other technologies, AI scenario-based applications for personal assistants, self-driving, education and other industries will generate a huge demand gap for edge computing resources[5]. The accelerated expansion of data scale has led to an exponential growth in the number of devices to be accessed and data to be processed in the cloud space, and edge computing has emerged to alleviate the problem of over-centralization occurred in the centralized data processing model of the central servers, as edge computing deploys nodes with caching and compute processing capabilities at the edge of the network to handle specific business needs locally in a direct fashion (Ligang, 2019). In-place processing of private and redundant data at the edge of the network close to the data source means deploying a new data processing platform between end devices and the core network, which significantly reduces data response latency and broadband costs and effectively relieves the burden on the central server. It is therefore suitable for various industry applications under distributed architecture and more tailored to the realistic needs of the IoT era.

Similarly, all rules in the blockchain network are presented in the form of "smart" contracts, and its unconditional trust between nodes that do not depend on third parties breaks the barrier of severe credit inequality in the centralized world. The consensus mechanism shown as code or semi-code also guarantees the free will of the two parties when contracting.

As we can see, the blockchain network accurately defines the access power and participation of nodes, and its qualities of immutability, unconditional trust, automatic execution, coupled connection, etc. build up a decentralized autonomous ecological landscape. An important technology that opens a new era of the Internet, the distributed ledger data repository constructed by blockchain takes the holographic multi-backup serial structure and asymmetric encryption algorithm as its precondition, and opens a new distributed and shared paradigm that weakens and divides the central control, whose open-source architecture enables the consensus algorithm to be iteratively innovated and more compatible, which means the end of social hegemony, economic hegemony, and racial hegemony. In addition, it also ends health and gender discrimination, and gender identification.

On the other hand, there is the trend of re-centralization, which differs from decentralization. First, individual information data are absorbed into

[5] Big Data Industry Ecological Alliance, CCID Consulting Co., Ltd. 2020 China Big Data Industry Development White Paper.

the data pool. The larger the data volume is, the better it is for improving the accuracy of algorithm prediction, forming an intermediate node that tend to be stable. Within the radius of this intermediate node, platforms are keener to enhance the speed of network connectivity and the efficiency of big data algorithms in the pursuit of digital competitiveness. They continue using algorithms to gain a dominant power in the market and apply data tools to find out market clearing prices, suppressing similar competitors while narrowing users' choices. Immediately afterwards, the process of social cell division accelerates, which results in a digital divide between various groups due to differences in access to and use of digital technologies, followed by the gradual formation of monopoly advantages by some enterprises in the process of seizing digital competitiveness, which in turn further deepens the digital divide. Consequently, the unbridled growth of big data algorithms leads to excessive concentration of wealth and power, leading to more intractable issues of digital inequality.

Second, the cloud space that houses big data has become a commanding position for companies to compete for. Very few companies control the process of global expansion of network data centers, and their monopoly on bulk data and information technology makes it possible for organizations and individual data to move into a shared pool of resources on a large scale. The cloud space with its superior storage capabilities and processing power has reshaped the information technology industry by combining channels and devices more efficiently. It is because cloud computing provides a broad, convenient, on-demand formulation of the network that has enabled a qualitative leap in data, applications, information storage, processing, and distribution. The cloud space is "involved in a global oligopoly and on its way to a global coterie" growing increasingly into a new gravitational field for centralization (Mosco, 2017).

Then again, blockchain technology is not entirely decentralized or immune from centralization. In the Bitcoin network, at first the nodes are divided so that miners can get value recognition that exceeds of non-miners by mining for bookkeeping rewards, and then the competition between miners for bookkeeping rights intensifies leading to a wealth gap between nodes. In the absence of external regulation, the entire network will inevitably cause monopolization of resources and drift away from the original intention of decentralization. According to statistics on Bitcoin mining pools, ranked by the computing power owned, the top 10 mining pools accounted for about 85% of all mining pools' computing power in 2017, while the top 40 pools harvested all bitcoin output that year (Ran, 2019). Bitcoin uses proof of workload as the consensus mechanism, with the hashrate as the core to ensure the low threshold for network node entry as well as the fairness and transparency of the miner competition and testing process, which reflect procedural justice. The ensuing rapid development of the mining industry has also led to the expansion of arithmetic power and concentration of transactions, triggering a recentralized oligopoly.

On the whole, the banner of decentralization raised in the Internet era will help individuals gradually leave the solidified central field by giving them more power, but in the competitive struggle of the market, individuals will not escape from becoming the "trophies" of recentralization. From centralization, decentralization to recentralization, it is not a repetition or regression of the same process, but a progression of social evolution to a higher level in the process of migration from social networks to virtual networks, with the achievements of the Internet technology as the carrier. In this process, the laws of decentralization of connection and centralization of nodes, decentralization of content and centralization of

modalities, and decentralization of communication and centralization of creation are juxtaposed with each other, enabling decentralization and re-centralization to flourish in different scenarios. Therefore, the constitution of "smart" society is not the centralization of efficiency and extreme collectivism, nor the decentralization of equity and complete anarchism, but rather a polycentricity that seeks a balance between the two on the basis of stability, i.e., within the overall structure of the state organization, the principle of polycentricity is used to lay out the corresponding weights of equity and efficiency in the different levels of the whole social collaboration system (Sanderson, 2015).

(3) Principle according to which rules of governance and code regulation complement each other

The Internet has helped mankind to unfold the magnificent scroll of "smart" society, where development of information technology has created new opportunities for human communication and mobility and the heterogeneous network is replacing the homogeneous functional system (Kucklick, 2018). In this complex network system where everyone is closely related and everything is interconnected, the two-layer space continues breaking through the established pattern of time and space to accelerate integration, and the uniqueness and differences maintained by members of society become the link to build a balanced society. As a result, the cornerstone of social trust has changed profoundly, as the trust mechanism built on the basis of information technology has completely overturned the traditional trust of society of acquaintances, which relies on geographical and kinships, and further promoted the leap forward of institutional trust in a strangers' society. The digitization and quantification of trust relationship ensures free expression of will, free conclusion of contract, traceability of the whole life cycle, and safety of labor value by using the Internet as the boundary, code as the carrier, data and algorithm as the basis, which continuously dissolves the restrictions of geography, lineage and social system, and enhances the tolerance of uncertainty and error. In the digital space arising from a specific technical architecture, the only thing that computers can recognize is the legal rules that are converted into codes. Therefore, it is necessary to value the important role of technical regulation in the governance of digital space, and within a certain scope, the code can even be regarded as the legal rules of cyberspace (Xuefeng, Ping, 2018).

In the initial stage of the platform, all kinds of participants continue flooding in, and each party can obtain certain value under the effect of positive network. As the number of users reaches its peak, the relationship between the platform and its customers is transformed from a win-win cooperation of "mutual benefits" to a zero-sum game of "your loss is my gain", in which consumer data forms a closed loop within the platform ecosystem and consumers seem to be the forever "targets", no matter to whom the scale is tilted. The rapid iteration of data volume and quality has aided platform companies to increasingly hold the power of governance. As a result, operating platforms with a dominant position have started the game of "price discrimination against existing customers". Apps and websites providing online products or services, such as shopping, trip booking and taxi/ride hailing, have been the sectors bearing the brunt (Shouhu, 2020).

Obviously, the competitive edge gained by operating platforms relying on code regulation comes at the expense of user welfare, which is followed by weakened user experience, reduced stickiness, and "disaffection" of the users when conditions are ready. There is an ever-increasing sense of social mistrust, which is positively related to the unnecessary growing loss of social welfare. Thus, although in some cases code regulation is more straightforward and effective than sole legal

regulation, to equate code entirely with law would be no different from realizing the utopian ideal of complete network autonomy. Moreover, it requires attention whether codes that can be recognized by computers can be self-consistent in physical space and consistent with the requirements of legal rules.

As we enter the post-pandemic era, the technological revolution will pick up the pace of innovation, the "smart transformation" ushers in the historical milestone of development, and the digital world achieves a decisive or even permanent expansion and development (Schwab, Malleret, 2020). However, the digital space is not a lawless place to grow arbitrarily, and the idea of replacing regulation with automated operation is as unrealistic as flying cars or space colonization (Pasquale, 2015). So to achieve the effectiveness of governance of "smart" society, it is necessary to strengthen the institutional constraints and government regulation through laws and norms to prevent a "regulatory vacuum", but also to construct the Internet-based design options and software code that specifies user behavior as a support to prevent the governance gap. The reality of the development of the Internet shows that the existing legal norms, the behavior of network platform operators and users are not completely separated from each other. Whether in physical space or digital space, no one can be free from the control of the laws of a sovereign state, and there is no need to create a separate legal code that is completely disconnected from the actual laws in the real world.

Of course, adherence to the principle of the rule of law is not to directly copy the rules applicable to physical space and paste them to the digital space, but to form a normative complex combining various laws and regulations formulated by the government with self-regulatory norms established by network platforms and industry associations, and the weights of the two will directly affect the effectiveness of the rule of law. Extreme intervention may lead to problems such as inefficiency and lack of incentive to innovate, while the absence of regulation may trigger issues such as unfair competition and oligopoly, which in turn consume high socio-economic costs. Therefore, sticking to a user-demand-centered stance, we need to weigh the benefits and costs of regulation, gain positive-sum outcomes instead of playing the zero-sum game, and adopt the constraint principles that rule-based governance and code regulation complement each other, so as to ultimately promote sustainable social innovation and governance.

The path of practicing the governance of "smart" society

Intense development of information technology has elaborately analyzed the "smart" society, where people form distributed participation and inter-mingled interaction by relying on social media such as Weibo, WeChat and live streaming. In this type of society, the one-way and hierarchical linear model can no longer meet the practical requirements of social governance, and various entities face the common goal of interdependence and collaborative development. The interweaving of multi-level entities of information rights and data objects, such as society, government, industries, enterprises and individuals, gradually constructs a model of a pluralistic governance, whose typical feature is to involve but not limited to the participation of multiple entities[6]. The open, collaborative and inclusive governance synergy of diversified and multi-level entities makes the concept of social governance increasingly moderate and mature, and also makes the connotation of social governance of co-construction, co-governance and sharing more extensive and comprehensive.

[6] China Academy of Information and Communications Technology. White Paper on China's Digital Economy Development. 2020.

(1) Formation of open and secure digital ecosystem

The current demand for open data sharing maps out the common challenges of the big data industry, which urgently requires the construction of "digital ecosystem" that is highly open to various technologies and devices and has a well-organized participating community (Koulopoulos, 2019). This ecosystem collects and integrates fragmented data from a series of devices that are organized and in constant communication, building a data pool that ensures data relevance and covers the real-time picture.

The transparency of data network required by the digital ecosystem is not only the process of opening and flowing individual or local data to the totality or overall data, but also includes the opening and exchange between various data pools. Only by breaking down information barriers and promoting smooth data exchange can the efficiency of the digital ecosystem as a whole be maximized. Thus, data openness helps to avoid excessive concentration of value and power that leads to imbalance of benefits and risks, and also facilitates the replacement of anomalies or incompatible structures among different cities or sectors to share data resources.

Accompanying with data openness is the issue of data security. With the rapid development of the Internet, the IoT and other technologies, the volume and dimension of data collected by individuals in real time have expanded as never before. While data technology refines the analysis of individuals, it also intensifies the risk of personal privacy being exposed, and the ability of individuals to control and manage their own data gradually weakens. In order to regulate data ownership within the realm of legal governance and to take into account the interests of all stakeholders including data subjects, data ownership can be considered as a result of negotiation, and organizations that collect data and individuals who are data samples are encouraged to use contracts as a means to share risks and responsibilities (Millard, 2019) . On the one hand, individuals are given more rights to manage their personal information to ensure that they are aware of the effects of signing the agreement and how the data will be used; on the other hand, an umbrella privacy option is set up to raise the cost of data use for both collectors and users by relying on technology, so that data users and owners can be informed and mutually supervised in both directions at all stages from data collection to use.

(2) Building synergistic and joint multi-governance circle

Entering "smart" society, the state and social forces can interact, empower and transform each other (Yongnian, 2014) using online platforms to promote efficient arrangement of resources and personnel in collaborative and linked multi-governance circle.

At the national level, we should promote the construction of "smart" government. Parallel to the process of fine interpretation of everything in "smart" society is the accelerated disintegration and reconstruction of laws and systems formed in the "coarse-grained society" in many fields. The refinement of "smart" society makes individual life no longer limited to the simple obedience to the code, but subject to the comprehensive influence brought about by multifaceted complex composed of observation, guidance, supervision, prediction, evaluation, adjustment and other elements. The "mobile expectations" created by the penetration of people's consumer experiences from one industry to another are a new dimension for governments to consider when understanding and defining value strategies.

Unlike the conventional "wholesale government" that follows a set of standards and rules, the advantage of "smart" society government is that like a retailer, it takes a more flexible and personalized

approach to issues (Goldsmith, 2019), truly putting the experience of resident satisfaction ahead of the evaluation of rules. In such a governance system, the government proactively responds to actual requests for help before they occur by fully grasping and interpreting urban demand signals and using social feedback loops. While the "visible hand" cannot solve all problems on its own, the extra attention, necessary interventions, and flexible governance can indeed help understand and mitigate potential risks in a data-driven marketplace environment, as well as obtain sufficient market information to provide a valuable framework of ideas for the incubation of new enforcement tools.

At the social level, there is a multifaceted collaborative participation in governance. On the one hand, there is individual distributed presence and interaction. Along with the accelerated integration of physical space and digital space, the flattening, fragmentation and mobility in space are also intensifying. The developing individualism, wireless connectivity, and ubiquitous Internet all promote networked individualism (Rheingold, 2013). The differences and uniqueness of individual behavior are magnified by digital technology, forming an increasingly "granular" distributed presence of individuals as prosumers in the digital space. The cornerstone of order in "smart" society is no longer social control, but the mutually beneficial behavior between individuals. However trivial an individual's behavior may be in comparison to the entire network, it can play a specific role in refining algorithms and improving processes. Individuals form distributed participation and mingling interactions through online media such as Weibo, WeChat, and live streaming, which reshape the public opinion field and governance logic where numerous nodes in the public space co-construct and co-govern on the basis of diverse and differentiated social relations. On the other hand, the serious challenges of data divide, algorithmic collusion, algorithmic discrimination and recentralization in digital space require more smooth channels for public participation. Platforms, people, industry organizations, media and other social forces should be empowered to govern society collaboratively, integrating the top-down "pull" of the state and the bottom-up "push" of society to generate vital momentum for the construction of a collaborative and linked multi-governance circle.

(3) Shaping inclusive dividend sharing circle

The basis for building "smart" society is the sharing economy, in which physical and digital spaces coexist. In the multilateral market, the joint participation of different social groups, such as owners, operators and users, becomes a catalyst for the expansion of the capital market, yet at present, the result of multiple participation is excessive concentration of wealth. Taking the platform as an example, whether it is the executives or founders within the platform company or the general producers who provide products and services on the platform, essentially, they all contribute value to the platform by rendering their individual labor. As a member of this ecosystem, the role of consumers is equally indispensable to an active market. To motivate producers to be diligent and encourage consumers to actively participate, it is common practice for platform companies to use a credit system. However, the value of these credits may be only 1% or 0.1% of the cost of the actual products and services on the platform (Ran, 2019). Rewarding users for their contributions increases the frequency of use as well as the internal stickiness of the ecosystem, however, at the same time, the credits excluded from the mainstream value of the platform not only fail to bring users benefits commensurate with what they actually contribute, but result in the wealth gains of the platform's top employees far exceeding those of the ordinary producers and consumers under the effect of capital amplification.

In the information era, there is a strong correlation between wealth and data, and the monopoly of data resources is often a problem that accompanies excessive concentration of wealth. Therefore, we should protect people at the grassroots from falling into the trap of "information cocoon", breaking thinking of "zero-sum game", and overcoming the preference of "technological empowerment", so that people can share the digital dividend and resulting social dividends. Only in this way can we guarantee the improvement of social governance and the effectiveness of national governance.

Conclusion

In conclusion, we should note that under the influence of digitalization, networking and intelligence, a panoramic form of interaction between physical space and digital space has been formed; and information technology has served as the "fuel" for the exponential expansion of the scale of society, while the implementation of the concept of "human + artificial intelligence" has given wings to social development. "Smart" society increasingly generates the governance logic in which big data algorithm and small data mining are coupled, decentralization and centralization are juxtaposed, and rule governance and code regulation complement each other. This logic exists in the grand process of social development and has nurtured the digital ecosystem, multi-governance circle and dividend sharing circle, adding a dynamic footnote to the modernization of the national governance system and governance capacity.

References

Bell D. (2001). *The Coming of Post-industrial Society. A Venture in Social Forecasting.* New York: Basic Books.

Belozyorov S., Sokolovska O., Kim Y. (2020) Fintech as a precondition of transformations in global financial markets. *Foresight and STI Governance*, 14(2), 23–35. DOI: 10.17323/2500-2597.2020.2.23.35

Bublik N.D., Lukina I.I., Chuvilin D.V. et al. (2018). The development of the digital economy in the regions of Russia: Problems and opportunities (on the example of the Republic of Bashkortostan). *Regional'naya ekonomika i upravlenie= Regional Economy and Management: Electronic Scientific Journal*, 1(53). Available at: https://eee-region.ru/article/5313/ (in Russian).

Chayko M. (2019). *Superconnected: The Internet, Digital Media, and Techno-Social Life.* Second edition. Beijing: Tsinghua University Press.

Chen Shouhu (2020). Curbing Big Data "price discrimination" with the rule of law. *People's Daily*, 12, 09(5).

Ezrachi A., Stucke M.E. (2018). *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy.* Beijing: CITIC Press.

Galbraith J. (2004). *Novoe industrial'noe obshchestvo* [The New Industrial State]. Moscow: AST.

Goldsmith S. (2019). *The Responsive City: Engaging Communities Through Data-Smart Governance*. Hangzhou: Zhejiang People Publishing Press.

Gorbashko E.A., Vatolkina N.Sh. (2019). Trends in service sector development in the era of digital transformation. *Tekhnikotekhnologicheskie problemy servisa*, 3(49), 45–52 (in Russian).

Guzov Yu.N. (2021). Directions of digitalization of accounting and audit. *Audit*, 4, 11–16. Available at: https://www.elibrary.ru/download/elibrary_46613909_94848458.pdf (in Russian)

Harari Y.N. (2018). *21 Lessons for the 21st Century.* Beijing: CITIC Press.

Hebblewhite W.H.J. (2016). *Means of Communication as Means of Production Revisited.* Shanghai: East China Normal University Press.

Hindmann M. (2016). *The Myth of Digital Democracy.* Beijing: China University of Political Science and Law Press.

Huo Ran. (2019). *Blockchain on the Poker Table – Business Evolution and Opportunities in the Post-Network Era*. Beijing: CITIC Press.

Jie H., Ying C. (2022). Research on the current situation, trends and countermeasures for the development of China's digital economy. *Development Research*, 39(3), 72–76. Available at: https://kns.cnki.net/kcms/detail/detail.aspx?FileName=FZYJ202203010&DbName=CJFQ2022

Kapur J. (2014). New economy/old labor creativity flatness and other neoliberal myths. In: McKercher C., Mosco V. (Eds.). *Knowledge Workers in the Information Society*. Shanghai: Shanghai Translation Press.

Koulopoulos T. (2019). *Revealing the Invisible: How Our Hidden Behaviors Are Becoming the Most Valuable Commodity of the 21st Century*. Beijing: CITIC Press.

Kucklick C. (2018). *The Granular Society*. Beijing: CITIC Press.

Kuzovkova T.A., Kuzovkov D.V. et al. (2017). Methodology of infocommunication development external socio-economic efficiency measurement. *Sistemy upravleniya, svyazi i bezopasnosti=Systems of Control, Communication and Security,* 4, 112–165. Available at: http://sccs.intelgr.com/archive/2017-04/06-Kuzovkova.pdf (in Russian).

Ma Changshan. (2020). The logic of governance in digital society and the development of its rule of law. *Legal Science (Journal of Northwestern University of Political Science and Law)*, 5.

Mayer-Schönberger V. (2013). *Big Data: A Revolution That Will Transform How We Live, Work, and Think*. Hangzhou: Zhejiang People Publishing Press.

Millard C. (2019). *Cloud Computing Law*. Beijing: China Legal Publishing House.

Mosco V. (2017). *To the Cloud: Big Data in a Turbulent World*. Beijing: China Renmin University Press.

Netesova M.V. (2020). Smart society: Approaches and interpretations. *Vektory blagopoluchiya: ekonomika i sotsium=Journal of Wellbeing Technologies,* 4(39). Available at: https://cyberleninka.ru/article/n/smart-society-podhody-i-interpretatsii (accessed: July 11, 2023; in Russian).

Pasquale F. (2015). *The Black Box Society: The Secret Algorithms That Control Money and Information*. Beijing: CITIC Press.

Pearl J., Mackenzie D. (2019). *The Book of Why*. Beijing: CITIC Press.

Pentland A. (2015). *Social Physics: How Good Ideas Spread – The Lessons From A New Science*. Hangzhou: Zhejiang People Publishing Press.

Rheingold H. (2013). *Net Smart: How to Thrive Online*. Beijing: Publishing House of Electronics Industry.

Sanderson J.W. (2015). *The Era of Everyone*. Beijing: CITIC Press.

Schwab K. (2016). *The Fourth Industrial Revolution*. Beijing: CITIC Press.

Schwab K., Malleret T. (2020). *COVID-19: The Great Reset*. Beijing: CITIC Press.

Strelkova I.A. (2018). Digital economy: New opportunities and threats for the development of the world economy. *Ekonomika. Nalogi. Pravo (ekonomika, nalogi i pravo)*, 11(2), 18–26. DOI: 10.26794/1999–849X-2018-11-2-18-26 (in Russian).

Xiang Ligang. (2019). *5G Era: What Is 5G and How Will It Change the World*. Beijing: China Renmin University Press.

Zarkadakis G. (2017). *In Our Own Image: Savior or Destroyer? The History and Future of Artificial Intelligence*. Beijing: CITIC Press.

Zheng Yongnian. (2014). *Technological Empowerment: The Internet, State, and Society in China*. Beijing: Dongfang Publishing House.

Zhou Xuefeng, Li Ping. (2018). *Governance and Legal Responsibility of Online Platforms*. Beijing: China Legal Publishing House.

Zuo P., Chen J. (2021). Digital economy and economic growth in the perspective of high-quality development. *Research on Finance and Economics*, 9, 19–27. DOI: 10.19654/ j.cnki.cjwtyj.2021.09.003

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Development of Small and Medium-Sized Enterprises in the Regions of Russia: Cluster Analysis Taking into Account the Economic Development of the Territory

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Abstract. Regional economic processes determine the scale of functioning and performance of small and medium-sized enterprises due to their specific involvement in the economy of a territorial entity and quick response to changes in the external environment. The unevenness and high differentiation of economic development in the territories determine the heterogeneity and differences in the level of entrepreneurship development in Russia. In this regard, the aim of our study is to arrange Russian regions into clusters according to indicators reflecting the development of small and medium-sized enterprises and macroeconomic parameters characterizing the economic environment of their functioning, which either acts as a driving force or creates obstacles. The novelty of the approach consists not only in the fact

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that it integrates enterprises' development indicators and indicators of the external economic environment of their functioning into the clustering parameters, but also in the formation of final clusters, taking into account the grouping of regions for each year of the period under consideration. This makes it possible to determine the stability of the territory in the group or to track the movement between groups. The k-means method is chosen for clustering. Clustering was carried out according to Federal State Statistics Service data from 2015 to 2021 in 85 regions of Russia. Five clusters have been obtained, whose features confirm the assumption that the development of small and medium-sized enterprises is determined by the economic development of the territory as an external environment of their functioning. Nevertheless, a special second cluster was identified, with the presence of restrictions on the use of the potential of the economic environment, which includes regions that differ in the average level of development of small and medium-sized enterprises against the background of high economic development. The results obtained can be used in the elaboration and implementation of policies to improve the sphere of small and medium-sized businesses at the level of the state as a whole and at the level of a particular region. Further development of our findings may consist in changing indicators or including other clustering algorithms, further typologizing regions or conducting correlation and regression analysis within individual clusters.

Key words: small and medium-sized entrepreneurship, small and medium-sized enterprises, regions of Russia, grouping of regions, clustering, nonhierarchical cluster analysis, k-means method.

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Introduction

Small and medium-sized enterprises (hereinafter referred to as SMEs) are in the focus of state development programs at both the national and regional levels. This is primarily due to its important role in ensuring employment and economic growth (Ayyagari et al., 2007; Toomsalu et al., 2019). The special significance of SMEs lies in their deep involvement in regional economic processes. They act as key subjects of the region's economy, contribute to regional development, support business climate and competitive environment, influence productivity growth, the labor market and improving the region's standard of living, contribute to more active implementation of import substitution, etc. SMEs, unlike large businesses, are more adaptive, responsive and effecient to changes in the external environment of functioning (Genc et al., 2019).

SMEs, due to their deep integration into the regional economy, build their activities primarily based on the needs of the local market, the volume and structure of local demand (Filonova, Bukreeva, 2013). The high degree of differentiation and the uneven level of economic development of Russia's regions determine the territorial differences in the indicators of SMEs (Barinova et al., 2022). Changes in consumer behavior and business activity, wellfare of economic entities, employment and other indicators of the region's economic development have an active impact on them. The relationship between the development of entrepreneurship (Zemtsov, 2020) and entrepreneurial activity (Obraztsova, Chepurenko, 2020) with the regional development has been repeatedly noted in the works of researchers. Thereby, it seems significant to evaluate the development of SMEs in the context of the regions' economic development.

Russia is a complexly structured state that unites territories, heterogeneous in terms of economic development, with unique conditions for the activities of SMEs characterized by a multiplicity of parameters. This fact creates the need to group heterogeneous regions according to the level of development of SMEs, taking into account the determinants that have developed within the cluster. It is possible to divide a set of objects into homogeneous groups using clustering. Clustering helps to distinguish objects of interest in a group by certain criteria and plays an important role in management and decision-making processes (Sun et al., 2017). Therefore, in order to develop policy and make competent management decisions, it is necessary to cluster regions according to the indicators of development of SMEs and macroeconomic parameters characterizing the external economic environment of their functioning. It is the purpose of this research.

To achieve this goal, we solve the following tasks:

1) to consider theoretical and methodological approaches to cluster analysis of small and medium-sized enterprises;

2) to determine indicators of development of SMEs and macroeconomic indicators characterizing the economic environment of their functioning, which will be the basis for clustering, and their testing;

3) to conduct cluster analysis on selected indicators;

4) to identify and describe the clusters obtained, to interpret the results obtained.

The novelty of the approach lies in the fact that clustering is carried out not only according to indicators characterizing the development of SMEs, but also takes into account the indicators of economic development of the territory in which companies carry out their activities. In addition, the proposed dynamic approach to cluster analysis makes it possible to determine the stability of finding a region in a certain cluster or to track movements between classification groups.

Identification of groups of homogeneous regions based on a variety of heterogeneous data on the level of development of SMEs and economic development of the territory contributes to understanding the similarity of regions within a homogeneous cluster and the differences between the clusters themselves, allows identifying trends, challenges and threats, determinants and features of entrepreneurship development. The research significance lies in the possibility of applying the results obtained both for planning activities and for making managerial decisions on the development of SMEs in Russia both at the state level as a whole and at the level of individual regions.

Overview of existing approaches to cluster analysis of small and medium-sized enterprises

The use of cluster analysis of SMEs development has become widespread both in the foreign and in the Russian research field in the context of solving various research tasks. Classification of SMEs development is carried out by applying hierarchical or non-hierarchical clustering, as well as by combining these approaches.

We use cluster analysis to classify both on the basis of microdata, data of specific SMEs obtained from reporting or by conducting a questionnaire, and on the basis of aggregated data on the functioning of SMEs in individual regions.

In the foreign research field, clustering is primarily used in the analysis of data obtained on the functioning of specific SMEs from reports or surveys. In particular, we carried out cluster analysis to understand production strategies (Lorentz et al., 2016), to assess the factors determining the propensity to export (Haddoud et al., 2018), to study the impact of strategic orientation and knowledge management mechanisms on business efficiency (Jamie Pour, Asarian, 2019), to consider international strategy (Hagen et al., 2012), the introduction of lean manufacturing into activities (Zhou, 2016), the identification of problems and limitations of innovation (Božić, Rajh, 2016), etc.

The Russian research field as a whole is represented by works based on cluster analysis of aggregated data by region. This approach is applied due to the complexity of the country's structure and high degree of territories' differentiation in terms of socio-economic development, which makes it possible to carry out economic and mathematical calculations on secondary regional data collected by the Federal State Statistics Service. The study of the works devoted to the assessment of the development of SMEs in Russia through the use of cluster analysis also revealed that the approaches differ not only by the chosen clustering methods, but also by the indicators that formed the basis of the grouping. In general, researchers conduct clustering, either taking into account indicators of the development of SMEs only (Filonova, Bukreeva, 2013; Levushkina, 2015; Zemtsov, 2016; Shpak et al., 2019; Smirnov, 2021), or supplementing them with separate indicators of the development of the region (Obraztsova, Popovskaya, 2017; Sukhanova et al., 2019) or indicators of state financial support for entrepreneurship (Kuznetsov, Perova, 2020).

The works of researchers most often used the following indicators characterizing the development of SMEs in the region: the number of SMEs, their turnover, investments in fixed assets, the net financial result of activities, etc. Nevertheless, based on the goals set by the scientists, the set of indicators varied.

In particular, the work of Yu.A. Kuznetsov and V.I. Perova (Kuznetsov, Perova, 2020) analyzed the development of small business by applying neural network modeling methods for clustering regions. When performing cluster analysis, we used indicators of small business activity, such as the number, turnover, investments in fixed assets, the net financial result of the activities of the enterprises under consideration, the amount of subsidies allocated from the federal budget for state support of small business to the budgets of Russia's constituent entities. They were applied in absolute values, without scaling, but at the same time monetary indicators were adjusted for inflation. Authors identified significant differences in the number of regions in the five clusters obtained by the results of the analysis, as well as a rather pronounced unevenness in the development of small businesses in Russia's regions.

A similar set of indicators characterizing the development of SMEs in different combinations was used in the works of other authors (Pinkovetskaya, 2014; Levushkina, 2015; Sibirskaya et al., 2016; Shpak et al., 2019). At the same time, the values of the indicators were brought to a comparable level for comparison, normalized either for the SME entity, or for the average number of employees, or for the population.

When selecting indicators for the typology of Russian regions for the development of SMEs, S.P. Zemtsov (Zemtsov, 2016) optimized a set of indicators, selected three variables characterizing the level, dynamics and potential of the development of the SME sector. In particular, to characterize entrepreneurial activity, the author proposed using the ratio of the number of small and medium-sized enterprises to the number of economically active population, to assess the growth of the SME sector – the ratio of revenue of small and medium-sized enterprises in 2013 to 2010, %; to determine the growth potential of the SME sector, the ratio of investment to revenue for the SME sector, %.

As a rule, clustering is carried out only according to the indicators of the development of SMEs without taking into account the socio-economic parameters of the regions. There are a few studies, where an attempt is made to integrate them into cluster analysis, which at the same time is not an independent tool for justifying the directions and selection of mechanisms for the development of SMEs or eliminating existing imbalances in its spatial development. In particular, in the article by E.I. Sukhanova, S.Yu. Shirnaeva, E.O. Konstantinova (Sukhanova et al., 2019) attempts to assess the development of small businesses using cluster analysis and

econometric modeling. As factors, the authors selected variables characterizing the level of socio-economic development of regions, indicators of the development of construction, industry, trade, education and employment of the population, and as an effective indicator – one of the main indicators of small business activity – the turnover of small enterprises. At the same time, the selected determinants do not fully characterize the economic environment of the functioning of SMEs, and the paper does not provide a justification for their choice. At the same time, only one indicator was chosen as characteristics of the development of small business – turnover, which, without taking into account other parameters of the company's activity, does not reflect the state and development of the subject under consideration.

Studying the previous theoretical and empirical works has shown that clustering of regions based on the criteria of SMEs development does not lose relevance, allows solving many tasks, but at the same time is extremely truncated for complex accounting not only of indicators of the subject's development, but also of the environment in which it operates. The exception is the study of O.I. Obraztsova, E.V. Popovskaya (Obraztsova, Popovskaya, 2017), who use multidimensional statistical analysis to characterize the external conditions of entrepreneurship development. The authors included a wide range of social, economic, institutional and other conditions in the region in the composition of the indicators of the external context of entrepreneurial activity, for the assessment of which 144 indicators are used, folding them using the method of principal components. Researchers in the context of the contextual approach to the analysis of entrepreneurial activity note that it is necessary to take into account the dependence of the entrepreneurial activity level in the region not only on the framework conditions of entrepreneurial activity at a particular time, but also on the parameters of their dynamics. Thus, along with level variables, incremental indicators are used in one multidimensional model. This work makes a significant contribution to the deepening of the methodology of multidimensional analysis in relation to the assessment of the external conditions of entrepreneurial activity and the use of its capabilities in order to determine the content and set of tools of state support programs to activate the entrepreneurial potential of the population.

The analysis of the presented approaches makes it possible to note that, despite the use of a wide range of indicators over several years, including the use of dynamic indicators in clustering, the studies do not take into account the movement of the region from cluster to cluster as a result of changes in entrepreneurial activity under the influence of changes in the external economic environment of the SMEs functioning. As a rule, one multidimensional model is built over several years. Our work proposes a different approach involving the construction of a multidimensional model for each year of the research period. Studying the movement of regions between clusters is of significant practical importance for determining the development potential or sensitivity of SMEs to changes in the external economic environment of functioning.

Methods and data

We chose the clustering method as the main method of grouping and typologization in the work. Clustering makes it possible to understand the structure of many indicators for the development of SMEs and the economic development of the territory by dividing them into groups of similar objects. This will make it possible to further optimize the subsequent data processing and improve the efficiency of management decisions based on the results obtained for each cluster separately.

Clustering was primarily based on the k-means method (McQueen, 1967), aimed at dividing n observations into k clusters. This method belongs to the class of nonhierarchical clustering, is characterized by simplicity, ease of implementation and clarity of interpretation of the results obtained.

A large number of observations are distributed over a certain number of clusters, where each observation belongs to the nearest cluster. Affiliation is determined using a cluster mean.

Clustering was carried out for the period from 2015 to 2021. Clusters were built for each year of the period. This approach allows tracking the movement of a region between clusters, as well as identifying the stability of finding a region in a certain group. The final clusters were determined based on the principle of the majority of years the region was in the cluster. We carried out clustering using an environment for statistical computing and graphics R.

We used indicators of not only the development of SMEs, but also indicators of the economic environment as characteristics when classifying regions by clustering. The indicators underlying clustering are presented in *Table 1*. In conducting this study, we used the Federal State Statistics Service data. To assess the development of SMEs, we took the data from the statistical collection "Small and medium-sized entrepreneurship in Russia", in particular from the appendix, which provides information in the context of the constitute entities Russian Federation. All indicators are given to a comparable form. To take into account the size of the territory and

Table 1. Indicators underlying regions' clustering by the development level of SMEs taking into account the economic development of the territory

Designation	Name of indicator	Justification
Indicators characterizing economic development of a region		
X1	Investments in fixed capital per capita, rubles	Investment and technological development acts as a guarantee of economic development and influences SME development (Pinkovetskaya, 2018; Gherghina et al., 2020)
X2	Share of investments aimed at reconstruction and modernization in the total volume of investments in fixed assets, %	
X3	Gross regional product per capita, rubles	Economic growth promotes SME development (Surya et al., 2021); GRP at the regional level, like GDP (GNI) at the country level, is a key indicator of economic development and a criterion for SME growth (Golikova, Kuznetsov, 2017; Tambunan, 2008)
X4	Indices of physical volume of gross regional product per capita, %	
X5	Unemployment rate, %	Unemployment affects entrepreneurial activity (Tarunina, Mavrina, 2015) and creation of new firms (Storey, 1991; Mazzarol et al., 1999); the unemployment rate is one of the key indicators of the state of the labor market (Lukyanova, Oshchepkov, 2007); the duration of unemployment characterizes the tension of the labor market, is an indicator sensitive to external changes, is a sensitive criterion of changes in the economic environment, complementing the unemployment rate (Corak, Heisz, 1996; Nanavian, 2012)
X6	Average duration of job search by the unemployed, months	
X7	Average per capita money income, rubles	The standard of living affects the functioning of SMEs; the availability of capital and purchasing demand, provided by high incomes of the population, act as key factors in the development of entrepreneurship (Kremin, Rossoshansky, 2020). Demand contraction negatively affects the number of SMEs (Zemtsov, Mikhailov, 2021), and the change in its structure towards a lower price segment as a result of negative economic consequences due to income reduction and poverty growth negatively affect the business activity of SMEs in the economy (Kelarev, 2021)
X8	Ratio of average per capita money income to the subsistence minimum level, %	
X9	Population with money income below the subsistence minimum level, %	
X10	Consumer expenditures on average per capita per month, rubles	

End of Table 1

Designation	Name of indicator	Justification
X11	Consumer price index, %	Inflation as one of the indicators of macroeconomic environment is considered as determinants of SME development (Bekeris, 2012; Ipinnaiye et al., 2017)
Indicators characterizing the development of SMEs		
X12	Turnover of small and medium-sized enterprises per capita, rubles	Firm performance, along with financial performance indicators such as return on investment and return on equity, is usually measured by indicators such as return on sales and net profit margin (Li et al., 2009); the growth of SMEs is measured by turnover and employment growth (Leitner, Guldenberg, 2010); it is also important to consider entrepreneurial activity to assess the development of SMEs in regions (Zemtsov, 2016; Shpak et al., 2019)
X13	Number of employees of small and medium-sized enterprises per capita	
X14	Number of SMEs per 1,000 population, units	
X15	Balanced financial result of small and medium-sized enterprises per employee, rubles	
Source: own compilation.		

the parameters of SMEs development, we scaled absolute indicators per capita, the average number of SMEs employees, etc.

When choosing indicators for the development of SMEs and the economic development of territories, we took into account the specifics of the formation of statistical indicators of the Federal State Statistics Service. It is also worth noting that all cost indicators have been cleared of the impact of price changes and brought to the price level of the base year. To improve the quality of clustering, we carried out an assessment of indicators for multicollinearity, according to the results of which the indicator X3 was excluded from the indicators taken into account during classification. *Table 2* gives descriptive statistics of the studied variables X1–X2, X4–X15. To optimize the size of the table, the data is presented at the beginning, middle and end of the analyzed period.

The coefficient of variation for all the studied years indicates that most indicators are characterized by a high spread of values. Thus, with the

Table 2. Descriptive statistics of the indicators of development of SMEs selected for clustering, taking into account the economic development of the territory

Indicator	Year	Average value	Minimum value	Maximum value	Variation coefficient, %
X1	2015	136385.22	16088.00	2625863.99	235.72
	2018	141093.38	25352.84	1912070.55	195.86
	2021	145858.63	32036.55	1701090.30	170.59
X2	2015	18.59	1.50	36.50	41.96
	2018	18.55	3.10	36.40	41.83
	2021	18.27	2.41	44.97	43.95
X4	2015	100.07	94.30	108.30	2.86
	2018	102.40	92.60	114.40	2.30
	2021	105.03	97.10	120.30	3.46
X5	2015	6.76	1.80	30.50	56.07
	2018	6.00	1.20	26.60	56.83
	2021	5.92	2.00	31.10	66.72

End of Table 2

Indicator	Year	Average value	Minimum value	Maximum value	Variation coefficient, %
X6	2015	7.44	5.36	12.28	16.80
	2018	7.43	3.92	11.51	17.09
	2021	7.00	3.46	12.77	21.71
X7	2015	27731.35	15190.61	72146.20	39.75
	2018	27079.99	14047.65	72449.96	43.66
	2021	27649.89	14003.02	78906.49	47.39
X8	2015	271.07	158.80	426.60	21.18
	2018	275.43	156.80	500.10	22.04
	2021	288.57	165.40	568.50	23.96
X9	2015	15.18	7.10	36.90	34.19
	2018	14.26	5.80	34.40	35.83
	2021	13.08	4.60	29.30	36.09
X10	2015	20108.89	7485.00	48277.00	31.67
	2018	20532.68	8604.20	48446.49	31.79
	2021	20938.72	8081.13	47822.56	30.47
X11	2015	112.88	110.33	127.64	2.03
	2018	104.22	101.84	106.00	0.78
	2021	108.46	103.67	111.82	1.18
X12	2015	274364.80	17109.38	1150280.19	60.92
	2018	257374.50	29268.75	1179351.59	61.82
	2021	262857.79	34799.91	944921.35	58.93
X13	2015	0.08	0.01	0.18	37.50
	2018	0.08	0.01	0.15	37.50
	2021	0.07	0.01	0.18	42.86
X14	2015	13.41	1.56	31.94	40.12
	2018	14.41	1.96	42.60	48.23
	2021	12.87	2.75	33.74	43.51
X15	2015	116079.73	-387053.00	434044.07	83.83
	2018	184118.59	49975.26	1067081.26	82.46
	2021	312378.54	-150254.22	1039113.47	49.75

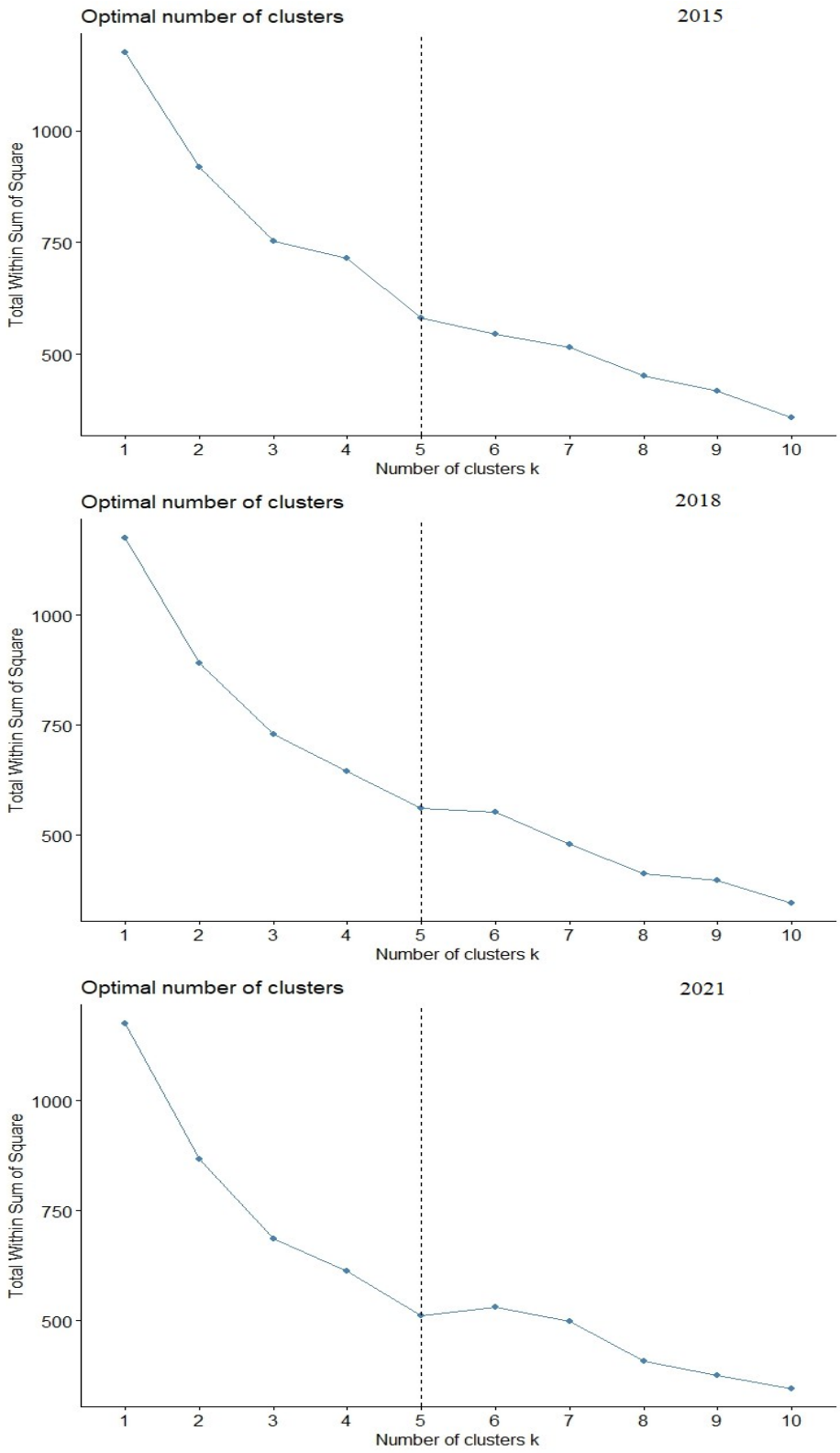
According to: Federal State Statistics Service data.

exception of the GRP per capita physical volume index, the average duration of job search by the unemployed, the ratio of the average per capita money income to the subsistence minimum, the consumer price index, all other indicators of economic development and the development of SMEs differ significantly by Russia's regions. This is the basis for the assumption about the possibility of forming clusters due to the high degree of differentiation of regions by the SMEs development level and the economic environment of their functioning.

Research results

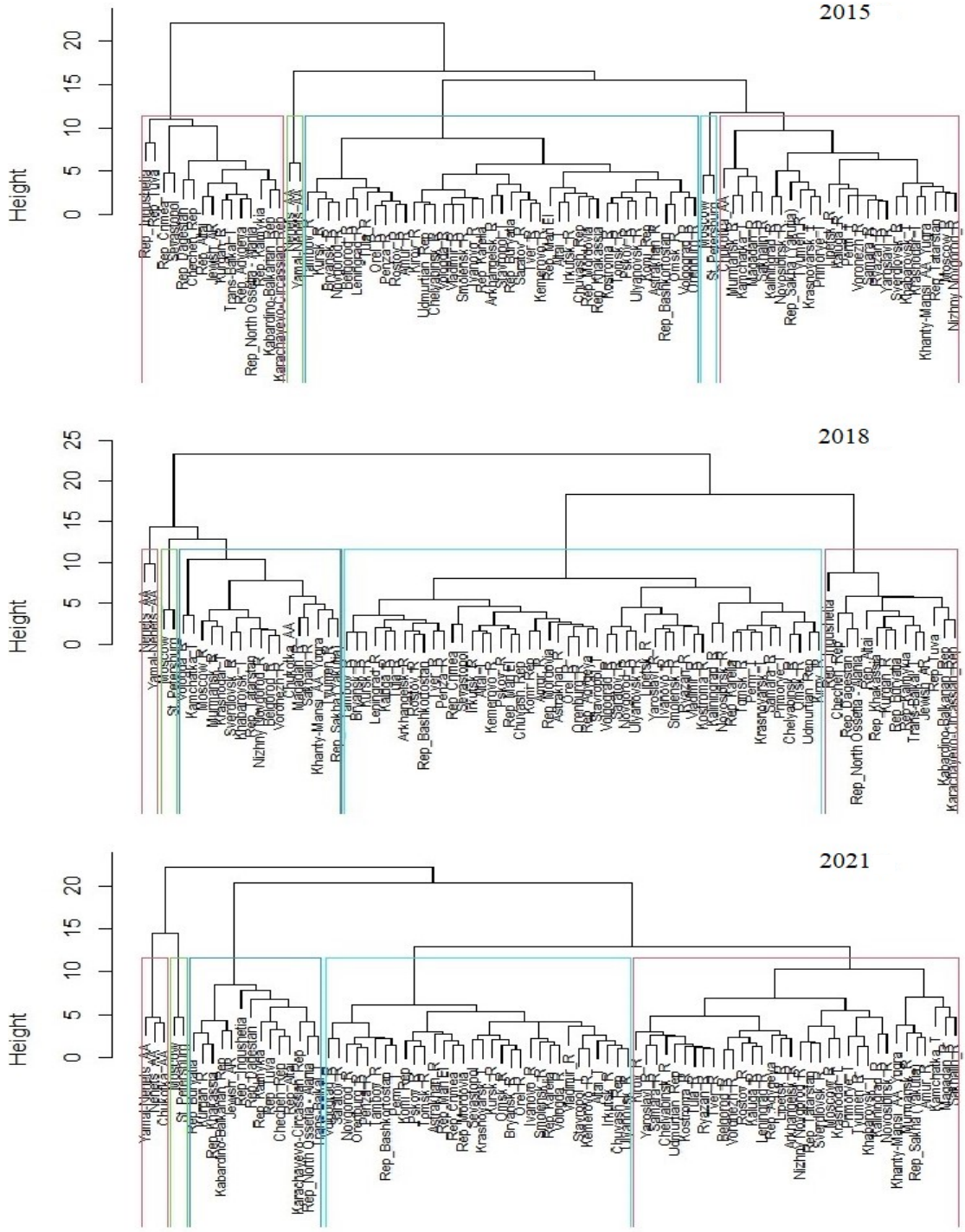
Clustering by the k-means method is used for a predetermined number of clusters, the finding of which is a priority task. To solve this problem, first of all, we applied the "elbow method" (Yuan, Yang, 2019) (*Fig. 1*). Also, to clarify the results, we carried out the construction of hierarchical clustering by the Ward method (Ward, 1963), which is recommended to be used at the initial stage of clustering (Punj, Stewart, 1983) (*Fig. 2*). Evaluation of the results showed that the optimal number of clusters in most years of the analyzed period is five.

Figure 1. The optimal number of clusters by the “elbow method”



Source: own compilation.

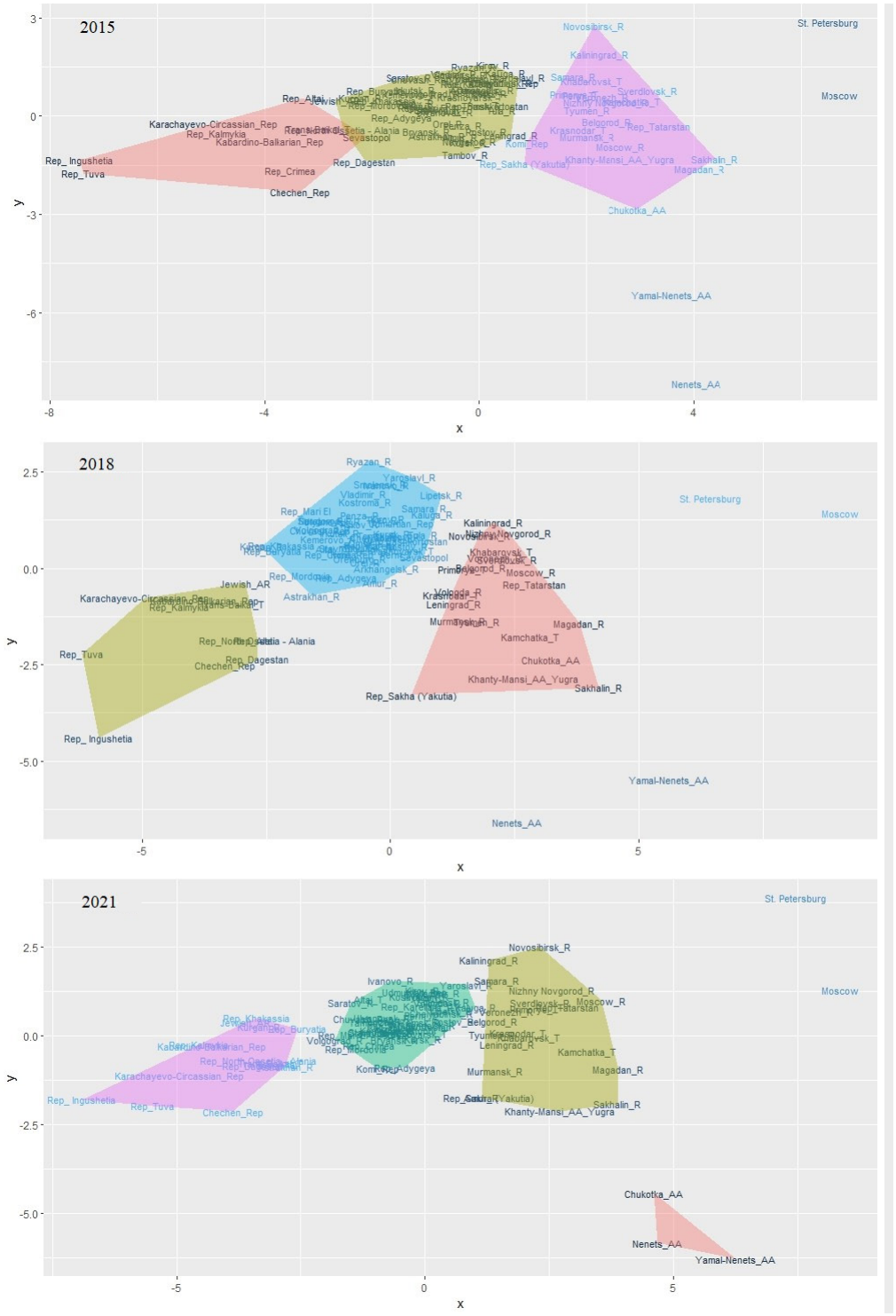
Figure 2. Hierarchical clustering by Ward method to determine the optimal number of clusters



Source: own compilation.

Cluster analysis by the k-means method allowed identifying five groups of homogeneous regions for each year of the analyzed period. The results of clustering, as well as earlier tests for the optimal number of clusters, are given at the beginning, middle and end of the analyzed period (*Fig. 3*).

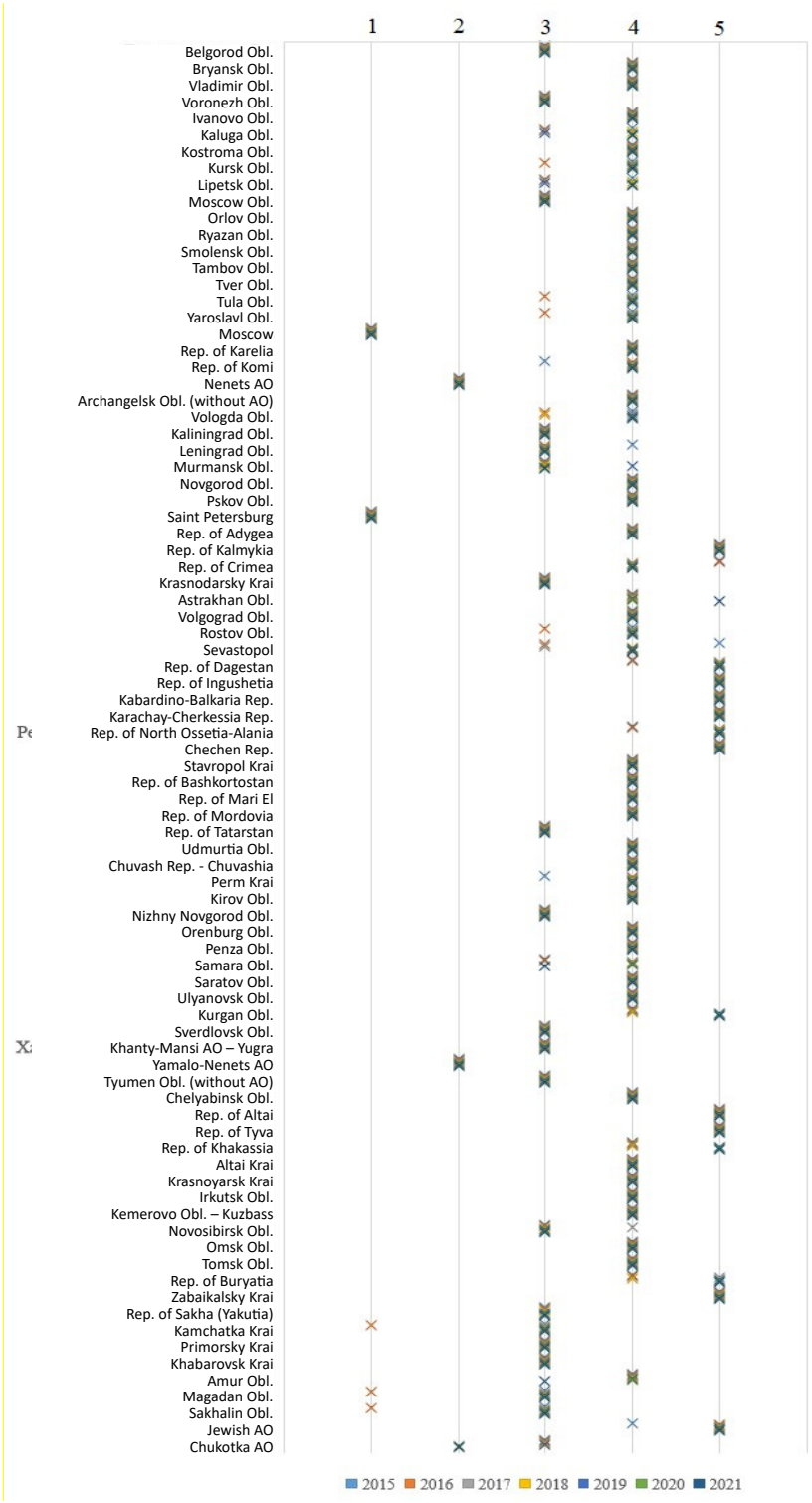
Figure 3. Results of cluster analysis of the RF regions by the development level of SMEs, taking into account the economic development of the territory by the k-means method



Source: own compilation.

In order to visualize the movement of separate Russia's constitute entities in clusters or to determine the constancy of their presence in a certain group for the period from 2015 to 2021, we present a summary of the results of cluster analysis in *Figure 4*.

Figure 4. Results summary of the cluster analysis of the RF regions on the development level of SMEs, taking into account the economic development of territories for 2015–2021



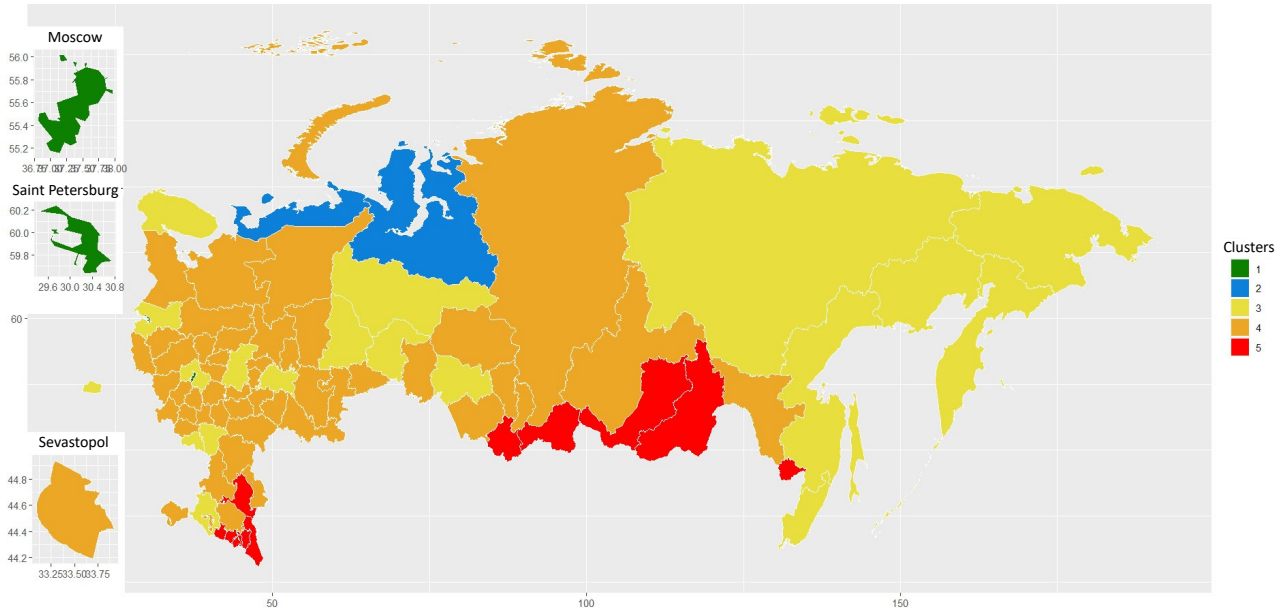
Source: own compilation.

During the study of the regional composition of clusters in dynamics from 2015 to 2021, we revealed the features of the trajectory of movement of territories by groups. In particular, the regions are moving only one cluster up or one cluster down, with the exception of Sevastopol, which, under the influence of significant investment injections in 2014 and 2015 and a significant increase in living standards against a low base, moved from the fifth to the third cluster in 2016, but subsequently consolidated in the fourth cluster. Also, the trajectories of moving regions are, as a rule, within the zone of two clusters. The relocation occurs as a consequence of changes in economic processes in the region and the SMEs development potential. A region with the potential for economic development and the development of SMEs is moving from the most typical cluster on a temporary or permanent basis to a more developed one. And the region that is sensitive to the external impact of negative factors moves to the cluster below. It is necessary to monitor and interpret the repeated transitions of the region from one cluster to another and the consolidation of the territory for two or more periods in the group after the transition, since a one-time movement, as a rule, is not supported by long-term trends in the development of the economic environment and changes in the activities of SMEs, may be caused by the specifics of collecting statistical data in the region or individual emissions.

We carried out the final clustering according to the principle of most years of the region being in a certain group for the analyzed period. The map of Russia shows the geographical location of the clusters obtained (*Fig. 5*).

The first cluster includes regions with a high level of development of SMEs against the background of a high level of economic development characterized by a very high standard of living and consumer spending. The cluster's average indicators of the SMEs development are more than twice as high as the average indicators for the third cluster, which is characterized by an increased level of their functioning. The first cluster includes Moscow and Saint Petersburg.

Figure 5. Map of clusters of Russian regions by the SMEs development level, taking into account the economic development of the territory



Source: own compilation.

A favorable economic environment characterized by very high consumer demand due to the high standard of living, the diversity of the consumer market and the efficient transport and logistics system of its service, the development of the service sector, entertainment, recreation and tourism, the concentration of business and financial activity, acts as a potential for the SMEs development in these regions. As a rule, agglomeration and institutional factors are the key factors ensuring the current position of the territories under consideration in the first cluster.

Two regions have been consistently located in the second cluster throughout the entire period: Nenets and Yamalo-Nenets Autonomous okrugs. This cluster is characterized by an average SMEs development level against the background of a high level of economic development with dominant investments in fixed assets, provided mainly by the development of the fuel and energy complex, and per capita income. The incomes of the population, which are more than twice the average Russian level, on the one hand, form a stable solvent demand, on the other hand, are unsecured by supply in the consumer market. A significant part of the income due to the compressed consumer segment of the market is exported from the territories and spent in large cities and the nearest regional centers: Moscow, Saint Petersburg, Yekaterinburg, Tyumen, etc. High economic potential is not a lever for the development of SMEs and is constrained by the specifics of intraregional differentiation, high costs of doing business, a limited sales market due to the isolation of some municipalities, logistics features, the range of territories, low population density, etc.

The third cluster gathered regions with an increased level of SMEs development against the background of an average level of economic development with pronounced increased living standards and consumer spending. The regions of this cluster are fairly stable in it. The only region with the potential to move to another cluster is the Chukotka Autonomous Okrug. Since 2020, it has been moving to the second cluster due to more dynamic economic growth, an increase in fixed capital investment per capita, an increase in living standards while reducing the growth rate of key indicators of the functioning of SMEs relative to other regions of this group. The position of the regions in the third cluster as a whole is provided by resource, institutional, geographical factors. Basically, the position is formed under the influence of the effects of interregional interaction, favorable geographical location and wealth of natural resources of individual regions, human capital, developed infrastructure and institutions. A feature of this cluster is also the determination of SME development by high solvent demand against the background of a high standard of living.

The fourth cluster is formed by regions with an average level of development of SMEs against the background of an average level of economic development. In general, they also differ in the stability of being in a group. Nevertheless, there are regions in this cluster that have been in other groups for two or more years. For example, the Republic of Crimea, which moved in 2017 from the fifth cluster directly to the fourth, and Sevastopol, which in 2016 moved from the fifth cluster immediately to the third, but, having failed to maintain the set growth rates of the indicators under consideration, in 2018 found itself in the fourth cluster, in which it gained a foothold. The transition was ensured by high growth rates of key indicators of economic development and SMEs development as a result of the implementation of programs for the development of these territories and the formation of a free economic zone, as a result – a significant increase in investment in fixed assets, a decrease in inflation, an increase in living standards and the activation of entrepreneurial initiatives.

Also, in the fourth cluster there are regions characterized by instability and sensitivity to changes. In particular, the Kurgan Oblast and the Republic of Khakassia have been classified in the fifth cluster since 2019. The transition was primarily due to a decrease in per capita income with a simultaneous increase in inflation, which caused a reduction in effective demand and affected the reduction in the number of SMEs and employees in the sector per capita. The statistics of the following years will show whether the movement of these regions will be final or a temporary deterioration of the situation. Based on the chosen principle of assigning a region to a particular cluster, they remain in the fourth cluster for the time being.

In the fifth cluster, which includes regions with a low level of development of SMEs and a low level of economic development, there are almost all subjects of the North Caucasus Federal District (except Stavropol Krai), as well as the republics of Kalmykia, Altai, Tyva, Buryatia, Zabaikalsky Krai, the Jewish Autonomous Oblast. The entry of most regions into this cluster is due to the low level of investment development, low rates of economic growth, an unfavorable institutional environment, a high level of informal employment, and a weak level of entrepreneurship development.

Table 3 presents the characteristics of the final clusters in more detail.

The results obtained based on the results of the cluster analysis generally confirm the assumption that the economic environment acts as a driver or forms constraints on the development of SMEs. The most significant is the first cluster, which accounts for 26% of all registered SMEs and almost 32% of turnover, while it is represented by only two regions. The attractiveness of the environment, the high level of business activity, the availability of resources for development, developed institutions are the key determinants that stimulate the development

Table 3. Clusters of regions according to the development level of SMEs, taking into account the economic development of the territory

no	Cluster characteristics	Regions included in the cluster	Performance indicators of SMEs in 2021		
			% of enterprises	% of turnover	Turnover per organization, million rubles
1.	High level of SMEs development against the background of a high level of the region's economic development characterized by very high living standards and consumer spending levels	Moscow, Saint Petersburg	26.25	32.20	36.72
2.	Average level of SMEs development against the background of high level of economic development of the region	Nenets Autonomous Okrug, Yamalo-Nenets Autonomous Okrug	0.21	0.23	32.28
3.	Higher level of SMEs development against the background of an average level of economic development with pronounced higher standards of living and consumer spending	Belgorod Oblast, Voronezh Oblast, Moscow Oblast, Kaliningrad Oblast, Leningrad Oblast, Murmansk Oblast, Krasnodar Krai, Republic of Tatarstan, Nizhny Novgorod Oblast, Sverdlovsk Oblast, Khanty-Mansi Autonomous Okrug – Yugra, Tyumen Oblast (without AO), Novosibirsk Oblast, Republic of Sakha (Yakutia), Kamchatka Krai, Primorsky Krai, Khabarovsk Krai, Magadan Oblast, Sakhalin Oblast, Chukotka Autonomous Okrug	31.11	31.48	30.29

End of Table 3

no	Cluster characteristics	Regions included in the cluster	Performance indicators of SMEs in 2021		
			% of enterprises	% of turnover	Turnover per organization, million rubles
4.	Average level of development of SMEs against the average level of economic development of the region	Bryansk Oblast, Vladimir Oblast, Ivanovo Oblast, Kaluga Oblast, Kostroma Oblast, Kursk Oblast, Lipetsk Oblast, Orel Oblast, Ryazan Oblast, Smolensk Oblast, Tambov Oblast, Tver Oblast, Tula Oblast, Yaroslavl Oblast, Republic of Karelia, Komi Republic, Arkhangelsk Oblast (without AO), Vologda Oblast, Novgorod Oblast, Pskov Oblast, Republic of Adygea, Republic of Crimea, Astrakhan Oblast, Volgograd Oblast, Rostov Oblast, Sevastopol city, Stavropol Krai, Republic of Bashkortostan, Republic of Mari El, Republic of Mordovia, Udmurt Republic, Chuvash Republic, Perm Krai, Kirov Oblast, Orenburg Oblast, Penza Oblast, Samara Oblast, Saratov Oblast, Ulyanovsk Oblast, Kurgan Oblast, Chelyabinsk Oblast, Republic of Khakassia, Altai Krai, Krasnoyarsk Krai, Irkutsk Oblast, Kemerovo Oblast – Kuzbass, Omsk Oblast, Tomsk Oblast, Amur Oblast	40.02	34.68	25.94
5.	Low level of development of SMEs against the background of low level of economic development of the region	Republic of Kalmykia, Republic of Dagestan, Republic of Ingushetia, Republic of Kabardino-Balkaria, Republic of Karachay-Cherkessia, Republic of North Ossetia-Alania, Chechen Republic, Republic of Altai, Republic of Tyva, Republic of Buryatia, Zabaikalsky Krai, Jewish Autonomous Oblast	2.41	1.41	17.51

Source: own compilation based on the results of cluster analysis, calculations of indicators are based on the Federal State Statistics Service data (https://rosstat.gov.ru/folder/210/document/13223) and the Unified Register of SMEs of the Federal Tax Service (https://ofd.nalog.ru/index.html).

of entrepreneurship in these regions. At the same time, the unfavorable economic environment determines the low level of development of SMEs. The fifth cluster is represented by twelve regions, which account for only 2.41% of registered SMEs, 1.41% of their turnover, and one organization has the smallest turnover of all clusters (17.51 million rubles).

Discussion

In the paper, we proposed an approach to determine the parameters for conducting a cluster analysis of the development of SMEs, based on the use of not only indicators of the company's development, but also indicators of the environment in which the company operates. The contribution of this study to the development of the methodology of SMEs analysis is the use of the k-means clustering method to take into account the indicators of economic development of the territory and the development of SMEs in the classification together.

To carry out cluster analysis, we selected the key indicators of the region's economic development, which form the external economic environment of the functioning of SMEs. The results obtained do not contradict the conclusions of modern research and complement them, thereby developing ideas about the influence of the environment and individual determinants on the development of SMEs.

Among the key indicators that determine the economic environment of functioning and affect the SMEs development, researchers highlight investment development and economic growth, unemployment and inflation, and living standards. Investments in fixed assets have an impact on regional economic development and the SMEs growth turnover (Pinkovetskaya, 2018; Gherghina et al., 2020). In territories with a higher level of GDP (GRP) per capita, higher production scales of SMEs are recorded (Golikova, Kuznetsov, 2017), real gross domestic product per capita positively affects the growth of SMEs (Tambunan, 2008) and economic growth is a determinant of increasing the productivity of small and medium-sized enterprises (Surya et al., 2021). Researchers have repeatedly raised the issue of the impact of unemployment and its duration on entrepreneurial activity (Tarunina, Mavrina, 2015) and the creation of new firms (Storey, 1991; Mazzarol et al., 1999). The impact of inflation on the development of entrepreneurship is also in the focus of modern research (Bekeris, 2012; Ipinnaiye et al., 2017).

Economists also note that to characterize the state of the economy, it is important to take into account the income and consumption of the population (Kuznetsova, 2021). The standard of living has a direct impact on the SMEs development. High incomes ensure the availability of capital and consumer demand, which are factors of entrepreneurship development (Kremin, Rossoshansky, 2020), the compression of which negatively affects the number of SMEs (Zemtsov, Mikhailov, 2021). The economic environment is important for the development and growth of enterprises, as well as the market, driven primarily by real incomes per capita (Tambunan, 2009). A reduction in income and an increase in poverty entail negative economic consequences, which manifest themselves in a decrease in the purchasing power of the population and a change in the structure of demand toward a lower price segment, negatively affect the business activity of SMEs in the economy (Kelarev, 2021).

The questions raised in the works of researchers about the impact of macroeconomic indicators on the development of SMEs are significant for understanding the features of the functioning of SMEs in Russia's regions, characterized by uneven and high degree of differentiation of economic development. The obtained clustering results confirm the assumption that it is the economic environment determined by the set of determinants under consideration that acts as either a driver or a limiter of the SMEs development. In economically depressed regions, the development of entrepreneurship is at a low level. In economically developed regions, with a high standard of living, SMEs are characterized by an increased development level.

The presented study has limitations that form opportunities for future research. First of all, we set the task to study the grouping of regions by the SMEs development level against the background of the regions' economic development. But the resulting clusters contain regions with different social, geographical, technological, institutional and other profiles, indicators of which can be included in the analysis in order to identify additional features of the development of SMEs and work out a more targeted policy to improve the effectiveness of their activities. Also, in the work, we use secondary data for cluster analysis, which assume a limited number of variables collected by statistical bodies, and thereby the impossibility of including comprehensive indicators of the effectiveness and sustainability of the functioning of SMEs in the model.

In addition, the development of the results of the conducted research may be in the plane of using other clustering algorithms or a combination of them for comparative characteristics of the obtained

values. It is also possible to apply the research results for subsequent correlation and regression analysis within individual clusters in order to identify the determinants of the development of SMEs.

Conclusion

In the course of the research, we carried out the clustering of regions using the k-means method. For clustering, we used the Federal State Statistics Service data reflecting the development of SMEs and the economic development of 85 Russia's regions from 2015 to 2021. As indicators characterizing the economic development of the region and influencing the development of entrepreneurship, we took into account investments in fixed assets per capita, the share of investments aimed at reconstruction and modernization in the total volume of investments in fixed assets, gross regional product per capita, indices of the physical volume of gross regional product per capita, the unemployment rate, average duration of job search by the unemployed, average per capita money income, the ratio of the average per capita money income to the subsistence minimum level, the number of people with money incomes below the subsistence minimum level, consumer spending on average per capita, consumer price index. To characterize the SMEs activities, we selected the following indicators: the number of SME enterprises per 1,000 people of the population, the turnover of small and medium-sized enterprises per capita, the net financial result of small and medium-sized enterprises per employee, the number of employees of small and medium-sized enterprises per capita.

To determine the number of clusters and obtain more reliable results, we simultaneously used the Ward method hierarchical clustering approach and the "elbow method". We have found that the optimal number is 5 clusters. The conducted nonhierarchical cluster analysis by the k-means method allowed obtaining the following results. The first cluster includes regions with a high level of development of SMEs against the background of a high level of economic development of the territory. The second cluster is regions with an average level of development of SMEs against the background of a high level of economic development of the territory. The third cluster is regions with an increased level of SMEs development against the background of an average level of economic development with pronounced increased living standards and consumer spending. The fourth is regions with an average level of development of SMEs against the background of an average level of economic development of the territory. The fifth cluster is regions with a low level of development of SMEs against the background of a low level of economic development of the territory. In general, it is confirmed that the economic environment of functioning determines the level of development of SMEs. At the same time, there are special regions, such as Nenets and Yamalo-Nenets Autonomous okrugs, in which, despite a very high level of economic development, the performance indicators of SMEs are at an average level.

We also built a map of the final clusters, which helps to visually see their distribution across Russia's territory, therefore, visualize the spatial features of the development of SMEs against the background of the economic development of territories and thereby take them into account in future studies, for example, when building spatial econometrics models.

The paper proposed a dynamic approach to the study of changes in the composition of clusters. The analysis of the movement of regions in clusters over the seven years of the analyzed period allowed determining the trajectories of their movement, stability or instability of the location of individual territories in the cluster. A feature of the trajectories was the movement only within the boundaries of the two clusters. Temporary or permanent relocation to a higher cluster is observed in regions with the potential for the development

of SMEs against the background of improving indicators of economic development of the territory, and regions sensitive to negative changes in the external environment move to the cluster below. The transition of regions to higher clusters can be ensured not only due to the intensification of economic development, taking into account the individual characteristics of a particular territory and maintaining high dynamics of indicators, but also by eliminating the limitations of the economic environment for the development of SMEs. The existing limitations of effective demand in the regions of the fourth cluster, which hinder the development of SMEs, can be overcome through its stimulation by improving the standard of living, the implementation of projects in the tourism and entertainment spheres to attract citizens from other regions, the development of the retail market. It is also possible to shift the focus to measures to support SMEs in priority areas for each region, which, on the one hand, will attract financial resources for development, on the other hand, will reduce costs and the cost of final products and services, thereby stimulating consumer demand. For example, it can be subsidizing loans and leasing agreements, expanding subsidies for agribusiness, etc. For the second cluster, the key to improving the effectiveness and level of activity of SMEs can be the expansion of the sales market by developing transport infrastructure and improving logistics, improving the quality and expanding the range of products and services, including leisure and household, the development of services aimed at servicing large businesses, by transferring non-core areas to SMEs and the implementation of large infrastructure projects in the fuel and energy sector.

The obtained results contribute to the development of the methodology of analysis of SMEs through the use of cluster analysis and can be used in further research to study in more depth the reasons for the relocation of regions to other clusters. Such an analysis, supplemented by a profile of regions reflecting distinctive characteristics, strengths and weaknesses, can be used to develop point-based and differentiated management decisions aimed at the formation and implementation of state policy to enhance the development and efficiency of SMEs, taking into account the economic environment of their activities.

References

Ayyagari M., Beck T., Demirguc-Kunt A. (2007). Small and medium enterprises across the globe. *Small Business Economics*, 29, 415–434. DOI: 10.1007/s11187-006-9002-5

Barinova V.A., Gladkii A.S., Demidova K.V. et al. (2022). *Malyi i srednii biznes v regionakh Rossii: trendy, draivery i antikrizisnaya politika: Natsiona'nyi doklad* [Small and Medium-Sized Business in Russian Regions: Trends, Drivers and Anti-crisis Policy: National Report]. Moscow: Rossiiskaya akademiya narodnogo khozyaistva i gosudarstvennoi sluzhby pri Prezidente Rossiiskoi Federatsii.

Bekeris R. (2012). The impact of macroeconomic indicators upon SME's profitability. *Ekonomika*, 91(3), 117–128. DOI: 10.15388/Ekon.2012.0.883

Božić L., Rajh E. (2016). The factors constraining innovation performance of SMEs in Croatia. *Economic Research-Ekonomska Istraživanja*, 29(1), 314–324. DOI: 10.1080/1331677X.2016.1168040

Corak M., Heisz A. (1996). Alternative measures of the average duration of unemployment. *Review of Income and Wealth*, 42, 63–74. DOI: 10.1111/j.1475-4991.1996.tb00146.x

Cui M. (2020). Introduction to the k-means clustering algorithm based on the elbow method. *Geoscience and Remote Sensing*, 3, 9–16. DOI: 10.23977/geors.2020.030102

Filonova E.S., Bukreeva Yu.V. (2013). Analysis of the situation in central federal district regions based on small- and medium-business companies' performance. *Vestnik Finansovogo universiteta=Bulletin of the Financial University*, 6(78), 35–47 (in Russian).

Genc E., Dayan M., Genc O.F. (2019). The impact of SME internationalization on innovation: The mediating role of market and entrepreneurial orientation. *Industrial Marketing Management*, 82, 253–264. DOI: 10.1016/j.indmarman.2019.01.008

Gherghina Ș.C., Botezatu M.A., Hosszu A., Simionescu L.N. (2020). Small and medium-sized enterprises (SMEs): The engine of economic growth through investments and innovation. *Sustainability*, 12, 347. DOI: 10.3390/su12010347

Golikova V., Kuznetsov B. (2017). Suboptimal size: Factors preventing the growth of Russian small and medium-sized enterprises. *Foresight and STI Governance*, 11(3), 83–93. DOI: 10.17323/2500-2597.2017.3.83.93

Haddoud M.Y., Beynon M.J., Jones P., Newbery R. (2018). SMEs' export propensity in North Africa: A fuzzy c-means cluster analysis. *Journal of Small Business and Enterprise Development*, 25(5), 769–790. DOI: 10.1108/JSBED-02-2017-0077

Hagen B., Zucchella A., Cerchiello P., De Giovanni N. (2012). International strategy and performance – clustering strategic types of SMEs. *International Business Review*, 21(3), 369–382. DOI: 10.1016/j.ibusrev.2011.04.002

Ipinnaiye O., Dineen D., Lenihan H. (2017). Drivers of SME performance: A holistic and multivariate approach. *Small Business Economics,* 48, 883–911. DOI: 10.1007/s11187-016-9819-5

Jami Pour M., Asarian M. (2019). Strategic orientations, knowledge management (KM) and business performance: An exploratory study in SMEs using clustering analysis. *Kybernetes*, 48(9), 1942–1964. DOI: 10.1108/K-05-2018-0277

Kelarev V.V. (2021). Poverty as a phenomenon of the Russian economy and its negative impact on the practical development of small business in the country. *Gosudarstvennoe i munitsipal'noe upravlenie. Uchenye zapiski= State and Municipal Management. Scientific Notes*, 4, 86–92. DOI: 10.22394/2079-1690-2021-1-4-86-92 (in Russian).

Kremin A.E., Rossoshanskii A.I. (2020). Small business and living standards of the population: Mutual influence and management issues. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 13(2), 214–229. DOI: 10.15838/esc.2020.2.68.14 (in Russian).

Kuznetsov Yu.A., Perova V.I. (2020). Dynamics of small business development in Russia in the context of harmonization of state and business strategies. *Vestnik Nizhegorodskogo universiteta im. N.I. Lobachevskogo. Seriya: Sotsial'nye nauki=Vestnik of Lobachevsky State University of Nizhni Novgorod*, 1(57), 28–36 (in Russian).

Kuznetsova O.V. (2021) The economy of Russian regions in a pandemic: Do resilience factors work? *Regional'nye issledovaniya*, 3(73), 76–87. DOI: 10.5922/1994-5280-2021-3-7 (in Russian).

Leitne K., Guldenberg S. (2010). Generic strategies and firm performance in SMEs: A longitudinal study of Austrian SMEs. *Small Business Economy,* 35, 169–189. DOI: 10.1007/s11187-009-9239-x

Levushkina S.V. (2015). Systematic approach to the implementation chronotopic cluster analysis of development of small and medium business. *Fundamental'nye issledovaniya=Fundamental Researc*h, 5–4, 753–757 (in Russian).

Li Y., Huang J., Tsai M. (2009). Entrepreneurial orientation and firm performance: The role of knowledge creation process. *Industrial Marketing Management*, 38, 440–449. DOI: 10.1016/j.indmarman.2008.02.004

Lorentz H., Hilmola O.-P., Malmsten J., Srai J.S. (2016). Cluster analysis application for understanding SME manufacturing strategies. *Expert Systems with Applications*, 66, 176–188. DOI: 10.1016/j.eswa.2016.09.016

Luk'yanova A.L., Oshchepkov A.Yu. (2007). Functioning of regional labor markets: wages and unemployment. In: *Sotsial'naya politika: realii XXI veka. Vyp. 3* [Social Policy: Realities of the 21st century. Volume 3.]. Moscow: Nezavisimyi institut sotsial'noi politiki (in Russian).

MacQueen J.B. (1967). Some methods for classification and analysis of multivariate observations. In: *Proceedings of 5-th Berkeley Symposium on Mathematical Statistics and Probability*. Berkeley: University of California Press.

Mazzarol T., Volery T., Doss N., Thein V. (1999). Factors influencing small business start-ups: A comparison with previous research. *International Journal of Entrepreneurial Behavior & Research*, 5(2), 48–63. DOI: 10.1108/13552559910274499

Nanavyan A.M. (2012). Estimation of unemployment flows and long-term unemployment on the Russian labor market. *Natsional'nye interesy: prioritety i bezopasnost'=National Interests: Priority and Security*, 42, 44–50 (in Russian).

Obraztsova O.I., Chepurenko A.Yu. (2020). Entrepreneurial activity in Russia and its cross-regional differences. *Zhurnal Novoi ekonomicheskoi assotsiatsii=Journal of the New Economic Association*, 2(46), 198–210. DOI: 10.31737/2221-2264-2020-46-2-12 (in Russian).

Obraztsova O.I., Popovskaya E.V. (2017). An essay of the multidimensional statistical methods to characterize the entrepreneurial context in Russian regions. *Sotsiologicheskie issledovaniya=Sociological Studies*, 4(396), 93–106 (in Russian).

Pinkovetskaya Yu.S. (2014). Small and medium entrepreneurship in the Russian Federation: Regularities of spatial distribution. *Vestnik UrFU. Seriya: Ekonomika i upravlenie*, 1, 27–36 (in Russian).

Pinkovetskaya Yu.S. (2018). Factors influencing small and medium enterprises turnover: Evaluation of Russian regions data. *Ars Administrandi. Iskusstvo upravleniya=Ars Administrandi. The Art of Governance*, 10(2), 199–216. DOI: 10.17072/2218-9173-2018-2-199-216 (in Russian).

Punj G., Stewart D.W. (1983). Cluster analysis in marketing research: Review and suggestions for application. *Journal of Marketing Research*, 20(2), 134–148. DOI: 10.1177/002224378302000204

Shpak A.S., Shatalova A.S., Sal'nikov K.N. (2019) Evaluation of small business development in the Far Eastern federal district. *Fundamental'nye issledovaniya=Fundamental Research*, 12-1, 211–217. DOI: 10.17513/fr.42650 (in Russian).

Sibirskaya E.V., Ivanov H., Sheremet N.G. (2016). Cluster analysis of small and middle business in the regions of Russia. *Srednerusskii vestnik obshchestvennykh nauk=Central Russian Journal of Social Sciences*, 4, 127–135. DOI: 10.12737/21327 (in Russian).

Smirnov V.V. (2021). The content analysis of regional entrepreneurship. *Natsional'nye interesy: prioritety i bezopasnost'=National Interests: Priorities and Security*, 17, 3(396), 556–584. DOI: 10.24891/ni.17.3.556 (in Russian).

Storey D.J. (1991). The birth of new firms? Does unemployment matter? A review of the evidence. *Small Business Economics*, 3(3), 167–178. DOI: 10.1007/bf00400022

Sukhanova E.I., Shirnaeva S.Yu., Konstantinova E.O. (2019). Statistical analysis and modeling of the influence of socio-economic factors on the level of small business development in the regions of the Russian Federation. *Fundamental'nye issledovaniya=Fundamental Research*, 5, 126–132 (in Russian).

Sun L., Chen G., Xiong H., Guo C. (2017). Cluster analysis in data-driven management and decisions. *Journal of Management Science and Engineering,* 2(4), 227–251. DOI: 10.3724/SP.J.1383.204011

Surya B., Menne F., Sabhan H. et al. (2021). Economic growth, increasing productivity of SMEs, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity,* 7(1), 20. DOI: 10.3390/joitmc7010020

Tambunan T. (2008). SME development, economic growth, and government intervention in a developing country: The Indonesian story. *Journal of International Entrepreneurship*, 6, 147–167. DOI: 10.1007/s10843-008-0025-7

Tambunan T.T.H. (2009). SME development pattern: A theoretical consideration. In: *SMEs in Asian Developing Countries.* London: Palgrave Macmillan. DOI: 10.1057/9780230250949_2

Tarunina E.N., Mavrina E.O. (2015). Level of economic development as a factor of early entrepreneurial activity. *Vestnik Nizhegorodskogo universiteta im. N.I. Lobachevskogo. Seriya: Sotsial'nye nauki=Vestnik of Lobachevsky State University of Nizhni Novgorod. Series: Social Sciences*, 2(38), 9–17 (in Russian).

Toomsalu L., Tolmacheva S., Vlasov A., Chernova V. (2019). Determinants of innovations in small and medium enterprises: A European and international experience. *Terra Economicus*, 17(2), 112–123. DOI: 10.23683/2073-6606-2019-17-2-112-123

Ward J.H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association,* 58(301), 236–244. DOI: 10.1080/01621459.1963.10500845

Yuan C., Yang H. (2019). Research on k-value selection method of k-means clustering algorithm. *J – Multidisciplinary Scientific Journal,* 2(2), 226–235. DOI: 10.3390/j2020016

Zemtsov S.P. (2016). Typology of Russian regions for development purposes of small and medium-size business. *Gosudarstvennoe i munitsipal'noe upravlenie. Uchenye zapiski=State and Municipal Management. Scientific Notes*, 4, 99–102 (in Russian).

Zemtsov S.P. (2020). Institutes, entrepreneurship, and regional development in Russia. *Zhurnal Novoi ekonomicheskoi assotsiatsii=Journal of the New Economic Association*, 46(2), 168–180. DOI: 10.31737/2221-2264-2020-46-2-9 (in Russian).

Zemtsov S.P., Mikhailov A.A. (2021). Trends and factors of development of small and medium-sized businesses in Russian regions during corona crisis. *Ekonomicheskoe razvitie Rossii=Russian Economic Development*, 28(4), 34–45 (in Russian).

Zhou B. (2016). Lean principles, practices, and impacts: A study on small and medium-sized enterprises (SMEs). *Annals of Operations Research,* 241, 457–474. DOI: 10.1007/s10479-012-1177-3

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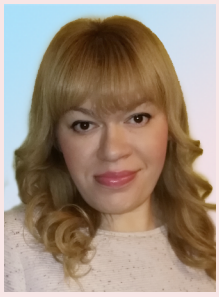
Features of Participation of the Population of Cities of the European North of Russia in Public and Municipal Administration



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Abstract. Citizens' participation in managing the country's development contributes to the formation of civil society and acts as a key element of democracy. In Russia, where three-quarters of the population are urban residents, it is especially important to study these issues in relation to cities, so as to understand the processes taking place in society and work out effective strategies for its development. The aim of the work is to consider ways in which residents of cities in the European North of Russia participate in state and municipal administration and to identify its features in settlements of different sizes. Based on the data of the Central Election Commission of the Russian Federation we analyze the turnout of residents of 68 cities of the European North of Russia for the presidential election of the Russian Federation (2018) and the election to the State Duma of the Federal Assembly of the Russian Federation (2021). We also assess the level of voter support provided to President Vladimir Putin and the United Russia party. It is revealed that the electoral activity of residents is determined to a greater extent by the peculiarities of the structure of the city's economy rather than the size of the city. Based on the analysis of the results of voting for the choice of urban improvement objects, it was found that residents of sparsely populated cities are more motivated and involved in these processes. We also find out that territorial public self-government is most actively used in small, rather than large, cities. In order to assess the informal mechanisms of citizens' participation, we analyze the availability of official profiles of local self-government bodies on VKontakte social media and the number of their subscribers, as well as data on the number of participants

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in informal urban communities. We have revealed that this method of communication with the authorities is mostly used by residents of small settlements. Scientific significance of the study lies in determining the features of dissemination of various mechanisms of civic participation, depending on the type of city. Practical significance lies in the possibility of using our findings by the authorities in improving the policy of involving citizens in management processes.

Key words: cities, civic participation, political participation of the population, local self-government, election, territorial self-government, European North of Russia.

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Introduction

In December 2023, Russia will celebrate the 30th anniversary of the adoption by popular vote of the country's highest normative legal act – the Constitution of the Russian Federation[1]. This document establishes the foundations of the constitutional system of the state, according to which "the people exercise their power directly, as well as through state authorities and local self-government bodies". A referendum and free elections are the highest form of expression of the power of the people. Also, Russian citizens have the right to participate in the management of state affairs both personally and through their representatives; to send individual and collective appeals to state authorities and local self-government. In any democratic society, the active participation of the population contributes to the formation of civil society as the main condition of the rule of law and an important tool for building a mutual dialogue between citizens and authorities (Kudashova, Zhukova, 2021).

In Russia, the importance of involving the population in the processes of managing the development of territories is noted at the highest level. In April 2023, at a meeting of the Council for the Development of Local Self-Government, Russian President Vladimir Putin stressed the importance of direct participation of residents in decision-making[2]. In the Fundamentals of the State Policy of Regional Development of the Russian Federation for the period up to 2025, the involvement of citizens to participate in the governance of the country, increasing their civic responsibility in solving issues of socio-economic development of territories is indicated as one of the tools for improving the efficiency of the work of state authorities and local self-government.

The effectiveness of the work of public authorities and local self-government is also largely ensured by the presence of a developed system of social communications with citizens, focused on the mutual exchange of information on possible ways to solve urgent problems. For example, the authorities, unlike the residents themselves, do not always manage to fully assess the existing difficulties in the work of transport or housing and communal infrastructure. An equally important issue is the choice of locations for the construction of social or cultural and leisure facilities. As practice shows[3], making such decisions without taking into account the opinions of citizens can lead to conflict situations and even protests.

[1] The Constitution of the Russian Federation was adopted by popular vote on December 12, 1993, with amendments approved during the all-Russian vote on July 1, 2020.

[2] Vladimir Putin held a meeting of the Presidential Council for the Development of Local Self-Government via videoconference. Available at: http://www.kremlin.ru/events/president/news/70959

[3] Construction protests: What did Russians manage to defend? Available at: https://spb.cian.ru/stati-stroitelnye-protesty-chto-udalos-otstojat-rossijanam-301245/

The Russian Federation is characterized by a fairly high level of urbanization: almost three-quarters of its population lives in urban settlements. In many ways, they determine the trajectory of socio-economic development in Russian regions. This is especially true for the country's Northern territories, a specific feature of which is the concentration of population and production mainly in cities.

In the scientific literature devoted to the study of civic participation, the problems of involving the population in solving issues of territorial development are considered mainly on the examples of large and largest cities and in much rarer cases – medium and small cities. At the same time, there are very few studies in Russian science that address the peculiarities of citizen involvement in cities of various types, depending on the number of people or the specifics of socio-economic development.

Taking into account the above, the aim of the work was to study the practice of participation of residents of the cities of the European North of Russia (ENR) in state and municipal administration and to identify its features in settlements of different sizes. In order to achieve this goal, the following tasks have been solved: a review of modern research devoted to the study of forms and instruments of public participation has been conducted; indicators of electoral activity of residents of the cities of the ENR in the RF presidential elections and elections to the State Duma of the Federal Assembly of the Russian Federation have been analyzed; the analysis of the number and proportion of the population of the cities of the ESR who took part in the voting on the choice of improvement facilities within the framework of the federal project "Formation of a comfortable urban environment" is presented; the activity of citizens in terms of using such a tool as territorial public self-government (TPSG) is considered; the number of subscribers to the official pages of local self-government of the cities of the ENR on the social media VKontakte and unofficial urban communities was analyzed.

Scientific novelty of the work consists in analyzing both formal (elections of the President of the Russian Federation and to the State Duma of the Federal Assembly, citizens voting for the choice of objects of landscaping, territorial public self-government) and informal (social media of local self-government bodies and informal urban communities) mechanisms of public participation in state and municipal government, as well as identifying features of their distribution depending on the size of the city.

Research materials and methods

The methodological basis of the research includes the works of domestic and foreign scientists in the field of regional economy, state and municipal administration, institutional foundations of the formation of civil society. In the process of work, methods of synthesis and generalization, monographic, statistical, qualitative and quantitative data processing were used. The main sources of information were the official data of Rosstat, including databases of indicators of municipalities; information contained on the official websites of local self-government bodies of the cities within the ENR.

The general logic of the study was to consider not only formal, i.e. legislatively fixed, mechanisms for the participation of citizens, but also informal or unregulated ways of showing civic activity. At the same time, a big problem is the almost complete absence of any statistical data in the context of municipalities that allow making such an assessment. Annual reports on the activities of heads of cities or local administrations do not always have a section dedicated to the participation of residents in the development of the city.

That is why, within the framework of this study, the mechanisms of civic engagement were taken as a basis, the assessment of which could be carried out in all 68 cities of the European North of Russia. Among the official forms of citizens' participation are the elections of the President of the Russian Federation (March 18, 2018) and the elections

to the State Duma of the Federal Assembly of the eighth convocation (September 19, 2021). Data from the Central Election Commission of the Russian Federation (CEC of the Russian Federation) served as materials for analysis about the turnout at the elections and the share of voters who voted for the current President of the Russian Federation Vladimir Putin and the United Russia party.

In addition to studying the electoral activity of the population, an analysis of the practice of citizens' participation in voting on the choice of public spaces for landscaping was carried out within the framework of the federal project "Formation of a comfortable urban environment" of the national project "Housing and urban environment".

The experience of using such a mechanism of civic participation as territorial local self-government (TLSG) is also considered. The main source of information in this case was the information provided on the official websites of local self-government bodies of cities, as well as Associations of municipalities of constituent entities of the ENR.

To assess the informal mechanisms of participation of residents in all cities of the European Union, an analysis of the availability of official pages of local self-government bodies on the social media VKontakte and the number of their subscribers was carried out. Data on the number of participants of informal urban communities on the social media were also analyzed (if there are several of them, the largest group was taken).

Theoretical aspects of the study

Many works of both regionalist scientists and sociologists are devoted to the study of issues of population participation in the development of settlements. At the same time, there is currently no consensus in the academic community regarding the definition of the very concept of "public participation". Mainly in domestic and foreign literature, modern authors consider social, civil, and political participation. These concepts are quite closely interrelated and are largely determined by the scale of issues in which citizens participate.

In one of the studies[4], the authors identify four levels of social activity of the population: 1) neighborhood, 2) social (interpersonal) participation, 3) civic participation, 4) political participation. If in the first case people are ready to participate in solving issues of a rather domestic nature, and the ways of expressing activity are more informal, then in the latter case we are already talking about formalized participation in political life through such forms as elections or citizens' meetings. The basic directions of social or interpersonal participation are volunteering and charity; activity in solving citywide problems; cultural, sports, professional associations of citizens; protection of the interests of individual social groups (Ukhanova, 2021).

Researchers (Nikovskaya, Skalaban, 2017) consider civic participation as "a process by which citizens directly or indirectly influence what decisions are made by authorities, affecting public interests". At the same time, the authors identify a number of key characteristics of civic participation, including the presence of motivation, voluntariness and awareness of the actions of participants.

In the scientific literature, there are several levels of involvement of residents in management processes according to the degree of increase in the intensity of interaction between the authorities and the population: informing, consulting, involvement, delegation and partnership (Koroleva, Kournikova, 2019).

According to the level of influence of the population on management decisions, three main models can be distinguished:

– imitation or lack of participation;
– nominal participation;
– real influence of citizens (Revyakin, 2017).

For a long time in Russia, only the practices of informing and consulting, which relate to the nominal participation of the population, were mainly used. In recent years, there has been a

[4] Non-institutional social activity of citizens: Forms of implementation and possible support. Key takeaways based on the results of a comprehensive study. 2018. Available at: https://clck.ru/PkrPg (accessed: February 25, 2020).

gradual transition to more active involvement of citizens in making managerial decisions, but these processes do not always proceed smoothly.

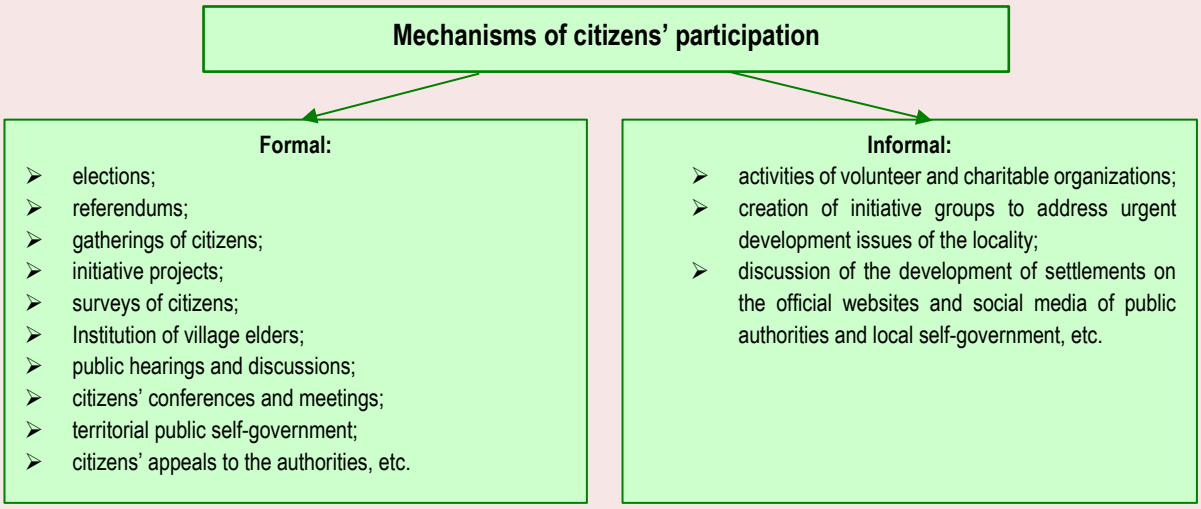
The mechanisms of public participation in state and municipal administration can also be conditionally divided into formal, i.e. legally regulated, and informal, i.e. not fixed from a legal point of view, but playing a significant role in the management processes for the development of territories (*Fig. 1*).

Elections to state or local government bodies are a form of direct democracy and one of the ways of political participation of the population in the management of territorial development, and issues of electoral activity of the population are considered by a large number of researchers (Larichev, 2019; Dementieva, 2020; Nikitina, 2021; Tavares, Carr, 2013; Gökçe-Kızılkaya, Onursal-Beşgül, 2017).

Among the major scientific organizations, the Global Citizenship Observatory (GLOBALCIT) can be distinguished. Scientists of this organization have published a whole set of works devoted to the study of public participation in national and local elections in the European Union (Peltoniemi, 2018; Carvalhais, Oliveira, 2019; Korzec, Pudzianowska, 2021, etc.). There are studies conducted not only in the context of a particular state, but also cross-country comparisons. For example, the work (Hutcheson, Russo, 2021) presents an analysis of voter turnout in municipal elections and elections to the European Parliament in 28 EU countries.

In Asian countries, the issue of public participation in elections to state or local authorities is also very relevant. In particular, the study of the political activity of the population in China is considered in the works (Zhang et al., 2015; Hill, 2020; Martinez-Bravo et al., 2022). Elections in China are fundamentally different from elections in Western democracies, since there is no party competition. However, at present, the Communist Party of China allows competitive elections at the lowest level of government: urban and rural residents have the right to elect their representatives to local committees (Villagers' Committee and Residents' Committee, respectively) (Xi, Wen, 2019). We should note that, since for a long time until the beginning of the 2010s, the rural population prevailed over the urban population in China, the attention of scientists was mainly focused on studying electoral activity in Chinese villages and villages. This was also due to the fact that elections were allowed in cities only in 2000, whereas in rural areas since the late 1980s. Research results show that one of the features of

Figure 1. Formal and informal mechanisms of public participation in state and municipal governance



Source: own compilation.

local elections in China is the high activity of rural residents (Kennedy et al., 2018; Xi, Wen, 2019).

Among the domestic works on the study of electoral activity of citizens, it is possible to single out studies conducted on a regular basis by the Russia Public Opinion Research Center (VCIOM)[5] or the Russian Public Institute of Electoral Law[6].

One of the current issues is the involvement of the population in the processes of strategic management of the development of their settlements. According to Article 13 of Federal Law 172-FZ, dated June 28, 2014 "On strategic planning in the Russian Federation", a public discussion of the documents being developed is envisaged, however, the residents themselves are not among the participants in strategic planning. Unfortunately, in Russian practice, local governments are often not interested in in-depth discussion of the developed draft strategic planning documents and receiving feedback from the local community (Charakhchyan, Bondarenko, 2017). In the vast majority of cases, the population is involved in the strategic planning process only at the stage of strategy approval through a public hearing procedure, which is often formal in nature (Dus, Vlaskina, 2018).

At the same time, it is extremely important at the earliest stages to involve residents in the development of strategies for the socio-economic development of territories, since ultimately the main mission of these documents is to create comfortable living conditions and ensure the well-being of citizens (Marquart, 2017).

One of the forms of attracting the population and taking into account their opinions is sociological surveys on the problems and prospects of the development of the territory of residence. Another tool can be an expert interview with representatives of professional communities whose activities are of great importance for the development of a particular locality.

A significant form of citizens' participation in the management of territorial development is their involvement in budgetary processes at the local level. In the scientific literature of recent years, there has been an increasing number of works devoted to the study of issues of civil or popular budgeting (Đulabić, Jerinić, 2021; Szczepanska et al., 2022; Smoleva, 2021) and crowdfunding (Stiver et al., 2015; Langley et al., 2020; Koniagina et al., 2021; Latysheva, 2020) as forms of public participation in urban development. In the first case, citizens are directly involved in the processes of targeted allocation of public funds. It is the society that determines the urban infrastructure facilities that are necessary to construct for citizens, and which objects should receive funding in the first place. An example of the implementation of this approach in Russia is initiative budgeting within the framework of the "People's budget" project or voting on the choice of public spaces for improvement within the framework of the national project "Housing and urban environment".

Civic crowdfunding is not a full-fledged substitute for conventional municipal budgeting, but rather acts as an additional financial instrument (Mayer, 2016). Crowdfunding platforms allow city residents to participate financially in the creation of infrastructure or cultural facilities that are important to them.

One of the forms of public participation in urban development is territorial public self-government (TPSG), which is also reflected in many scientific papers (Bulakh et al., 2021; Gnezdilova, Oganesyan, 2021; Safarov, 2022; Mikhailov, 2023). Unlike local self-government bodies, the presence of TPSG in a municipality is not mandatory and does not have a legally established list of issues that this institution deals with. The main advantage of TPSG is that residents of even a small territory inside the city (for example, a courtyard or a street) can solve problems in a fairly short time, unlike state authorities or local self-government that require much more time in this regard.

[5] Official website of the Russia Public Opinion Research Center. Available at: https://wciom.ru/tematicheskii-katalog/politics

[6] Website of the Russian Public Institute of Electoral Law. Available at: https://roiip.ru/reports/

An important form of civic participation and a way of interacting with public authorities or local self-government are citizens' appeals, which can be presented in the form of a proposal, statement or complaint. At the same time, in the era of rapid development of the Internet and social media, citizens have more opportunities to communicate with authorities and express their civic position (Frolov, Agurova, 2019). One of the key advantages of digital technologies is also an increase in the speed of reporting information about an existing problem, which means a reduction in the time it takes to solve it.

The topic of the influence of digitalization processes on the activity of the population has been reflected in the works of many modern authors. For example, the study (Ferrucci et al., 2020), based on the analysis of data from Facebook[7] users, analyzes the political activity of U.S. citizens in the online format and the relationship between the frequency of use of the social media and the degree of political involvement. The study (Zagidullin et al., 2021) examines the use of social media as a tool for protest activity of the population in Türkiye.

In general, the literature review allows us to conclude that a fairly large number of works by Russian and foreign authors are devoted to the study of forms and mechanisms of public participation in the development of local territories, in particular cities. At the same time, most authors choose one or more cities as the object of research. At the same time, settlements, as a rule, are either located in the same subject of the Russian Federation, or belong to the same category in terms of population (for example, large cities or million-plus cities). However, the modern urban system is characterized by a variety of different types of cities, respectively, they may differ in the level of activity of residents. The social ties that bind the local community are much less developed in large cities than in small towns (Larichev, 2019), respectively, there may be differences between these types of cities in the use of certain forms of citizen participation in the development of a locality.

In this study, using the example of the European North of Russia as one of the Russian macroregions, an attempt is made to consider the issue of the dissemination of citizen participation practices in cities of different sizes.

Main results of the study

The European North of Russia includes the republics of Komi and Karelia, the Vologda, Murmansk and Arkhangelsk oblasts, including Nenets Autonomous Okrug. The territories under consideration fully meet the criteria for the allocation of regional space, since they are characterized by the presence of well-established economic, infrastructural, socio-cultural intraregional ties, and also differ from other territories by common natural, geographical and climatic conditions, the predominance of the raw materials sector in the economy, the unity of transport and energy infrastructure, low level of population spread, high rates of urbanization (79.8%), exceeding the national average (74.8%).

On the territory of the RF constituent entities under consideration there is a large variety of cities of various types: large (Arkhangelsk, Murmansk, Vologda, Cherepovets), big (Petrozavodsk, Syktyvkar, Severodvinsk), medium (Kotlas, Ukhta, etc.) and small, in a quarter of which the population is less than 10 thousand people (*Tab. 1*).

The choice of the object of research was also due to the fact that cities vary by economic specialization or features of the structure of the economy. In particular, there are cities with a predominance of mining (Vorkuta, Ukhta, Kostomuksha, Olenegorsk, etc.) and manufacturing (Cherepovets, Segezha, Monchegorsk, etc.) industries, tourist cities (Veliky Ustyug, Kirillov, etc.), etc. Many localities are single-industry towns (Novodvinsk, Yemva, Koryazhma, Sokol, etc.) or belong to the category of closed administrative-territorial entities (Zaozersk, Mirny, etc.).

[7] Facebook is owned by Meta, which is recognized as an extremist organization and banned in the Russian Federation.

Table 1. Number of cities in the regions of the European North of Russia / share of the population living in them, in the total population of the RF constituent entity*, %

Region	Population					Total
	250 thousand – 1 million people	100–250 thousand people	50–100 thousand people	10–50 thousand people	less than 10 thousand people	
Republic of Karelia	-	1 / 44.7	-	5 / 19.1	7 / 10.0	13 / 73.8
Komi Republic	-	1 / 30.3	2 / 18.5	5 / 16.3	2 / 2.4	10 / 67.5
Arkhangelsk Oblast (including NAO)	1 / 31	1 / 16.2	1 / 5.8	7 / 18.0	4 / 1.9	14 / 72.9
Vologda Oblast	2 / 54.3	-	-	5 / 8.8	8 / 5.0	15 / 68.1
Murmansk Oblast	1 / 40.6	-	-	11 / 41.2	4 / 4.1	16 / 85.9
Total for ENR entities	4 / 29.4	3 / 15.3	3 / 4.8	33 / 19.0	25 / 4.3	68 / 72.8

* As of January 1, 2023.
Source: own compilation on the basis of Rosstat data: The population of the Russian Federation by municipality. Available at: https://rosstat.gov.ru/compendium/document/13282

At the first stage of our research, we analyzed the political activity of residents of the cities of the ENR on the basis of data from the RF Central Election Commission on the results of the presidential election held in 2018 and the election to the State Duma of the Federal Assembly held in 2021 (*Tab. 2*).

Table 2. Results of the RF presidential election (2018) and the election to the State Duma of the RF Federal Assembly (2021), %

City	Population, people (2023)	RF presidential election (2018)		election to the State Duma of the RF Federal Assembly (2021)*	
		Turnout	Proportion of those who voted for Vladimir Putin	Turnout	Proportion of those who voted for the United Russia party
Petrozavodsk	235793	60.2	71.4	40.5	30.6
Kostomuksha	25928	61.3	77.8	38.8	34.1
Kondopoga	25295	61.8	69.0	44.1	26.7
Segezha	23074	57.3	74.7	35.3	34.6
Sortavala	14787	59.9	75.1	39.9	30.4
Medvezhyegorsk	11737	53.9	69.4	40.3	29.3
Kem	9712	57.4	75.1	43.2	26.1
Pitkyaranta	8094	54.4	71.7	33.3	33.0
Olonets	7631	56.0	73.7	39.5	35.1
Belomorsk	7407	50.5	72.0	36.3	36.1
Pudozh	7207	52.4	72.0	41.1	24.8
Suoyarvi	6819	53.7	68.7	41.0	32.5
Lahdenpohya	5855	55.9	75.2	38.9	30.2
Republic of Karelia	**527880**	**57.1**	**73.0**	**39.6**	**31.7**
Syktyvkar	220042	61.3	68.9	40.3	27.2
Ukhta	78081	61.8	71.1	41.0	28.1
Vorkuta	56389	50.3	74.1	26.6	27.6
Pechora	34383	57.8	72.6	35.8	27.3
Usinsk	31358	62.4	74.2	35.7	28.7
Sosnogorsk	22032	62.1	68.0	41.1	26.8
Inta	19529	50.4	68.5	30.9	31.2
Yemva	10779	59.6	64.8	43.1	28.7
Vuktyl	9198	62.8	70.1	41.7	26.4
Mikun	8401	63.5	69.6	42.2	29.3
Komi Republic	**726434**	**60.4**	**71.4**	**39.5**	**29.4**
Arkhangelsk	298617	57.0	73.7	38.6	31.5
Severodvinsk	156056	64.9	78.3	45.0	27.7
Kotlas	56122	64.4	72.2	41.4	23.6
Novodvinsk	32826	61.6	74.7	38.4	33.2

End of Table 2

City	Population, people (2023)	RF presidential election (2018)		election to the State Duma of the RF Federal Assembly (2021)*	
		Turnout	Proportion of those who voted for Vladimir Putin	Turnout	Proportion of those who voted for the United Russia party
Koryazhma	34002	61.8	70.9	41.0	27.6
Mirny	27174	76.4	82.0	62.0	53.5
Velsk	21406	59.8	69.4	39.2	26.4
Nyandoma	18146	57.3	74.0	39.8	29.2
Onega	16449	54.2	72.8	35.3	31.8
Kargopol	8737	59.4	71.5	40.7	31.1
Shenkursk	4524	54.3	72.6	32.4	33.9
Mezen	2832	62.5	71.1	41.7	31.2
Solvychegodsk	1858	61.5	67.5	46.3	28.5
Arkhangelsk Oblast	**964304**	**59.2**	**75.3**	**41.6**	**32.2**
Naryan-Mar	23579	60.0	71.3	40.4	25.4
Nenets Autonomous Okrug	**41383**	**63.6**	**71.6**	**42.6**	**29.1**
Vologda	311628	66.3	69.7	42.9	30.9
Cherepovets	301040	69.2	73.4	42.0	33.4
Sokol	34298	58.7	73.1	40.3	34.3
Veliky Ustyug	28266	64.6	73.6	45.7	25.7
Gryazovets	14424	64.3	72.5	46.7	33.2
Babaevo	11646	63.6	74.1	43.0	35.4
Vytegra	10292	56.2	71.9	45.2	33.2
Totma	8647	63.3	68.7	48.2	36.2
Kharovsk	8361	59.3	72.0	45.6	36.6
Belozersk	8183	56.8	69.8	43.3	32.2
Ustyuzhna		62.9	71.3	44.8	37.2
Nikolsk	7607	60.3	70.1	44.3	32.4
Kirillov	7069	64.1	70.3	47.0	33.3
Krasavino		63.8	76.5	46.0	37.3
Kadnikov	4022	59.4	74.5	47.0	33.7
Vologda Oblast	**1128782**	**66.1**	**72.4**	**45.5**	**34.3**
Murmansk	267422	64.8	76.9	34.9	28.8
Apatity	48748	68.8	71.2	38.5	30.8
Severomorsk	43394	70.8	79.4	49.1	49.7
Monchegorsk	39477	64.6	76.2	36.7	30.8
Kandalaksha	28438	61.2	74.1	36.9	31.4
Kirovsk	24271	72.1	71.1	38.2	28.4
Olenegorsk	20875	62.6	79.1	39.4	34.4
Polyarny	12154	70.5	77.8	50.5	29.6
Kovdor	15423	62.6	76.3	36.3	29.2
Polyarnye Zori	14078	74.4	72.2	40.3	35.7
Zapolyarny	14231	62.4	75.4	37.5	32.4
Snezhnogorsk	10023	65.5	76.8	34.5	27.7
Gadzhievo		77.8	80.1	53.6	39.8
Kola	8933	60.7	77.0	34.2	32.0
Zaozersk	7760	69.0	80.6	47.2	40.8
Ostrovnoy		63.0	82.7	41.7	34.5
Murmansk Oblast	**658698**	**66.3**	**76.4**	**43.7**	**35.8**
Russian Federation	**146447424**	**67.5**	**76.7**	**51.6**	**49.8**

	Turnout exceeds average values for the RF constituent entity		Proportion of voters exceeds average values for the RF constituent entity

* Results of voting in the federal electoral district (according to party lists).

Source: own compilation on the basis of data from the official website of the Central Election Commission of the Russian Federation. Available at: http://www.cikrf.ru

In the RF presidential election, residents of ENR cities showed more activity than in the election of State Duma deputies, which corresponds to the situation on average in the regions and the country as a whole. To a certain extent, this is due to the fact that in order to recognize the presidential election as valid, a voter turnout of at least 50% is required, whereas there is no turnout threshold in parliamentary elections.

The analysis of the electoral behavior of citizens in the context of cities within the framework of individual RF constituent entities allowed us to identify the following features. In the Republic of Karelia, a high turnout for the presidential election was recorded in the administrative center – Petrozavodsk (60.2%) and in small towns with a population of 10 to 30 thousand people (with the exception of Medvezhyegorsk). In localities with a population of less than 10 thousand people, the turnout was below the regional average. High level of support for the current President of the Russian Federation Vladimir Putin was observed in the cities of Kostomuksha (77.8%), Kem (75.1%), Sortavala (75.1%), Segezha (74.7%), as well as in sparsely populated Lakhdenpokhya (75.2%) and Olonets (73.7%).

In the election to the State Duma of the Russian Federation, the highest voter turnout was typical for the monotown of Kondopoga (44.1%), as well as the small towns of Kem (43.2%), Pudozh (41.1%), Suoyarvi (41%). A higher level of support for the United Russia party was observed mainly in cities with a population of up to 10 thousand people – Belomorsk (36.1%), Olonets (35.1%), as well as the industrial cities of Segezha (34.6%) and Kostomuksha (34.1%).

In the Komi Republic, the highest turnout in the RF presidential election was recorded in the most sparsely populated cities of the region: Mikun – 63.5%, Vuktyl – 62.8%. In the cities of Usinsk, Sosnogorsk, Ukhta and Syktyvkar, it also exceeded the regional average (60.4%). However, only in three mining cities – Usinsk (74.2%), Vorkuta (74.1%), Pechora (72.6%) – the level of support for Vladimir Putin was higher than the average for the republic (71.4%).

In the Arkhangelsk Oblast, in 9 out of 13 cities, the turnout for the RF presidential election exceeded the regional average (59.2%). Among all the settlements under consideration, the city of Mirny stands out, having the status of a closed city: turnout in it was 76.4%, and the level of support for Vladimir Putin was 82%. Only in one more city in the region – Severodvinsk – the share of those who voted for the current President of the Russian Federation exceeded the average values for the region (78.3%). The turnout for the State Duma election in Mirny was also the highest (62%). More than a third of voters voted for the United Russia party in only two cities: closed city of Mirny (53.5%) and Novodvinsk (33.2%). The lowest level of support was observed in Kotlas (23.6%) and Velsk (26.4%).

In the only city of Nenets Autonomous Okrug, Naryan-Mar, the turnout rates for the RF presidential election (60%) and the State Duma election (40.4%) were lower than the national average (67.5 and 51.6%, respectively) and for the region (63.6 and 42.6%, respectively). At the same time, the level of support for Vladimir Putin by the population of the city is quite high (71.3%), while the United Russia party is supported by only a quarter of voters.

At the presidential election in the Vologda Oblast, the highest voter activity was observed in two major cities of the region: in Vologda – 66.3%, and in Cherepovets – 69.2%. In the remaining cities (all of them belong to the category of small, the turnout was below the regional average (66.1%). The lowest activity is typical for Belozersk (56.8%) and Vytegra (56.2%).

The highest level of support for Vladimir Putin was observed in the two most sparsely populated cities of the Vologda Oblast – Krasavino (76.5%) and Kadnikov (74.5%). In Cherepovets (73.4%), the indicator also exceeded the regional average. On the contrary, in Vologda, the share of those who voted for the current President of the Russian Federation (69.7%) was one of the lowest in the region; the figure is lower only in Totma (68.7%).

A somewhat opposite situation has developed with the turnout for the election to the State Duma of the Russian Federation. The greatest activity of the population was observed in sparsely populated cities: in Totma, the turnout was 48.2%, in Kadnikov and Kirillov – 47% each. In Vologda and Cherepovets, on the contrary, the turnout was very low: 42.9 and 42.0%, respectively. The United Russia Party enjoys greater support in cities with small population: Krasavino (37.3%), Ustyuzhna (37.2%) and Kharovsk (36.6%).

Among all the regions considered, the Murmansk Oblast has the highest voter turnout for the presidential election: an average of 66.3% in the region, which can be explained by the presence of a large number of closed cities. It is the cities of this category that are the leaders in terms of the share of the population participating in the elections. In 2018, the turnout for the elections in the closed city of Polyarnye Zori, closed city of Severomorsk, Gadzhievo and Polyarny (they are part of the closed city of Aleksandrovsk) exceeded 70%. High activity of residents was also observed in Kirovsk (72.1%) and Apatity (68.8%). The level of support for Vladimir Putin is also the highest in closed administrative-territorial entities: Ostrovnoy (82.7%), Zaozersk (80.6%), Gadzhievo (80.1%). The situation with the turnout for the State Duma election and the share of those who voted for United Russia is generally similar.

Conducting population surveys regarding the development of the social, transport or housing and communal services of the city is one of the ways to involve citizens in management processes. Thus, with the beginning of the implementation of the federal project "Formation of a comfortable urban environment" of the national project "Housing and urban environment", city residents have the opportunity to directly participate in the selection of objects of improvement in their locality via online voting. Currently, as part of the implementation of the national project, more than 55 thousand objects have already been improved, including public spaces and courtyards[8].

In 2023, residents of ENR cities also had the opportunity to vote for improvement objects or for specific design projects of public territories. In the context of the RF constituent entities under consideration, the Republic of Karelia and the Arkhangelsk Oblast should be singled out, because voting in these entities was held in almost every city (with the exception of Belomorsk and Solvychegodsk, respectively). For comparison, in the Vologda Oblast, only 8 out of 15 cities applied for participation in the project for the formation of a comfortable urban environment.

The indicator of the share of citizens who took part in the voting, from the total number of inhabitants of settlements, allows us to conclude that the population of small cities, especially those with a population of up to 10 thousand people, is much more involved in these processes. The absolute leader is the city of Kargopol, where over 40% of the population took part in the voting (*Tab. 3*). In Ustyuzhna and Belozersk, every fourth resident made their choice in favor of the

Table 3. Participation of residents of ENR cities in voting on the choice of public spaces for improvement

City	Number of public spaces put forward for voting, units*	Number of voters, people	Population of the city, people	Number of voters to the population of the city, %
Kargopol	3	3567	8737	40.8
Kotlas	9	17492	56122	31.2
Ustyuzhna	3	1984	7653	25.9
Belozersk	3	2121	8183	25.9
Mezen	2	706	2832	24.9
Pudozh	4	1734	7207	24.1
Veliky Ustyug	9	6508	28266	23.0

[8] The all-Russian vote to choose improvement objects has started. National projects of Russia. Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/news/startovalo-vserossiyskoe-golosovanie-za-obekty-blagoustroystva

End of Table 3

City	Number of public spaces put forward for voting, units*	Number of voters, people	Population of the city, people	Number of voters to the population of the city, %
Velsk	3	4698	21406	21.9
Nyandoma	7	3979	18146	21.9
Kirillov	3	1529	7069	21.6
Koryazhma	4	7344	34002	21.6
Naryan-Mar	6	5022	23579	21.3
Kem	3	2066	9712	21.3
Shenkursk	3	962	4524	21.3
Sortavala	6	2797	14787	18.9
Polyarny	3	2167	12154	17.8
Olonets	4	1329	7631	17.4
Totma	3	1505	8647	17.4
Pitkyaranta	3	1384	8094	17.1
Olenegorsk	4	3543	20875	17.0
Suoyarvi	2	1123	6819	16.5
Severomorsk	7	7055	43394	16.3
Mirny	4	4380	27174	16.1
Vytegra	3	1603	10292	15.6
Yemva	1	1670	10779	15.5
Polyarnye Zori	4	2146	14078	15.2
Kandalaksha	4	4331	28438	15.2
Kovdor	2	2347	15423	15.2
Kola	2	1353	8933	15.1
Medvezhyegorsk	4	1770	11737	15.1
Vologda	8	46739	311628	15.0
Severodvinsk	3	23275	156056	14.9
Lakhdenpokhya	3	872	5855	14.9
Segezha	3	3401	23074	14.7
Kondopoga	4	3656	25295	14.5
Ukhta	2	11163	78081	14.3
Cherepovets	6	42893	301040	14.2
Monchegorsk	3	5557	39477	14.1
Apatity	1	6793	48748	13.9
Arkhangelsk	20	40943	298617	13.7
Onega	2	2249	16449	13.7
Petrozavodsk	25	32237	235793	13.7
Inta	3	2644	19529	13.5
Sosnogorsk	4	2978	22032	13.5
Gadzhievo	2	1189	9088	13.1
Kostomuksha	6	3203	25928	12.4
Kirovsk	1	2941	24271	12.1
Syktyvkar	18	26207	220042	11.9
Zaozersk	3	909	7760	11.7
Snezhnogorsk	1	1131	10023	11.3
Usinsk	2	3455	31358	11.0
Murmansk	9	28069	267422	10.5
Pechora	1	3596	34383	10.5
Vorkuta	3	5865	56389	10.4
Novodvinsk	3	2878	32826	8.8

* In the case where one public space is indicated, the vote was held for the choice of a design project for its improvement.
Source: information on the number of voting participants was obtained on the basis of materials from websites on the implementation of the federal project "Formation of a comfortable urban environment" in the Republic of Karelia. Available at: https://10.gorodsreda.ru/; in the Komi Republic. Available at: https://11.gorodsreda.ru/; in the Arkhangelsk Oblast. Available at: https://29.gorodsreda.ru/; in the Vologda Oblast. Available at: https://35.gorodsreda.ru/; in the Murmansk Oblast. Available at: https://51.gorodsreda.ru/; in Nenets Autonomous Okrug. Available at: https://83.gorodsreda.ru/

landscaping project they liked. Kotlas stands out among medium cities, since almost a third of the population has been active there.

Vologda has the highest rates in the group of large and big cities: about 15% of the population participated in the voting. Residents of Murmansk are less active: only one in ten citizens took part in a survey on the choice of objects for improvement.

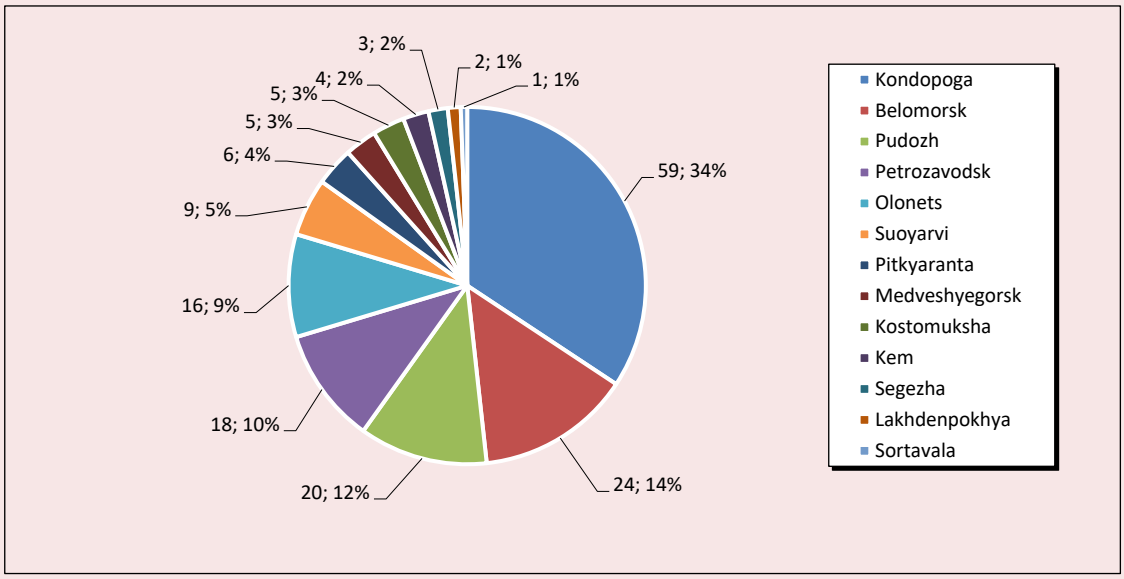
Territorial public self-government (TPSG) established by Federal Law 131-FZ, dated October 6, 2003 is also one of the forms of participation of the population in solving issues of local importance. This mechanism is based on the interaction of the residents themselves, who independently determine the list of the most pressing problems and organize themselves on a voluntary basis to solve them. Local self-government bodies, in turn, can provide advisory assistance to TPSGs, as well as provide support in terms of material support for their activities.

The institution of territorial public self-government has a significant potential for the development of small-sized territories. At the same time, at present, in our opinion, the lack of a clear system of accounting for the work of TPSG is a rather serious problem. In particular, among the ENR regions under consideration, the most complete information on the number of TPSG is available only for the Republic of Karelia.

As of July 1, 2023, 572 TPSGs have been created in the region, but only 172 of them (30%) are in cities (*Fig. 2*). It should be emphasized that the largest number of TPSGs operates in small cities rather than the administrative center of Petrozavodsk. Thus, in the city of Kondopoga with a population of less than 30 thousand people, there are 59 TPSGs, or a third of their total number in the cities. In Belomorsk and Pudozh, where the population is less than 9 thousand people, 24 and 20 TPSGs were created, respectively. This form of civic activity is least common in the following cities: Sortavala (1 TPSG), Lakhdenpokhya (2 TPSGs) and Segezha (3 TPSGs).

In the Arkhangelsk Oblast, as of February 1, 2023, 1,204 TPSGs were registered. At the same

Figure 2. Number of functioning TPSGs in the cities of the Republic of Karelia in 2023; their share in the total number in the cities



Source: Register of territorial public self-governments in the Republic of Karelia as of July 1, 2023. Available at: https://асмо-карелия.rf/wp-content/uploads/2023/07/Reestr-na-01.07-2023.pdf

time, the information is presented only in the context of municipal districts, urban or municipal okrugs. Thus, it is difficult to say how many TPSGs there are in cities that do not have this status. At the same time, according to available information, it can be concluded that the leader in the number of functioning TPSGs is Kotlas (33 TPSGs), which belongs to the category of medium cities rather than the largest cities of the oblast, Arkhangelsk (18 TPSGs) and Severodvinsk (2 TPSGs)[9].

Based on the materials of the Association of Municipalities of the Komi Republic[10], we can conclude that the practice of applying territorial public self-government in cities is used extremely poorly. So, out of all 87 TPSGs of the republic, only one is located in Syktyvkar and two in Inta. Unfortunately, for the Vologda and Murmansk oblasts, up-to-date information on the number of TPSGs is not presented in a systematic form, so it is difficult to draw any definite conclusions for these regions.

In general, in our opinion, TPSGs carry out a very important mission to unite and consolidate people to solve common problems, since not every citizen is ready to show their civic activity individually.

Further, as part of the study, we analyzed the availability of official accounts of local self-government bodies of cities and the number of their subscribers on VKontakte. According to the data obtained during the study, currently in 33 out of 66 municipal formations[11], local authorities have an account on VKontakte (*Tab. 4*). At the same time, the analysis of the share of subscribers from the total population allows us to conclude that residents of large cities are much less active in this type of communication with the authorities.

For example, in Cherepovets, only 1.6% of residents are subscribed to the Cherepovets City Hall community, in Vologda 2.8% of the population is subscribed to the Vologda City Administration group.

Table 4. Number of subscribers to the official accounts of local self-government bodies of the cities of the ENR on VKontakte*

No.	Municipal formation	Population, people	Name of the community on VKontakte	Number of subscribers to the community, units	Number of participants to the number of population of the municipality, %
1	Closed City of Mirny	27174	Official Mirny	17407	64.1
2	ME Polyarnye Zori	15726	Polyarnye Zori	9570	60.9
3	Closed City of Zaozersk	7760	Administration of the Closed City of Zaozersk	4273	55.1
4	UO Naryan-Mar	23579	City of Naryan-Mar	10368	44.0
5	Closed City of Aleksandrovsk	32232	Closed City of Aleksandrovsk	13699	42.5
6	ME Kirovsk	26253	Your Kirovsk	10754	41.0
7	ME Kovdorsky District	16763	Single-industry city of Kovdor	6827	40.7
8	UO Vuktyl	10365	Administration of Urban Okrug "Vuktyl"	4157	40.1
9	Closed City of Ostrovnoy	1432	Administration of the Closed City of Ostrovnoy	565	39.5

[9] Internet portal of the territorial public self-government of the Arkhangelsk Oblast. Available at: https://www.tos29.ru/geografiya/

[10] Official Internet portal of the Association "Council of Municipalities of the Komi Republic". Available at: http://atosrk.ru/page/tos_komi

[11] We consider 66 municipal entities and not 68, since three cities (Gadzhievo, Snezhnogorsk and Polyarny) are part of one municipality – the closed city of Aleksandrovsk.

End of Table 4

No.	Municipal formation	Population, people	Name of the community on VKontakte	Number of subscribers to the community, units	Number of participants to the number of population of the municipality, %
10	US Sortavala	17930	Administration of Sortavala Settlement	6326	35.3
11	ME Monchegorsk	41729	Administration of the city of Monchegorsk	13686	32.8
12	UO Kostomuksha	26531	Kostomukshsky Urban Okrug	8585	32.4
13	UO Inta	21092	Administration of ME UO "Inta"	5946	28.2
14	UO Severodvinsk	156731	Administration of Severodvinsk	40784	26.0
15	UO Kotlas	67023	Administration of Urban Okrug "Kotlas"	17095	25.5
16	UO Vorkuta	67702	Vorkuta City Administration	15745	23.3
17	UO Koryazhma	34002	Administration of Urban Okrug "City of Koryazhma"	7775	22.9
18	US Velsk	21815	Administration of Urban Settlement "Velskoye"	4563	20.9
19	UO Usinsk	36025	Administration of Okrug "Usinsk"	7531	20.9
20	UO Ukhta	94168	Administration of MEUO "Ukhta"	18629	19.8
21	ME Olenegorsk	27974	Olenegorsk City Administration	4348	15.5
22	ME Apatity	48763	Apatity City Administration	7205	14.8
23	UO Severomorsk	50949	Administration of the Closed City of Severomorsk	7139	14.0
24	UO Arkhangelsk	303357	Open Arkhangelsk	40796	13.4
25	UO Petrozavodsk	235793	Administration of Petrozavodsky Urban Okrug	29599	12.6
26	US Nikolsk	7607	Nikolsk City Administration	903	11.9
27	UO Novodvinsk	32826	Administration of ME "City of Novodvinsk"	3223	9.8
28	UO Syktyvkar	233105	Official Syktyvkar	21408	9.2
29	US Krasavino	5460	Territorial department in the City of Krasavino	352	6.4
30	US Mikun	8401	Administration of US "Mikun"	516	6.1
31	UO Murmansk	267422	Murmansk City Administration	14713	5.5
32	UO Vologda	318112	Vologda City Administration	8785	2.8
33	UO Cherepovets	301040	Cherepovets Mayor's Office	4870	1.6

* The number of community members is given as of July 19, 2023. Subscribers can be residents of other municipalities, too.
Source: own compilation on the basis of information from the social media VKontakte. Available at: https://vk.com/

The leaders in population coverage are the closed city of Mirny in the Arkhangelsk Oblast, Municipal Okrug Polyarnye Zori and the closed city of Zaozersk in the Murmansk Oblast, where more than half of the residents are subscribed to the official accounts of local self-government bodies[12]. Among cities with a population of less than 10 thousand people, only three local governments have a VKontakte page, but the number of subscribers is small. In the city of Nikolsk, about 12% of the population are members of the community "Administration of the city of Nikolsk", in the city of Krasavino – 6.2% of residents are subscribed to the "Territorial department in the city of Krasavino", in the city of Mikun – 6.1% are subscribed to the "Administration of Mikun". In general, greater activity in this form of interaction with local authorities is typical for cities with a population of 10 to 30 thousand people.

[12] Subscribers to official communities of local self-government bodies on Vkontakte may include people who do not currenly live in the municipality under consideration; therefore, the data presented have a certain margin of error.

We should note that almost all official accounts of local self-government bodies have forms for citizens' appeals. Any resident of the city in this way can report a problem, ask a question or express their opinion. However, modern digital technologies make it possible to track complaints or suggestions not only in official communities of local authorities. For example, the social media monitoring system "Incident Management" helps to find and process messages that citizens leave in open sources on the Internet, for example in informal urban communities.

As part of the study, we analyzed the number of participants of such groups on VKontakte (*Tab. 5*). According to the results, there are such communities in almost all cities of the European North of Russia,

Table 5. Unofficial urban communities on VKontakte*

City	Name of urban community	Number of participants, units	Number of participants to the population of the city. %
Ostrovnoy	Gremikha, Murmansk-140, Ostrovnoy	10182	In 7.2 times
Mezen	Podslushano Mezen	14857	In 5.2 times
Nikolsk	Podslushano Nikolsk	33973	In 4.5 times
Shenkursk	Podslushano Shenkursk	16318	In 3.6 times
Pudozh	Podslushano v Pudozhe I Karelia	24214	In 3.4 times
Lakhdenpokhya	Lakhdenpokhya - NAVSEGDA!	19294	In 3.3 times
Velsk	Podslushano Velsk	61270	In 2.9 times
Suoyarvi	Podslushano v Suoyarvi	19256	In 2.8 times
Kadnikov	Podslushano Kadnikov	11290	In 2.8 times
Kargopol	Podslushano v Kargopole	24392	In 2.8 times
Totma	Podslushano Totma	22220	In 2.6 times
Pitkyaranta	Podslushano v Ptk. (Pitkyaranta)	20390	In 2.5 times
Belozersk	Belozersk	20005	In 2.4 times
Gryazovets	Podslushano - Gryazovets	34396	In 2.4 times
Kem	Podslushano I Kem	22660	In 2.3 times
Mikun	PODSLUSHANO MIKUN In Culture	18785	In 2.2 times
Krasavino	Podslushano v Krasavino	12023	In 2.2 times
Babaevo	Podslushano Babaevo	25152	In 2.1 times
Solvychegodsk	SOLVYCHEGODSK – GLUBINKA RUSI	3960	In 2.1 times
Vuktyl	"Gorodok Vuktyl"	18498	In 2 times
Sortavala	Podslushano v Sortavala	28937	195.7
Vytegra	Nastroenie – Moya Vytegra	19571	190.2
Onega	TIPICHNAYA ONEGA	30423	185.0
Gadzhievo	Podslushano v Gadzhievo	16784	184.7
Veliky Ustyug	Podslushano Veliky Ustyug	50955	180.3
Naryan-Mar	Podslushano I Naryan-Mar	39670	168.2
Yemva	g. Yemva (Knyazhpogostskii raion)	18043	167.4
Belomorsk	PB/ Podslushano Belomorsk	12002	162.0
Polyarnye Zori	Podslushano Polyarnye Zori	22175	157.5
Snezhnogorsk	Podslushano v Snezhnogorske	15772	157.4
Pechora	Tipichnaya Pechora	51918	151.0
Kandalaksha	KANDALAKSHA VKURSE	41265	145.1
Murmansk	Murmansk	385775	144.3
Olonets	Olonets Live I Novosti raiona	10974	143.8
Sosnogorsk	Podslushano Sosnogorsk	30583	138.8
Zapolyarny**	Nikel, Zapolyarny, Pechenga. Doska obyavlenii	40450	132.2
Apatity	Podslushano Apatity	63735	130.7
Severomorsk	Severomorsk Onlain	56515	130.2

End of Table 5

City	Name of urban community	Number of participants, units	Number of participants to the population of the city. %
Kotlas	Kotlas	71744	127.8
Olenegorsk	OLENEGORSK VKURSE	25633	122.8
Kirovsk	Podslushano Kirovsk Khibiny	28801	118.7
Kirillov	KIRILLOV	ONLINE	8275	117.1
Kola	Gorod Kola 51 (Kolskii raion)	10265	114.9
Koryazhma***	Uslyshano	Koryazhma, Kotlas	101700	112.8
Vologda	Onlain Vologda	346796	111.3
Severodvinsk	Severodvinsk life	171493	109.9
Zaozersk	Podslushano Zaozersk	8356	107.7
Sokol	Podslushano Sokol	36760	107.2
Monchegorsk	Podslushano Monchegorsk – No.1	39239	99.4
Kostomuksha	ANTIBESEDKA - Kostomuksha	25720	99.2
Usinsk	Usinsk.Onlain	30139	96.1
Mirny	Podslushano Mirny	25306	93.1
Inta	PODSLUSHANO INTA	18113	92.7
Novodvinsk	IPN † (Novodvinsk)	30419	92.7
Ustyuzhna	Podslushano Ustyuzhna	6760	88.3
Vorkuta	Khelou, Vorkuta!	47980	85.1
Arkhangelsk	Arkhangelsk life	248635	83.3
Petrozavodsk	Podslushano v PTZ	Petrozavodsk	193003	81.9
Kondopoga	Podslushano Kondopoga	18617	73.6
Kharovsk	Gorodok nash Kharovsk	6028	72.1
Ukhta	Podslushano Ukhta	56085	71.8
Polyarny	Nash Polyarny	8522	70.1
Segezha	Segezha	14793	64.1
Kovdor	KOVDOR VKURSE	9026	58.5
Nyandoma	NYANDOMA	10538	58.1
Medvezhyegorsk	Medvezhyegorsk: komanda zhitelei. Perezagruzka	5755	49.0
Syktyvkar	Podslushano Syktyvkar	86851	39.5
Cherepovets	Cherepovets	93714	31.1

* The number of community members is presented as of July 19, 2023. Subscribers can be not only residents of this municipality. In some cities there are several informal urban communities, the largest ones in terms of the number of participants were taken into consideration in the study.
** The share of community members is calculated from the total population of the city of Zapolyarny, urban-type settlement Nikel, urban-type settlement Pechenga.
*** The share of community members is calculated from the total population of Koryazhma and Kotlas.
Source: own compilation on the basis of information from VKontakte. Available at: https://vk.com/

in some cases the group unites several localities geographically located close to each other, for example, the community "Uslyshano. Koryazhma, Kotlas" unites the population of two corresponding cities, or the group "Nikel, Zapolyarny, Pechenga. Doska obyavleniy", which includes residents of three settlements at once.

The number of subscribers of groups of small cities is several times higher than the population of the city itself. For example, the community "Gremikha, Murmansk-140, Ostrovnoy" consists of more than 10 thousand people, which is 7.2 times more than the population of the city of Ostrovnoy itself. The number of participants of the groups "Podslushano" in the small cities of Mezen, Nikolsk, Shenkursk, Pudozh, Lakhdenpokhya exceeds the population of these cities by 3.3–5.2 times. Such activity, in our opinion, can be explained by two main factors. First, the number of participants in informal groups may include people

who currently do not live in a small city, but were born in it. Second, the groups themselves are like some kind of "bulletin board". In particular, it may publish information about the purchase/sale of goods and services, search for a traveling companion to get to a regional center or a neighboring city, available jobs in organizations and enterprises. That is, the subscribers of the community can be people for whom the published information is of interest, in particular, residents of neighboring urban and rural settlements.

In medium cities, the number of subscribers of unofficial communities is about a third higher than the population of the city itself, for example, in Apatity – 130.7% of the city's population, in Severomorsk – 130.2%, in Kotlas – 127.8%. With regard to big cities, we note that only the urban communities of Murmansk ("Murmansk") and Vologda ("Onlain Vologda") have the number of subscribers that exceeds the population of the city itself – by 44.3 and 11.3%, respectively. In Petrozavodsk, Syktyvkar and Cherepovets, the number of participants in informal groups on VKontakte is significantly less than the number of city residents.

Conclusion

Thus, according to the results of the research, several key conclusions can be drawn concerning the peculiarities of participation of residents of various types of cities in state and municipal administration.

1. In the context of individual constituent entities of the ENR, there are certain differences in the electoral behavior of residents of cities with different number of population. In particular, in the Republic of Karelia and the Vologda Oblast, high turnout for the RF presidential election is typical for large, rather than small, cities. However, regarding the election to the State Duma of the Russian Federation in these regions, the situation was the opposite. In general, the determining factor in the macroregion is the city's economic specialization, rather than size. In the regions of the European North there is a considerable number of closed cities (Aleksandrovsk, Severomorsk, Zaozersk, Mirny), as well as cities with a single-industry economy (Cherepovets, Severodvinsk, Apatity, Kirovsk, Polyarnye Zori). It is these two groups of settlements that are leaders in voter turnout, as well as in the level of support for Russian President Vladimir Putin. In our opinion, this can largely be due to the power of the influence of the administrative resource, since in closed cities a significant proportion of the population is employed in the public sector, and in single-industry towns the life of most citizens is closely linked to the activities of the city-forming enterprise, which in both cases can be used as a lever to control the electoral behavior of citizens. Also, one of the reasons may be that these cities have a higher level of wages, so the population is more satisfied with the policy pursued by the current authorities and is not interested in changing its course.

2. Residents of the most sparsely populated cities (up to 10 thousand people) are much more actively involved in voting on the improvement of the urban environment. On average, every fifth citizen is active in them, whereas in large and big cities their share ranges from 10 to 15%. The difference, in our opinion, can be explained in general by the greater willingness of residents of small cities to participate in the discussion of urban problems. Thus, according to sociological surveys, less than a quarter of residents of Vologda and Cherepovets (23.7 and 23.1%, respectively) have a desire to participate in discussions on topical issues of city development[13], and, for example, the majority of residents of the small cities of Kirovsk and Kovdor (51.5 and 50.5%, respectively) are ready to discuss issues of urban improvement (Sharova, Maleus, 2022). The second important factor is that participation in federal projects for the improvement of territories in conditions of local budgets shortage

[13] Data from the monitoring of living conditions of the population of large cities in the Vologda Oblast, conducted by VolRC RAS in 2023.

is often the only opportunity for small settlements to improve the state of the urban environment. It is obvious that the local governments of small cities are maximally motivated in terms of the active involvement of residents in the voting processes.

3. In urban settlements of the ENR, territorial public self-government, as an instrument of civic participation, is less actively used compared to rural areas. In particular, in the Republic of Karelia, less than 1/3 of 572 TPSGs are located in cities. At the same time, the analysis of the situation in the context of settlements allows us to conclude that residents of small cities, especially Kondopoga, Belomorsk and Pudozha, are the most proactive in this matter in comparison to residents of the administrative center of Petrozavodsk. This indicates a greater willingness of residents of small cities to unite and consolidate their efforts to solve common problems. In our opinion, a significant role is played by the fact that TPSGs can apply for budgetary funds or grants (Gainanov et al., 2022). Measures to support the work of TPSGs are effective due to the use of such a tool as proactive budgeting. For example, in 2022, in the territory of Belomorsky Urban Settlement, 14 TPSGs participated in the competitive selection for the implementation of projects, four of which became winners and received funding totaling more than 2.5 million rubles. The funds were allocated for repairs in the library building, improvement of parking lots and playgrounds, etc.[14] Thus, territorial public self-government acts as another actually working tool for obtaining funding for the implementation of improvement measures and the formation of a comfortable urban environment.

4. Based on the analysis of the share of subscribers to the official accounts of local self-government bodies of cities on Vkontakte, we can conclude that residents of small cities, especially with a population of 10 to 30 thousand people, are more actively using the possibilities of this method of communication with the authorities, compared to the population of large cities. Against the background of other settlements, we can distinguish the closed city of Mirny in the Arkhangelsk Oblast, Municipal Okrug Polyarnye Zori and the closed city of Zaozersk in the Murmansk Oblast, where more than half of the residents are subscribed to the official pages of local self-government bodies. This is largely due to the peculiarities of economic structure in these cities.

5. In small towns of the European Union, the level of involvement of the population in informal urban communities on the social media is significantly higher: in some, the share of participants is several times higher than the population of the city. In medium cities, the number of subscribers to informal communities exceeds the population of the city itself by about a third, and only two large cities (Murmansk and Vologda) are characterized by an excess of the number of subscribers over the population of the city itself. This feature can be explained to some extent by the fact that many members of urban communities used to live in small towns and subsequently left the locality, but they keep in touch with their "small homeland" via the social media.

Scientific significance of the study consists in determining the features of the spread of formal and informal mechanisms of participation of urban residents in management processes, depending on the number of people living in cities.

Practical significance of the work consists in the possibility of using our findings by public authorities and local self-government in improving the implemented policy of involving citizens in the processes of state and municipal administration.

Of course, beyond the scope of the study, there are still many mechanisms of residents' political and civic participation, in particular, issues of initiative budgeting in cities or citizens' participation in volunteer organizations. They will be the topic of further scientific papers on the problems and prospects of the development of civic engagement.

[14] Report of the head of the municipality "Belomorskoye urban settlement" for 2022. Available at: https://www.belomorsk-mo.ru/omsu/dokladi_vistupleniya/

References

Bulakh E.V., Leonenko T.P., Tsoi V.G. (2021). Forms of the local community functioning in the framework of territorial self-government on the territory of municipalities of the Russian Federation. *Vestnik Zabaikal'skogo gosudarstvennogo universiteta*, 27(1), 34–42. DOI: 10.21209/2227-9245-2020-27-1-34-42 (in Russian).

Carvalhais I.M.E., Oliveira C. (2019). *Report on Political Participation of Mobile EU Citizens: Portugal*. European University Institute. Available at: https://www.researchgate.net/publication/331043203_REPORT_ON_POLITICAL_PARTICIPATION_OF_MOBILE_EU_CITIZENS_PORTUGAL_COUNTRY_REPORT_AUTHORED_BY

Charakhchyan K.K, Bondarenko I.A. (2017). Institutions of public participation in the strategic planning of social and economic development of municipalities. *Obshchestvo: politika, ekonomika, pravo=Society: Politics, Economics, Law*, 37–40. DOI: 10.24158/pep.2017.3.9 (in Russian).

Dement'eva I.N. (2020). Protest moods of residents of the region as a manifestation of destructive forms of civic activity. *Society and Security Insights*, 3(2), 88–103. DOI: 10.14258/ssi(2020)2-06 (in Russian).

Đulabić V., Jerinić J. (2021). *Public Participation in Local Public Action in Croatia and Serbia*. Available at: http://dx.doi.org/10.2139/ssrn.3862802

Dus Yu.P., Vlaskina E.Ya. (2018). The inhabitant is always right, or how to involve the population in the management of territory development. *Regional Economics: Theory and Practice*, 16(4), 612–623 (in Russian).

Ferrucci P., Hopp T., Vargo C.J. (2020). Civic engagement, social capital, and ideological extremity: Exploring online political engagement and political expression on Facebook. *New Media & Society*, 22(6), 1095–1115.

Frolov A.A., Agurova A.A. (2019). Index analysis of active citizenship in social networks. *Izvestiya Irkutskogo gosudarstvennogo universiteta. Seriya Politologiya. Religiovedenie=The Bulletin of Irkutsk State University. Series "Political Science and Religion Studies"*, 29. 28–43. DOI: https://doi.org/10.26516/2073-3380.2019.29.28 (in Russian).

Gainanov D.A., Ataeva A.G., Ulyaeva A.G. (2022). *Munitsipal'noe upravlenie i mestnoe samoupravlenie* [Municipal Administration and Local Self-Government]. Ufa: ISEI UFITs RAN.

Gnezdilova M.Yu., Oganesyan T.L. (2021). Interaction of territorial public self-government with the City Duma of the city of Krasnodar. *Vestnik ekonomiki i menedzhmenta=Vestnik of Economics and Management*, 4, 8–13 (in Russian).

Gökçe-Kızılkaya S., Onursal-Beşgül Ö. (2017). Youth participation in local politics: City councils and youth assemblies in Turkey. *Southeast European and Black Sea Studies,* 17(1), 97–112. DOI: 10.1080/14683857.2016.1244239

Hill J. (2020). *Voting as a Rite: A History of Elections in Modern China (Vol. 417)*. BRILL.

Hutcheson D., Russo L. (2021). *The Electoral Participation of Mobile European Union Citizens in European Parliament and Municipal Elections*. European University Institute. Available at: https://cadmus.eui.eu/handle/1814/71159

Kennedy J.J., Nagao H., Liu H. (2018). Voting and values: Grassroots elections in rural and urban China. *Politics and Governance*, 6(2), 90–102.

Koniagina M., Kokh L., Kirillova A. et al. (2021). Crowdsourcing and crowdfunding in the management of large cities. *Theoretical and Empirical Researches in Urban Management*, 16(3), 5–22. Available at: https://www.jstor.org/stable/27035543

Koroleva E.N., Kurnikova M.V. (2019). Modern forms of public participation in local self-government: From theory to implementation practices. *Munitsipal'naya akademiya=Municipal Academy*, 4, 125–132 (in Russian).

Korzec P., Pudzianowska D. (2021). *Report on Political Participation of Mobile EU Citizens: Poland*. European University Institute. Available at: https://cadmus.eui.eu/handle/1814/72561

Kudashova I.V., Zhukova M.V. (2021). To the question of the institution of civil society in contemporary Russia: Questions of theory and practice. *Pravo i gosudarstvo: teoriya i praktika*, 5(197), 151–153. DOI: 10.47643/1815-1337_2021_5_151 (in Russian).

Langley P., Lewis S., McFarlane C. et al. (2020). Crowdfunding cities: Social entrepreneurship, speculation and solidarity in Berlin. *Geoforum*, 115, 11–20. DOI: https://doi.org/10.1016/j.geoforum.2020.06.014

Larichev A. (2019). Down the stairs leading up: local communities and overcoming the municipal crisis. *Sravnitel'noe konstitutsionnoe obozrenie*, 3(130), 85–97 (in Russian).

Latysheva A.N. (2020). Crowdfunding as a potential solution for social and cultural issues in rural communities in Russia. *Zhurnal issledovanii sotsial'noi politiki=The Journal of Social Policy Studies*, 18(1), 7–20. DOI: 10.17323/727-0634-2020-18-1-7-20 (in Russian).

Markwart E. (2017). Participation of residents in strategic planning: An onerous duty or an untapped potential? *Vestnik ekspertnogo soveta*, 2(9), 26–32 (in Russian).

Martinez-Bravo M., Padró i Miquel G., Qian N., Yao Ya. (2022). The rise and fall of local elections in China. *American Economic Review*, 112(9), 2921–2958.

Mayer M. (2016). *Civic Crowdfunding and Local Government: An Examination into Projects, Scope, and Implications for Local Government*. Norfolk, VA: ODU.

Mikhailov S.E. (2023). Current view on territorial public self-government. *Vestnik Rossiiskogo universiteta kooperatsii*, 2(52), 110–113 (in Russian).

Nikitina A.A. (2021). Forms of direct civil participation in local administration in the Rostov region: Legal regulation and practice. *Gosudarstvennoe upravlenie. Elektronnyi vestnik*, 88, 119–133. DOI: 10.24412/2070-1381-2021-88-119-133 (in Russian).

Nikovskaya L.I., Skalaban I.A. (2017). Civic participation: Features of discourse and actual trends of development. Polis. *Politicheskie issledovaniya=Polis. Political Studies*, 2(6), 43–60. DOI: https://doi.org/10.17976/jpps/2017.06.04 (in Russian).

Peltoniemi J.E.M. (2018). *Report on Political Participation of Mobile EU Citizens: Finland. European University Institute*. Available at: https://www.researchgate.net/publication/329706638_Report_on_political_participation_of_mobile_EU_citizens_Finland

Revyakin S.A. (2017). Mechanisms of public participation in strategic planning in Russian Federation. *Vestnik Omskogo universiteta. Seriya: Ekonomika*, 3(59). DOI: 10.25513/1812-3988.2017.3.62-69 (in Russian).

Safarov S.M. (2022). Strategy for the development of territorial public self-government until 2030: On the first results of implementation. *Upravlenie gorodom: teoriya i praktika*, 3(45), 59–61 (in Russian).

Sharova E.N., Maleus D.V. (2022) The small towns residents demand for the urban environment development (the case of sociological research in the Murmansk region). *Vestnik universiteta*, 10, 223–230 (In Russian).

Smoleva E.O. (2021). Forming the practices of citizens' participation in the development of the urban environment: Habitualization or institutionalization from above. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 14(5), 244–260. DOI: 10.15838/esc.2021.5.77.14 (in Russian).

Stiver A., Barroca L., Petre M. et al. (2015). Civic crowdfunding: How do offline communities engage online? *British HCI Conference. Association for Computing Machinery.* DOI: https://doi.org/10.1145/2783446.2783585

Szczepańska A., Zagroba M. Pietrzyk K. (2022). Participatory budgeting as a method for improving public spaces in major Polish cities. *Soc Indic Res*, 162, 231–252. DOI: https://doi.org/10.1007/s11205-021-02831-3

Tavares A.F., Carr J.B. (2013). So close, yet so far away? The effects of city size, density and growth on local civic participation. *Journal of Urban Affairs*, 35(3), 283–302. DOI: 10.1111/j.1467-9906.2012.00638.x

Ukhanova Yu.V. (2021). Collective practices and potential for civic participation of local community (sociological research in Russian regions). *Problemy razvitiya territorii=Problems of Territory's Development*, 25(1), 88–107. DOI: 10.15838/ptd.2021.1.111.5 (in Russian).

Xi J., Wen F. (2019). Sustainable rural governance: How rural elections in China lead to long-term social stability? *Sustainability*, 11(22), 6196.

Zagidullin M., Aziz N., Kozhakhmet S. (2021). Government policies and attitudes to social media use among users in Turkey: The role of awareness of policies, political involvement, online trust, and party identification. *Technology in Society*, 67, 101708. DOI: https://doi.org/10.1016/j.techsoc.2021.101708

Zhang T., Zhang L., Hou L. (2015). Democracy learning, election quality and voter turnout: Evidence from village elections in rural China. *China Agricultural Economic Review,* 7(1), 143–155.

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Assessing the Impact of Factors on the Education Infrastructure in the Arctic Zone of the Northern Macroregion

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Abstract. Given the orientation of Russia's state policy toward the development of its Arctic zone, one of the major directions of socio-economic development in these territories is to modernize educational facilities and form a system of qualified personnel. Having calculated the rate of changes in the indicators, we reveal negative trends in the development of school and vocational education infrastructure in the Arctic zone of the Northern microregion; this confirms the relevance of the study. The education infrastructure, regarding its components, is understood as a set of infrastructure facilities of preschool, school and vocational education, as well as their staffing with qualified specialists. The aim of the research is to identify and assess the impact of a set of factors on the change in the education infrastructure in the Arctic zone of the Northern macroregion. We study the object of research at the mesoregional taxonomic level of spatial-territorial Arctic systems in relation to specific local communities; this increases the objectivity of our findings. The geography of the study is based on an institutional approach and includes Arctic mesoregions of the Arkhangelsk Oblast, Nenets Autonomous Okrug and the Komi Republic, which together form the Arctic zone of the Northern macroregion. We put forward our own methodological approach to assessing the impact of factors on social infrastructure in the Arctic zone of the Northern microregion. The approach contains a system of indicators reflecting changes in the education infrastructure and economic, demographic, spatial-territorial and socio-labor factors affecting it over the past fourteen years. We use methods of comparative analysis, systematization and grouping, statistical and correlation-regression analysis. The results of the study allow us to conclude that the influence of the factors on the education infrastructure in the Arctic zone of the Northern macroregion is differentiated depending on the nature and pace of development of the territories under consideration, state policy implemented in these territories, and other factors.

Key words: Arctic, North, education infrastructure, factors, mesoregion, methodological approach.

Acknowledgment

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Introduction

In the modern world, education is one of the basic parameters that affect the development of human potential. The quality of education has a direct impact on such important indicators as labor productivity, unemployment rate, wages and, ultimately, the quality of life. In order to achieve a high level of education in society, it is necessary not only for people to be willing to acquire knowledge and improve their skills, but to have high-quality the education infrastructure facilities as well. Special attention should be paid to the quality and accessibility of preschool and school education. It is at this level that the foundation is laid for the formation of human values, general education and upbringing. The quality of labor resources depends on the development of secondary and higher professional education.

The Constitution of the Russian Federation guarantees equal access of all citizens to educational services, and equal rights to education. In practice, the availability and quality of education often directly depend on the overall level of socio-economic and infrastructural development of the territory. Since the beginning of the 21st century, socio-economic development of the Arctic territories has been one of the priorities of state

policy. In order to reduce interregional differences in the standard of living and quality of life, the authorities have identified 12 new macroregions. The Northern macroregion is one of the newly created macroregions; all its constituent entities fully or partially belong to the Arctic zone of the Russian Federation. Thus, there is a strategic need for research in the Arctic territories of the Northern macroregion, which are characterized by low population density, poor economic and engineering development, insufficient transport connectivity of the territory, negative demographic trends. All this adversely affects the development of the education infrastructure, its quality and accessibility for residents of the Arctic.

To achieve the purpose of the study, a set of the following related tasks was addressed: clarifying the interpretation of the education infrastructure as an object of management in the regional economy; determining the relevance of the study by revealing negative trends in the development of the education infrastructure in the Arctic territories; reviewing Russian and foreign scientific literature to identify the scientific problem and the extent of its elaboration; determining and classifying the drivers of development of the object of research; working out and applying methodological tools to test the hypothesis put forward; and interpreting the results obtained.

The analysis of essential approaches to the term "education infrastructure" allowed us to determine the conceptual basis of the object of our study. Here the infrastructure of education, from the point of view of the component composition, is understood as a set of infrastructure facilities of preschool, school and vocational education, as well as their staffing with qualified specialists.

The work considers the object of research at the mesoregional (subregional) taxonomic level of spatial-territorial Arctic systems, i.e. in relation to specific local communities (consumers), which increases the objectivity of the results obtained.

The geography of the study was determined using an institutional approach and includes the Arctic mesoregions of the Arkhangelsk Oblast, Nenets Autonomous Okrug and the Komi Republic[1]. These territories together form the Arctic zone of the Northern macroregion (*Fig. 1*).

The region chosen for the study is characterized by the presence of similar socio-economic problems, has a special geostrategic status and serious natural resource potential, therefore, corresponds to A.G. Granberg's approach to the allocation of territorial systems, called problematic economic zoning (Granberg, 2006).

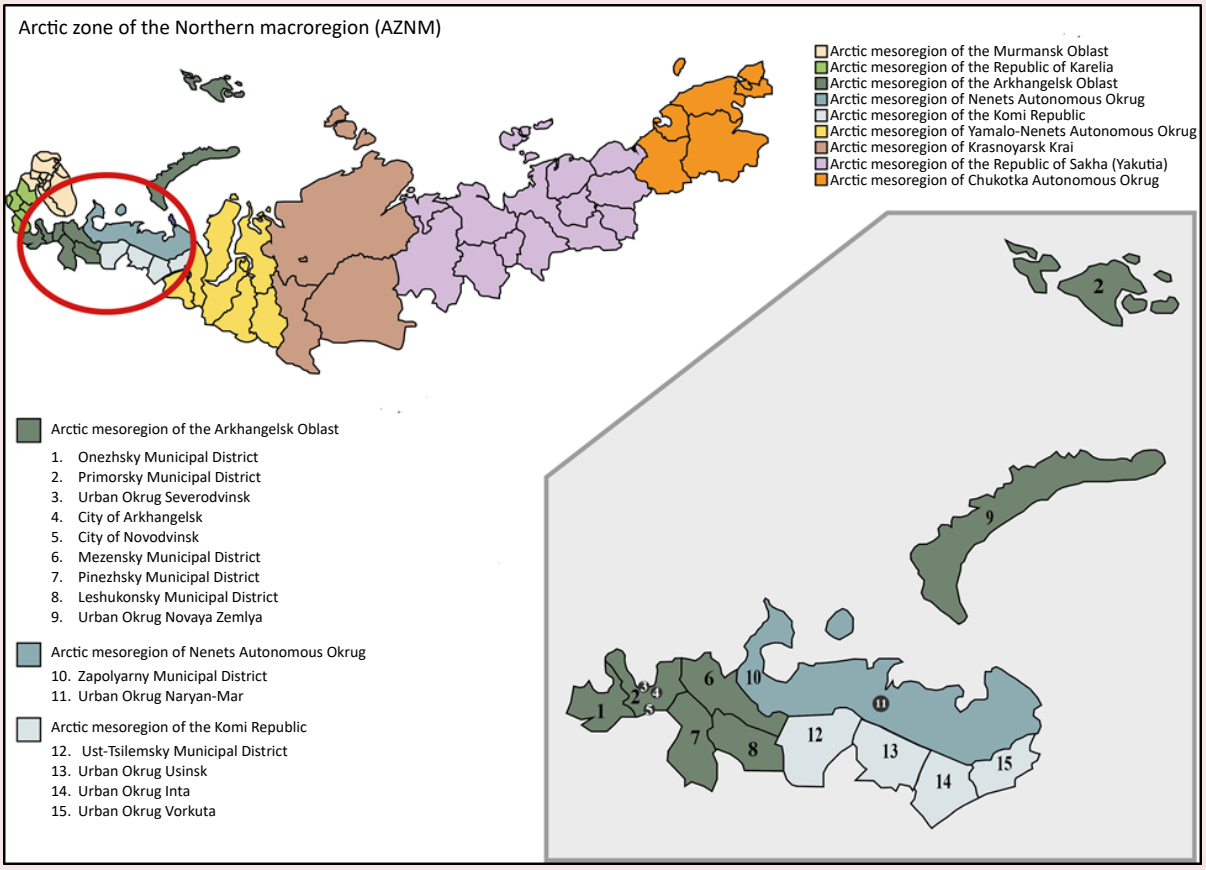
To substantiate the relevance of the study, we carried out a comparative analysis of the formed trends in the development of the education infrastructure in the selected territory. The system of indicators for the analysis of the object of research includes both absolute values of indicators and relative ones, that is, in relation to the dynamics of the number of consumers of educational services (*Tab. 1*).

The criteria for selecting indicators were the availability and accessibility of statistical data, the dynamics of indicators, and a sufficient length of the time series. As a result, 14 indicators were selected, including the characteristics of physical infrastructure facilities of preschool, school, secondary vocational and higher vocational education.

The analysis also includes indicators of staffing the education infrastructure at different levels. The length of the dynamic series in the analysis of trends is 14 years, since 2009, when Russia began implementing large-scale reforms in the social sphere, including through the implementation of national and federal projects and initiatives.

[1] On the land territories of the Arctic zone of the Russian Federation: Presidential Decree 296, dated May 2, 2014; On state support for entrepreneurial activity in the Arctic zone of the Russian Federation: Federal Law 193-FZ, dated July 13, 2020; Spatial Development Strategy of the Russian Federation for the period up to 2025 (approved by RF Government Resolution 207-r, dated February 13, 2019).

Figure 1. Arctic zone of the Northern macroregion



Source: own compilation.

Table 1. Dynamics of education infrastructure indicators

No.	Indicator, unit of measurement	Arctic mesoregion								
		Arkhangelsk Oblast			Nenets Autonomous Okrug			Komi Republic		
		2009	2022	**dynamics, %**	2009	2022	**dynamics, %**	2009	2022	**dynamics, %**
1	Number of places in preschool educational institutions (kindergartens), units	29468	42246	**43.4**	3159	3899	**23.4**	11986	11613	**-3.1**
2	Number of places in preschool educational institutions (kindergartens) per 1 child aged 1 to 6, units per child	0.76*	1.05	**38.2**	0.89*	0.97	**9.0**	0.86	1.16	**34.9**
3	Number of teaching staff in preschool educational institutions, people	4087	4579	**12.0**	448	483	**7.8**	1426	1092	**-23.4**
4	Number of teaching staff in preschool educational institutions per 1 child aged 1 to 6, people per child	0.09*	0.11	**22.2**	0.13*	0.12	**-7.7**	0.10	0.11	**10.0**

End of Table 1

No.	Indicator, unit of measurement	Arctic mesoregion								
		Arkhangelsk Oblast			Nenets Autonomous Okrug			Komi Republic		
		2009	2022	**dynamics, %**	2009	2022	**dynamics, %**	2009	2022	**dynamics, %**
5	Number of general education organizations (schools), units	201	132	**-34.3**	40	26	**-35.0**	92	63	**-31.5**
6	Number of general education organizations (schools) per 100 students aged 7 to 17, units per 100 students	0.25*	0.16	**-36.0**	0.64*	0.36	**-43.8**	0.36	0.28	**-22.2**
7	Number of teachers, people	6050	4257	**-29.6**	685	496	**-27.6**	1625	1213	**-25.4**
8	Number of teachers per 100 students aged 7 to 17, people per 100 students	6.75*	5.05	**-25.2**	8.88*	6.82	**-23.2**	6.32	5.30	**-16.1**
9	Number of secondary vocational education organizations, units	31***	30	**-3.2**	3***	3	**0.0**	7	9	**28.6**
10	Number of secondary vocational education organizations per 10,000 people of the population aged 16 and over, units per 10,000 people	0.55***	0.56	**1.8**	0.91***	0.89	**-2.2**	0.53***	0.75	**41.5**
11	Number of higher education organizations, units	10**	5	**-50.0**	0**	0	**0**	3**	2	**-33.3**
12	Number of higher education institutions per 10,000 people of the population aged 18 and over, units per 10,000 people	0.18**	0.10	**-44.4**	0**	0	**0**	0.21**	0.17	**-19.0**
13	Total number of teaching staff, people	1915**	918	**-52.1**	0**	0	**0**	18**	29	**61.1**
14	The total number of teaching staff per 10,000 people of the population aged 18 and over, teachers per 10,000 people	34.00**	17.53	**-48.4**	0**	0	**0**	1.28**	2.50	**95.3**

Note. Due to the lack of official data of the indicator, the following year was chosen as the beginning of the dynamic series: *2012, **2013, ***2016.

Compiled according to: Federal State Statistics Service. Available at: https://rosstat.gov.ru/; Main information and computing center MIREA. Available at: https://monitoring.miccedu.ru/

By calculating the rates of changes in the indicators of the education infrastructure for the periods under consideration, we identified trends in the development of the object of our study. Based on the analysis of the data obtained, we can conclude that negative trends have formed in the development of the infrastructure of school and vocational education in all the Arctic mesoregions under consideration.

The deterioration of the education infrastructure in the northern and Arctic territories may contribute to an increase in the migration outflow, especially from rural areas. Thus, during the fourteen-year period the number of inhabitants of the Arctic zone of the Northern macroregion decreased by 9%, which is largely due to the mechanical movement of the population. At the same time, the system of strategic planning for the development of the

Arctic territories assumes preservation of permanent population by creating conditions for living and improving the quality of life, including providing access to quality educational services.

Foreign and domestic studies often consider the approach that the formation of social infrastructure has an impact on the socio-economic development of territories. However, recently the attitudes of able-bodied population have been changing, which notes the importance of having a high-quality social infrastructure on the territory, especially in the field of education. Researchers have determined the importance of the transformation of the social sphere in order to attract qualified personnel and positive demographic shifts, which is due to the need to transition to the knowledge economy in the development of northern territories (Pilyasov, 2009). Also, one of the main factors promoting spatial redistribution of human resources is the quality of life, which is also characterized by the level of education (Fauzer, Smirnov, 2020). All of the above confirms the high relevance of investigating the factors affecting the education infrastructure in the Arctic zone of the Northern macroregion.

Extent of elaboration on the topic

Since the early 1990s, the majority of Russia's Arctic regions have experienced population decline due to migration (Fauzer, Smirnov, 2020) and a decrease in the birth rate (Loginov, 2010), which affects population density in this area and leads to its "depopulation" (Emelyanova, 2019). M. Laruelle reveals three waves of "Arctic urbanization" (Laruelle, 2019). As a result of this process, as P.V. Sosin points out, there is an increase in the share of small settlements located in hard-to-reach places where social infrastructure is not developing (Sosin, 2011). The processes taking place in the Arctic territories lead to the closure of kindergartens and schools (Loginov, 2010) and cause an acute shortage of teaching staff, which is due to the high rates of migration of the working-age population by whole families (Shelomentsev et al., 2018).

Researchers engaged in Northern studies point out a process of "de-intellectualization of the Northern and Arctic territories" (Fauzer, Lytkina, 2017), which, among other things, is associated with the widespread use of drive-in drive-out work (Nuikina, 2013) and an increase in the burden on the able-bodied population by elderly people in the Northern and Arctic regions (Volgin et al., 2019).

Another feature of the North and the Arctic is the ethnicity of the territory (Lazhentsev, 2008), since more than 50% of the indigenous peoples of the North, Siberia and the Far East live there[2]. As a rule, indigenous peoples lead a nomadic lifestyle, which "hinders the pace of development of social infrastructure" (Sosin, 2011), including in the field of education. In particular, researchers note the need to take into account the peculiarities of indigenous minorities, as well as the knowledge of indigenous languages among the teaching staff when deciding on the placement of educational institutions (Emelyanova, 2019).

The above processes have identified a list of demographic and social and labor factors that have a direct impact on the creation, maintenance and development of the infrastructure of the education sector.

In most municipal entities, the main reason for the migration of able-bodied population was the absence of work or related difficulties. This is due to the closure of unprofitable and outdated production facilities in the Northern territories, which reduced their economic activity (Biktemirova et al., 2015).

Large resource and raw materials companies remain the basis of the economy of the Arctic regions, which is due to the nature of the development of the latter (Selin, Vyshinskaya, 2015). Researchers engaged in Northern studies point out that large mining companies spend significant funds

[2] On approval of the List of indigenous peoples of the North, Siberia and the Far East of the Russian Federation: RF Government Resolution 536-r, dated April 17, 2006.

on the maintenance of social infrastructure facilities in settlements (Vasiliev, Selin, 2017); this serves as a kind of "compensation" projects (Novoselov et al., 2021). Sometimes such projects are implemented on the basis of public-private partnership, when the state attracts private capital to address socially significant tasks (Hodge, Greve, 2007).

Also, the Arctic regions are characterized by a high proportion of single-industry localities in the structure of settlements. The researchers note that the city-forming enterprises in the monosettlements are the central subjects of social policy; their social programs are also aimed at the development of social infrastructure facilities and their maintenance (Grachev et al., 2020). After the government has introduced benefits for enterprises investing in the formation and modernization of social infrastructure in the Northern municipalities, the level of corporate social responsibility of large businesses in the territories under consideration is increasing. Taking into account strategic guidelines of the state, major companies in the Arctic territories are currently most interested in innovative qualified personnel, which must be taken into account when developing the education infrastructure (Leksin, Porfiriev, 2015). In 2020 the RF Government adopted a package of federal laws on state support for entrepreneurship in the Arctic zone (provision of tax and administrative preferences); after that new investment processes were actively launched in the regions. The Arctic territories have become more attractive for doing business. The inflow of investments, including public ones, has an impact on the formation of the education infrastructure[3].

An important role in the development of the education infrastructure is assigned to the implemented state policy (Fomenko, Kotelevskaya, 2022). The implementation of state policy in the social sphere has recently been mainly carried out on the basis of project and strategic management, mainly through the use of financial mechanisms. Consequently, an important factor in the sustainable development of social infrastructure is the social orientation of regional and local budgets (Marmot, 2008).

Thus, economic factors such as industry specialization, corporate social responsibility and investment activity of enterprises operating in these territories have a significant impact on the education infrastructure. It is also worth considering the role of the state, which creates additional business support tools.

Russia's Northern and Arctic regions are distinguished by their remoteness (Pilyasov, 2009), which in relation to the education infrastructure is manifested in the problem of transport accessibility of educational institutions in remote areas (Davydenko et al., 2022; Nilsson, Larsen, 2020).

The next feature of the Arctic and Northern territories is their severe natural and climatic conditions, which complicates the construction of buildings and facilities, as well as their engineering equipment, and leads to the rise in their price (Streletskiy et al., 2019; Ramage et al., 2021). Researchers note the low level of engineering facilities in remote Northern and Arctic municipalities (Ryabova et al., 2013), which becomes a barrier to the construction of social infrastructure facilities in territorial planning.

The specifics of the Arctic territories form spatial and territorial factors affecting both the field of education and the social infrastructure as a whole.

A comparative analysis of the scientific literature allows us to conclude that the available studies mainly consider the impact of individual factors on the development of educational facilities and qualified personnel in this area at the regional level, as well as the lack of methodological tools for assessing the impact of factors on the formation

[3] Roskruge M., Grimes A., McCann Ph., Poot J. (2010). Social capital and regional social infrastructure investment: Evidence from New Zealand. Wellington. Working Papers from Motu Economic and Public Policy Research.

and development of the education infrastructure, from the perspective of component composition, in the Arctic zone of the Northern macroregion. Such tools will make it possible to do the following: to assess the current stage of socio-economic development after the reform of the education system, which has a particularly strong impact on remote areas; take into account the strategic guidelines of public authorities for the development of the Arctic territories of the Northern macroregion forming a certain mesoregion; to quantify the impact of a complex of related factors; to take into account spatial-territorial and socio-economic features of development of the Northern and Arctic territories.

Our research is aimed at solving the scientific problem stated above.

Research materials and methods

As a result of determining the degree of elaboration on the problem, we put forward the following scientific hypothesis: the development of the education infrastructure in the Arctic zone of the Northern macroregion is influenced by a set of interrelated economic, demographic, spatial and territorial, and social and labor factors, and the degree of their influence is differentiated depending on the features of the North and the Arctic inherent in a particular mesoregion.

To test the hypothesis, we used the following methodological approach that includes three consecutive stages.

1. Comparative analysis of existing scientific approaches in determining the factors contributing to the education infrastructure development, taking into account specific features of the North and the Arctic. The result is a system of substantiated conjugate factors promoting the development of the object of research, including indicators that fully reflect the specifics of their influence in the Arctic territories (*Tab. 2*).

2. Correlation and regression analysis of the dependence of the education infrastructure indicators (effective feature) and factor indicators (factor features), including the following steps.

— *Forming a system of resultant and factor indicators* (*Tab. 3*).

Table 2. System of factors influencing the development of the education infrastructure in the North and in the Arctic

Factor	Features of the North and Arctic	Indicator (mesoregional level)
Economic factors		
Industry specialization	Raw materials orientation in economic specialization	Share of extractive enterprises in the total number of enterprises and organizations, %
Corporate social responsibility	Presence of large mining companies in the territory	Share of invested funds from large companies operating in the territory in the total amount of funds for social development, %
Scale of own production	Closure of unprofitable and outdated production facilities, high depreciation of fixed assets	Goods of own production shipped, works and services performed with the use of own means per capita, thousand rubles
Investment activity of organizations	High investment attractiveness of territories rich in natural resources	Investments in fixed assets carried out by organizations located on the territory, per capita, rubles
Budgetary security	Social orientation of the budget	Share of local budget expenditures on social policy in total expenditures, %
Demographic factors		
Population change	Population decline	Total population growth rate, ‰
Population migration	High migration outflow	Retirement ratio, ‰
Birth rate	Decrease in the birth rate	Total fertility rate, ‰
Ethnicity	Presence of indigenous small-numbered peoples of the North	Share of indigenous small-numbered peoples of the North in the total population, %
Spatial and territorial factors		
Natural and climatic conditions	Severe natural and climatic conditions	Bioclimatic index of severity of climatic regime

End of Table 2

Factor	Features of the North and Arctic	Indicator (mesoregional level)
Urbanization of the territory	Predominance of small rural settlements (population less than 200 people)	Share of small settlements in the total number of settlements, %
Depopulation of the territory	Reduction of the rural population	Share of rural population in the total population of the territory, %
Settlement of the population	Low population density	Population density, people/km^2
Remote location of the territory	Low transport accessibility of territories	Density of paved public roads, at the end of the year, km/km^2
Extent of economic diversification	Large number of single-industry settlements (single-industry towns) in the structure of settlements	Share of single-industry municipalities in the total number of settlements, %
Engineering equipment of the territory	Low level of engineering facilities in rural remote areas	Index of equipment of the territory with water supply, sewerage and heat network
Social and labor factors		
Human capital	Reduction in the share of highly qualified personnel	Share of highly qualified personnel in the total number of the employed, %
Form of labor	Wide application of drive-in drive-out work	Share of the population working in shifts in the total number of the employed, %
Human resources	Increasing the demographic burden by pensioners	Coefficient of pensioners' demographic burden

Table 3. System of resultant and factor indicators for the development of the education infrastructure in the Arctic zone of the Northern macroregion

Area	Indicator	Unit of measurement
1. Resultant indicators (education infrastructure)		
Preschool education	1.1. Number of places in preschool educational institutions (kindergartens)	units
	1.2. Number of teaching staff in preschool educational institutions	people
School education	1.3. Number of general education organizations (schools)	units
	1.4. Number of teachers	people
2. Factor indicators		
Economic factors		
Investment activity of organizations	2.1. Investments in fixed assets carried out by organizations located on the territory (without SMEs)	rubles
Scale of own production	2.2. Goods of own production shipped, works and services performed using own means (without SMEs)	rubles
Budgetary security	2.3. Volume of local budget expenditures on social policy	rubles
Demographic factors		
Change in the number of population	2.4. Number of population	people
Birth rate	2.5. Number of live births	people
Population migration	2.6. Number of those who left the territory, the value of the indicator for the year	people
Spatial and territorial factors		
Remote location of the territory	2.7. Length of paved public roads, at the end of the year	kilometers
Engineering equipment of the territory	2.8. Single extension of water supply network at the end of the year	kilometers
	2.9. Single length of sewer network at the end of the year	kilometers
	2.10. Length of heat and steam networks in two-pipe calculation	kilometers
Depopulation of the territory	2.11. Number of rural population	people
Social and labor factors		
Labor recources	2.12. Average number of employees of organizations	people

All factor indicators of the education infrastructure development are divided into four groups. Economic factors are represented by three indicators that characterize the investment activity of organizations and the scale of their own production as the basis of a source for spending on social needs; and the actual expenditures of the local budget on social policy show not only the budgetary provision of the territory, but also priorities in spending funds. Demographic indicators take into account the natural and mechanical dynamics of the population – the end users of the education infrastructure. The need for educational facilities directly depends on demographic factors. Spatial and territorial factors are of particular importance in the Northern and Arctic territories, taking into account their vastness and low population density. Poor development of the road network and the engineering infrastructure of the territory affects the transport accessibility of the education infrastructure facilities, their quality, the potential for construction and placement of new facilities. Reduction of rural population, primarily due to the migration of young people, leads to the optimization of the education infrastructure and, ultimately, depopulation of the territory. Social and labor factors are represented by an indicator of availability of labor resources in the Arctic territories, characterized by a reduction in the share of highly qualified personnel, widespread use of drive-in drive-out employment and an increase in the pensioners' demographic burden.

The main criteria for the selection of indicators were the presence of the absolute value and dynamics of the indicator, the quantitative expression of the indicator and the sufficient length of the time series (2009–2022, 14 years). As a result of application of the listed criteria, indicators of the development of vocational education (lack of dynamics of indicators) and several factor indicators were excluded from the study. The correlation matrix was also analyzed to exclude multicollinear indicators.

– *Collecting and systematizing the database of selected indicators (constructing dynamic time series).*

Due to the lack of indicators specifically for the studied mesoregions, data were collected and summarized for municipalities included in each Arctic mesoregion. Separate subdivisions of institutions are taken into account as independent units of the education infrastructure.

– *Regression analysis of resultant and factorial time series.*

The closeness of the connections was normalized by the value of the approximation coefficient R^2. When checking, the p-value did not exceed 0.05; F-statistics did not exceed tabular values. Thus, the degree of reliability of the results was at least 95%. The criterion for the relationship between the indicator and the factor is the numerical value of the determination coefficient above 0.5 on the Cheddock scale. Special emphasis is given to the study of the influence of factors on the education infrastructure that have a high strength of relationship (above 0.7).

3. At the final stage, we carried out interpretation of the obtained results of the influence of economic, demographic, spatial-territorial and socio-labor factors on the development of the education infrastructure in the Arctic zone of the Northern macroregion. The result of this stage was the differentiation of the mesoregions by factor characteristics.

Thus, theoretical and empirical methods were used in this study. To determine the existing problems, methods of statistical analysis, grouping and systematization based on identifying the pace of change were applied. The review of the degree of theoretical study of the problem is based on a comparative analysis of the ideas and approaches of Russian and foreign scientists. Methodological tools also include econometric methods for determining the degree of influence of factors on the development of the education infrastructure.

Results and discussion

The obtained results of correlation and regression analysis confirmed the hypothesis of our study. All the factors under consideration have an impact on the development of the education infrastructure in the selected mesoregions. However, different territorial systems have their own dominant factors (*Tab. 4*).

Economic factors have a significant impact on the development of the education infrastructure in Nenets Autonomous Okrug. This confirms the thesis that in territories characterized by a drive-in drive-out mode of economic development (a large number of nonpermanent population) and raw materials specialization, economic factors prevail over social and labor ones. For example, the

Table 4. Results of the correlation and regression analysis, the value of the coefficient of determination

Factors			Arctic mesoregion	1. Resultant indicators (education infrastructure)			
				1.1	1.2	1.3	1.4
2. Factor indicators	Economic	2.1	Arkhangelsk Oblast	-	-	0.65	0.68
			Nenets Autonomous Okrug	-	-	-	-
			Komi Republic	-	-	-	-
		2.2	Arkhangelsk Oblast	-	-	0.51	0.6
			Nenets Autonomous Okrug	**0.92**	**0.88**	**0.95**	**0.72**
			Komi Republic	-	-	-	-
		2.3	Arkhangelsk Oblast	**0.92**	**0.89**	**0.77**	**0.83**
			Nenets Autonomous Okrug	-	-	-	-
			Komi Republic	-	-	**0.7**	**0.78**
	Demographic	2.4	Arkhangelsk Oblast	-	-	**0.94**	**0.99**
			Nenets Autonomous Okrug	**0.78**	-	**0.73**	-
			Komi Republic	-	-	**0.79**	**0.97**
		2.5	Arkhangelsk Oblast	-	-	**0.93**	**0.97**
			Nenets Autonomous Okrug	-	-	-	-
			Komi Republic	-	-	**0.81**	**0.93**
		2.6	Arkhangelsk Oblast	-	-	**0.75**	**0.84**
			Nenets Autonomous Okrug	0.5	-	0.49	-
			Komi Republic	**0.95**	**0.9**	0.53	**0.8**
	Spatial and territorial	2.7	Arkhangelsk Oblast	-	-	-	-
			Nenets Autonomous Okrug	**0.87**	0.52	**0.95**	-
			Komi Republic	-	-	-	-
		2.8	Arkhangelsk Oblast	-	-	**0.93**	**0.91**
			Nenets Autonomous Okrug	**0.77**	-	**0.88**	**0.87**
			Komi Republic	-	-	**0.75**	**0.81**
		2.9	Arkhangelsk Oblast	-	-	**0.84**	**0.75**
			Nenets Autonomous Okrug	0.64	-	0.61	0.5
			Komi Republic	**0.84**	**0.89**	**0.73**	**0.82**
		2.10	Arkhangelsk Oblast	**0.91**	-	**0.86**	**0.92**
			Nenets Autonomous Okrug	**0.92**	0.58	**0.87**	**0.79**
			Komi Republic	-	-	0.69	**0.88**
		2.11	Arkhangelsk Oblast	-	-	-	-
			Nenets Autonomous Okrug	-	-	0.57	-
			Komi Republic	0.57	0.59	-	-
	Social and labor	2.12	Arkhangelsk Oblast	**0.91**	**0.96**	**0.89**	**0.96**
			Nenets Autonomous Okrug	-	-	-	-
			Komi Republic	**0.84**	**0.83**	-	**0.83**

scale of own production affects the infrastructure of preschool and school education and their staffing due to the replenishment of local budgets and the implementation of corporate social responsibility programs of economic entities. The social orientation of the budget does not affect the education infrastructure in Nenets Autonomous Okrug and, on the contrary, strongly affects it in the Arkhangelsk Oblast due to the specifics of interbudgetary relations between these regions – a significant part of social services for residents of the district are provided by regional institutions.

Analyzing the results that we have obtained concerning the influence of demographic factors on the development of the object of our research, it is worth noting that the main predominant indicator is the change in the number of population. It is the need of the population for educational facilities that affects their quantitative composition, since social infrastructure is created for people. An additional argument is the strong influence of the factor such as the engineering arrangement of the territory. The spatial placement of the education infrastructure facilities is based on the existing state norms and standards for providing heat and water supply communications.

Negative migration processes in the old industrial mesoregions of the Arkhangelsk Oblast and the Komi Republic have a direct impact on the staffing of the education sector – highly qualified specialists in the social sphere leave the territory. For example, these dependencies in the Komi Republic can be confirmed by active migration from the Arctic territories associated with a decrease in economic activity or the complete closure of coal mines, which formed the basis of the structure of the economy.

Spatial and territorial factors also affect all indicators of development of the education infrastructure. A feature of Nenets Autonomous Okrug is the high periphery of the territory, which manifests itself in extremely poor provision of transport facilities. In general, the factors such as periphery and an insufficient provision of engineering equipment in the territory of all the Arctic mesoregions under consideration have a greater impact on the infrastructure of school education, including the provision of school teachers.

The average number of employees of organizations is an indicator of the provision of labor resources in the territory, the most important socio-labor factor promoting socio-economic development in the territory. This factor strongly influences the development of the education infrastructure in the Arctic mesoregions of the Arkhangelsk Oblast and the Komi Republic. This is due to their economic specialization related to the manufacturing industry and the need for a permanent population.

Takeaways and conclusion

In the course of the work, we assessed the influence of a set of factors on the formation and development of social infrastructure regarding its components. The peculiarity of the performed research lies in its complexity and implementation at the mesoregional level, taking into account territorial features of the Russian North and the Arctic and the strategic guidelines of public authorities, which became the basis for development of our own methodological tools. The methodological framework we propose includes a sequential algorithm and step-by-step detailing of the assessment of the impact of substantiated conjugate factors on the development of the education infrastructure, as well as a system of indicators that fully reflect the features of their influence in the Arctic territories.

As a result, the hypothesis was confirmed that the influence of the presented factors on the education infrastructure in the Arctic zone of the Northern macroregion is differentiated depending on the nature and pace of development of the territories under consideration and also on the implementation of state policy.

The practical significance of the research findings is determined by the possibility of their application by federal and regional authorities when developing the education infrastructure in the Arctic, taking into account the specifics and degree of influence of economic, demographic, spatial and territorial, and social and labor factors on the development of the education infrastructure in a particular mesoregion.

For example, the development of the education infrastructure in the Arctic mesoregion of the Arkhangelsk Oblast is strongly influenced by the amount of funding from local budgets. This dependence looks logical due to the considerable deficit of local budgets that have been vested with the powers to maintain preschool and school infrastructure. This fact should be taken into account by regional and local authorities at the stage of planning the structure of budgets for the planning period and the implementation of intergovernmental transfers. A telling example can be found in the strong impact of population changes on the education infrastructure in the Arctic mesoregion of the Komi Republic, where the reduction in the need for schools and kindergartens is accompanied by a natural process of their closure. The authorities need to stabilize the dynamics of the population, first of all to reduce migration decline, providing the population with employment and a decent quality of life. The provision of the transport and engineering infrastructure in Nenets Autonomous Okrug will contribute to the development of social infrastructure in the region, taking into account the increasing needs due to population growth.

The results obtained are recommended to be taken into account when developing and adjusting strategic and program documents aimed at promoting socio-economic development in the Northern and Arctic territories in general and in the field of education in particular.

References

Biktemirova M.K., Svetovtceva T.A., Rudenko L.G. et al. (2015). The social infrastructure services in the context of economic growth factors. *Mediterranean Journal of Social Sciences*, 6, 260–267. DOI: 10.5901/mjss.2015.v6n2s3p26

Davydenko V., Kolchinskaya E., Yakovleva P. (2022). Availability of education for the small indigenous peoples of the North. *Obrazovatel'naya politika=Educational Policy*, 3(91), 34–48. DOI: 10.22394/2078-838X-2022-3-34-48

Emelyanova E.E. (2019). The reference directions of development of municipalities of the Arctic. *Vestnik Kol'skogo nauchnogo tsentra RAN*, 2, 134–143. DOI: 10.25702/KSC.2307-5228.2019.11.3.134-143 (in Russian).

Fauzer V.V., Lytkina T.S. (2017). Migration processes in the Russian North. *Sotsial'naya politika i sotsiologiya*, 16(1), 141–149. DOI: 10.17922/2071-3665-2017-16-1-141-149 (in Russian).

Fauzer V.V., Smirnov A.V. (2020). Migration of the Russian arctic population: Models, routes, results. *Arktika: ekologiya i ekonomika=Arctic: Ecology and Economy*, 4(40), 4–18. DOI: 10.25283/2223-4594-2020-4-4-18 (in Russian).

Fomenko N.M., Kotelevskaya Yu.V. (2022). Directions of the state policy of infrastructure development of educational organizations. *Gosudarstvennoe i munitsipal'noe upravlenie. Uchenye zapiski=State and Municipal Management. Scholar Notes*, 2(3), 76–83. DOI: 10.22394/2079-1690-2022-1-3-76-83 (in Russian).

Grachev S.L., Filimonova I.V., Nemov V.Yu. (2020). Social infrastructure management strategy of Gazprom dobycha Nadym LLC. *Gazovaya promyshlennost'*, 5, 108–116 (in Russian).

Granberg A.G. (2006). *Osnovy regional'noi ekonomiki* [Fundamentals of Regional Economics]. Moscow: GU VShE.

Hodge G.A., Greve C. (2007). Public-private partnerships: An international performance review. *Public Administration Review*, 67(3), 545–558. DOI: 10.1111/j.1540-6210.2007.00736

Laruelle M. (2019). The three waves of Arctic urbanization. Drivers, evolutions, prospects. *Polar Record*, 55, 1–12. DOI.org/10.1017/S0032247419000081

Lazhentsev V.N. (2008). Topical issues of the North of Russia (theory and recommendations). *Korporativnoe upravlenie i innovatsionnoe razvitie ekonomiki Severa: Vestnik Nauchno-issledovatel'skogo tsentra korporativnogo prava, upravleniya i venchurnogo investirovaniya Syktyvkarskogo gosudarstvennogo universiteta=Corporate Governance and Innovative Economic Development of the North: Bulletin of Research Center of Corporate Law, Management and Venture Investment of Syktyvkar State University*, 2, 67–78 (in Russian).

Leksin V.N., Porfiriev B.N. (2015). New development of the Arctic area: A challenge and socioeconomic resource for Russia's future. *Problemy teorii i praktiki upravleniya*, 6, 54–60 (in Russian).

Loginov V.G. (2010). The state and quality of social infrastructure facilities in the regions of the North. *Problemy Severa i Arktiki Rossiiskoi Federatsii: nauchno-informatsionnyi byulleten'*, 12, 61–79 (in Russian).

Marmot M. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. *The Lancet*, 372(9650), 1661–1669. DOI: 10.1016/S0140-6736(08)61690-6

Nilsson A.E., Larsen J.N. (2020). Making regional sense of global sustainable development indicators for the Arctic. *Sustainability*, 12, 1027. DOI:10.3390/su12031027

Novoselov A., Potravny I., Novoselova I., Gassiy V. (2021). Compensation fund as a tool for sustainable development of the Arctic indigenous communities. *Polar Science*, 28, 100609. DOI.org/10.1016/j.polar.2020.100609

Nuikina E.V. (2013). Influence of long-distance commute work (LDC) on receiving towns in the Russian North: Case study of Vorkuta. *Izvestiya Komi nauchnogo tsentra UrO RAN*, 2(14), 107–116 (in Russian).

Pilyasov A.N. (2009). *I poslednie stanut pervymi: severnaya periferiya na puti k ekonomike znaniya* [And the Last Shall Be First: The Northern Periphery on the Way to the Knowledge Economy]. Moscow: Librokom.

Ramage J., Jungsberg L., Wang S. et al. (2021). Population living on permafrost in the Arctic. *Population and Environment*, 43, 22–38. DOI.org/10.1007/s11111-020-00370-6

Ryabova L.A., Didyk V.V., Korchak E.A. et al. (2013). Arctic monotowns of the Russian Federation: Social problems, ways to solve them and the role of resource corporations. *Korporativnoe upravlenie i innovatsionnoe razvitie ekonomiki Severa: Vestnik Nauchno-issledovatel'skogo tsentra korporativnogo prava, upravleniya i venchurnogo investirovaniya Syktyvkarskogo gosudarstvennogo universiteta=Corporate Governance and Innovative Economic Development of the North: Bulletin of Research Center of Corporate Law, Management and Venture Investment of Syktyvkar State University*, 3, 34–50 (in Russian).

Selin V.S., Vyshinskaya Yu.V. (2015). Present-day economics of Arctic regions and corporations. *Vestnik Kol'skogo nauchnogo tsentra RAN=Herald of the Kola Science Centre of the Russian Academe of Sciences*, 4(23), 90–99 (in Russian).

Shelomentsev A.G., Voronina L.V., Smirennikova E.V. et al. (2018). Migration factors in the Arctic zone of the Russian Federation. *Ars Administrandi (Iskusstvo upravleniya)*, 10(3), 396–418. DOI: 10.17072/2218-9173-2018-3-396-418 (in Russian).

Sosin P.V. (2011). Social infrastructure of stationary and mobile settlements of the indigenous ethnic groups of the North. *Severo-Vostochnyi gumanitarnyi vestnik*, 1(2), 51–58 (in Russian).

Streletskiy D.A., Suter L.J., Shiklomanov N.I et al. (2019). Assessment of climate change impacts on buildings, structures and infrastructure in the Russian regions on permafrost. *Environmental Research Letters*, 2, 1–15. DOI: 10.1088/1748-9326/aaf5e6

Vasiliev V.V., Selin V.S. (2017). Analysis of the features of production and human life in the Russian North. *Sever i rynok: formirovanie ekonomicheskogo poryadka*, 1(52), 17–25 (in Russian).

Volgin N.A., Mosina L.L., Shirokova L.N. (2019). The Russian Arctic: Socio-labor and demographic features of development. *Sotsial'no-trudovye issledovaniya=Social & Labor Research*, (34), 117–133 (in Russian).

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Reaction of Municipal Budgets to State Regulation Measures: Assessment Methodology

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Abstract. The geographical scale of the Russian Federation dictates the need for differentiated spatial implementation of economic strategy and tactics. The municipal component of these processes is particularly important, since a significant part of regional resources is formed at the local level, causing multiplicative effects in the structures operating in the territory. In the conditions of sanctions pressure and lack of funds to finance the development of municipalities, it is necessary to take into account the reaction and extent of activity of local budgets in relation to government incentive measures. It is necessary to understand which municipalities' budgets react more actively to the managing effects of state policy; this will effectively stimulate the development of municipalities in the conditions of financial constraints of state bodies. The paper proposes and verifies a methodological approach to the comparative assessment of the activity of municipal budgets in terms of measures of state financial support for municipal development. The approach is based on the maximin criterion and is implemented on the example of municipalities included in the Far Eastern Federal District, which is Russia's largest one. The information base comprises data of the Federal Treasury on the state of municipalities' consolidated budgets for 11 Far Eastern constituent entities of the Russian Federation for 2011, 2015 and 2020. We analyze the consolidated budgets of all 164 municipal districts and 66 urban okrugs and estimate their comparative activity in relation to the measures of state financial stimulation of municipal development. We reveal high polarization of the activity of local budgets regarding state regulation measures.

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We show that the budgets of urban okrugs react more actively to government measures than the budgets of municipal districts. The budgets of urban districts formed a group of local budgets with the most active response to state regulation measures. Nevertheless, the transition of the Magadan and Sakhalin oblasts to single-level local government systems consisting only of urban okrugs by 2020 did not contribute to increasing the activity of the budgets of urban okrugs in these regions in relation to state regulation measures in comparison with other municipalities of the Far Eastern Federal District. The proposed mechanism makes it possible to provide territorial administration bodies with methodological tools for in-depth analysis and comparative assessment of the extent of activity of municipal budgets in relation to state regulation measures.

Key words: municipalities, local budget, stimulation of municipal development.

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Problem statement

The vastness of Russia's territory dictates the need for differentiated spatial implementation of the economic strategy and tactics of national development. At the same time, the regional component of socio-economic processes is of particular importance, since the municipal level forms a significant part of the potential of regional resources, which is included in the budget system and causes multiplicative effects in the structures operating in the territory.

At the regional level, state authorities create and institutionalize a certain system of socio-economic priorities embodied in various types and forms of tax benefits, subsidies, grants and other budgetary measures that stimulate the targeted activities of local self-government (LSG) bodies for the development of their subordinate territories.

The issue concerning the provision of a quantitative assessment of the response of municipal entities (ME) to state influence is interesting as an important condition for socio-economic development of the region's economic complex. Theoretical constructions traditionally consider that the budget is the main lever of the regional government to stimulate territorial socio-economic development, since many types of economic activities financed by the budget and tax benefits it provides have a multiplicative effect[1].

In fact, budget indicators reflect the policy of federal, regional and municipal authorities in the field of socio-economic development of a territory[2]. Without knowing the state of the financial sphere, it is impossible to assess the level of territory's development, since regional finance is the very means that serves as the basis for the implementation of socio-economic projects and programs in the territory.

[1] The stimulating function of the budget is particularly pronounced in the USA, where the redistribution of finances between states, as well as between municipalities within the state, is poorly developed (Lavrov et al., 2001).

[2] Lavrov A.M. (Ed.). (2007). *Rukovodstvo po upravleniyu regional'nymi i munitsipal'nymi finansami: v 2 t. Tom 1* [Guide to the Management of Regional and Municipal Finances: in 2 Volumes. Volume 1]. Moscow: LENARD; *Problemy mezhbyudzhetnykh otnoshenii v Rossii* [Problems of Intergovernmental Relations in Russia]. Moscow: Izd-vo instituta Gaidara, 2012.

As part of the implementation of the requirements of Federal Law 172[3] for the elaboration of strategic documents for the development of constituent entities of the Russian Federation, it is extremely important not only to comply with budget-related social restrictions, but also to find budgetary sources for financing the strategic development of MEs.

The paradox is that the need to use universally recognized criteria and quantitative parameters in assessing the activity of municipal budgets to measures of state stimulation of regional development is recognized by researchers (Zaitseva, 2007; Mikheeva, Ananyeva, 2011; Kotov, 2022) and practitioners, too (Shirokov, Yurkova, 2020); however, in reality, the decision to use a specific tool to promote regional development is often determined not by the desire to "expand" regional strategic problems, but turns out to be aimed at solving the problems regarding the "survival" of the municipality, focusing on social issues of local budgets (Leonov, 2023).

A holistic system for assessing the comparative activity of local budgets in relation to regional policy measures is currently, if not absent, then in the process of formation (Korotina, 2014; Selyavina, 2015; Kotov, 2020). At that it is hardly possible to determine in absolute terms the extent of reaction of the budgets of specific municipalities, but one can try to assess the comparative level of activity of local budgets in relation to state incentive measures, comparing it with the reaction of the budgets of other municipalities of some constituent entity or federal district of Russia.

The object of the study is the municipalities of the Far Eastern Federal District (FEFD). Due to its position and geopolitical significance, the Far Eastern Federal District is constantly in the spotlight of the federal government, acting as a kind of "economic laboratory of the country"[4].

The aim of the work is to build a methodology for assessing the comparative activity of local budgets in relation to financial measures of state regulation of municipal development. For this purpose, we analyzed measures of state regulation of municipal development, grouped the existing approaches to the analysis of local characteristics of the state of the municipal budget system, substantiated a comprehensive approach to assessing the comparative activity of municipal budgets taking into account the consistency and comparability of local estimates, verified the proposed approach on the example of Far Eastern Federal District municipalities, and analyzed the results obtained.

Data sources

We analyzed the dynamics of the comparative activity of local budgets in relation to state incentives to municipal development according to the data of the Federal Treasury on the execution of consolidated budgets of municipalities of Russia's Far Eastern constituent entities[5] for 2011, 2015

[3] On strategic planning in the Russian Federation: Federal Law 172-FZ, dated June 28, 2014. Available at: https://www.consultant.ru/document/cons_doc_LAW_164841/

[4] It was in the Far East that the first federal regional programs were tested, free economic zones appeared; and currently territories of advanced socio-economic development, the free port of Vladivostok are being formed (Synthesis of scientific..., 2011; Leonov, 2021). At the present stage, the surge in attention to the development of the Far East is explained by the importance of taking into account the uncertainty of the influence of external factors in the process of the sanctions war in the difficult financial situation in the country.

[5] In accordance with Presidential Decree 632, at the end of 2018 the territorial composition of the Far Eastern Federal District was expanded to include two regions that were previously administratively part of the Siberian Federal District – Zabaikalsky Krai and the Republic of Buryatia. In this paper, the composition of the Far Eastern Federal District is considered within the boundaries of the said decree and includes 11 constituent entities of the Russian Federation: the republics of Sakha (Yakutia) and Buryatia, Khabarovsk, Primorsky, Kamchatka and Zabaikalsky krais, Amur, Magadan and Sakhalin oblasts, Jewish Autonomous Oblast (JAO), and Chukotka Autonomous Okrug (ChAO) (see Presidential Decree 632, dated November 3, 2018 "On amendments to the list of federal districts approved by Presidential Decree 849, dated May 13, 2000"). Therefore, all the retrospective data in the article were recalculated regarding the "new" composition of Russia's Far Eastern constituent entities.

and 2020. We considered all the revenues of the local budgets of Far Eastern entities: their own (tax and nontax) revenues, as well as the volume and dynamics of transfers both in general and according to their individual types (grants-in-aid, subsidies, subventions). Data on the state of municipal budgets are presented for each of the considered Far Eastern entities in an aggregated form by municipal district and urban okrug. The consolidated budgets of all 164 municipal districts (MD) and 66 urban okrugs (UO) of eleven Far Eastern constituent entities were analyzed.

Methods of state regulation of municipal development

Methods of state regulation of municipal development are diverse, are used in different countries and cover a system of legal, economic and financial methods.

Legal methods include regulatory and legislative acts developed and applied by the authorities to regulate the process of territorial development and redistribution of powers. At the same time, as J. Kornai noted, the stability of the legislative framework is extremely important in any economic situation, but in changeable economic conditions, uniform stable "rules of the game" for ensuring territorial development become particularly important (Kornai, 1986). Unfortunately, the modern Russian legal framework, despite the efforts of the RF Government to adjust it, remains quite aggressive in terms of creating favorable institutional conditions for regional development. The denunciation of the European Charter of Local Self-Government[6] and the uncertainty concerning the adoption of draft Federal Law 40361-8 "On the general principles of organizing local self-government in a unified system of public authority"[7] that passed the first reading in the State Duma show that legal methods of influencing municipal development in Russia are still at the stage of formation (Barabash, Leonov, 2023).

In other countries, unlike Russia, there is a certain stability of the legislative framework in terms of promoting the development of MEs, but this does not diminish the importance of issues of economic support for municipalities, which turn out to be significant, albeit to varying degrees, for all federal nation-states[8].

At the same time, economic methods of regional development management in Russia cover homogeneous (targeted regional programs) and local instruments for promoting regional development based on the concept of "growth poles" (free and special economic zones, zones of territorial development, territories of advanced socio-economic development, free port of Vladivostok), while in foreign countries in recent decades, the authorities have often tried to solve the economic problems of municipalities, encouraging the consolidation of the latter, which formally leads to a reduction in the number of MEs and to the actual "compression" of the territorial structure of the LSG itself[9].

An analysis of publications devoted to the assessment of the economic efficiency of the made enlargements of municipalities in the European Union (Pevcin, 2017b) and Australia (Dollery et al., 2007) shows that most often the process of merging municipalities is welcomed and supported by state

[6] The launch of the special military operation in February 2022 and the subsequent withdrawal of Russia from the Council of Europe in March showed that the denunciation by the Russian Federation of a number of European conventions is only a matter of time. A year later, on February 16, 2023, the RF State Duma denounced the validity of 21 agreements with the EU. Among other things, Russia withdrew from the European Charter of Local Self-Government (see: The State Duma approved the termination of international treaties of the Russian Federation. Available at: https://pravo.ru/news/245315/).

[7] On the general principles of organizing local self-government in the unified system of public authority: Draft law 40361-8. Available at: https://sozd.duma.gov.ru/bill/40361-8

[8] Making Decentralization Work: A Handbook for Policy-Makers. Available at: https://dx.doi.org/10.1787/g2g9faa7-en

[9] Multi-level governance reforms: Overview of OECD country experiences. Available at: https://doi.org/10.1787/9789264272866-en

authorities, but it is based not on quantitative, but only on qualitative assessments of the consequences. In reality, only a small number of the geographically smallest municipalities out of the total mass of MEs experience a scale effect at the same time (Pevcin, 2017a).

In fact, it can be stated that the question of quantifying the effectiveness of the use of economic instruments of regional policy remains open, although the results of research (Mikheeva, Ananyeva, 2011; Sukharev, 2015; Minakir, Prokapalo, 2017; Leonov, 2020; Kuznetsova, Babkin, 2021; Temple, 1994; Dollery et al., 2007; Pevcin, 2017b) show that without an adequate financial base, the effectiveness of the use of economic instruments of regional development is low.

Financial methods for promoting municipal development include measures of direct budget financing, implying the allocation of funds for the implementation of priorities of regional strategies in accordance with development programs, and measures of tax policy and intergovernmental transfers, which are allocated to municipalities according to specified criteria, and their volumes vary in accordance with federal and regional formal methods of allocating budget resources. These methods are largely normative, and several Russian and foreign studies are devoted to the problems of their use[10] (Belov, 2012; Levina, 2017; Fratesi, Perucca, 2014); but issues concerning the quantitative assessment of the impact of financial methods on the territorial development of municipalities are far from being resolved in Russia (Kotov, 2020; Kulakovsky, 2019) as well as abroad (Dollery et al., 2007; Pevcin, 2017a). A significant number of indicators and the divergence of their quantitative assessments leave unresolved the problem of constructing an integral quantitative indicator of the response of local budgets to state policy measures in relation to municipalities.

We would like to emphasize that under the conditions of sanctions pressure, it is difficult, if not impossible, to attract funds from international financial institutions and foreign investments to promote the development of Russian municipalities, despite the sets of regulatory and legal documents[11] created in most constituent entities of Russia. This further emphasizes the importance of rational use of budgetary measures to promote municipal development and increase attention to the effectiveness of this management. The emerging financial constraints of regional development bring to the fore the issues of assessing the comparative activity of local budgets in terms of reaction to public policy measures for Russia.

Existing approaches to quantifying the reaction (activity) of local budgets to measures of state regulation of municipal development

To analyze the state of municipal budgets and assess their stability in the face of budgetary policy measures to promote municipal development in Russia, traditional methodological approaches are used, including the analysis of absolute and integral indicators, construction of relative coefficients, methods of horizontal and vertical comparison, aggregation and rating construction.

Most of the existing methods for assessing the state of local budgets take into account certain indicators of budgets' financial stability (Ermakova, Bolyakina, 2012; Solomko, 2019), a number of methods focus only on the analysis of the balance of local budgets (Pinskaya, Ziganshina, 2015), some

[10] Report of the World Observatory on Subnational Government Finance and Investment – key findings. Available at: https://www.sng-wofi.org/publications/2019_SNG-WOFI_REPORT_Key_Findings.pdf

[11] For example, in Khabarovsk Krai, Law 130 of Khabarovsk Krai, dated November 23, 2011 "On state investment policy in Khabarovsk Krai" (as amended December 26, 2022) and Resolution of the Government of Khabarovsk Krai 55-pr, dated March 14, 2012 "On measures for the implementation of investment projects on the territory of Khabarovsk Krai on the terms of public-private partnership" are designed to fulfill a stimulating role in the development of MEs.

are aimed at analyzing program-targeted budget expenditures (Makarova, 2012). N.I. Yashina and colleagues came closest to the analysis of resources and a comprehensive assessment of the activity of local budgets (Yashina, Emelyanova, 2008; Yashina et al., 2012); they propose a methodology under which they consider the state of local finances in relation to the effectiveness of the organization of transfer policy of municipalities. However, they analyze the situation regarding municipal budgets as part of the consolidated budgets of RF constituent entities.

The methodology for analyzing the financial state of municipal budgets, based on the methodological approaches of the teams of N.I. Yashina and E.A. Ermakova, is given by N.Yu. Korotina (Korotina, 2014). She suggests evaluating the budgetary resources of municipalities and the results of their use by a significant number of budget parameters arranged into five groups. The parameters estimated include indicators of the balance of the local budget, financial independence, the orientation of municipal budget policy in the field of budget expenditures, budget sustainability, debt dependence of the municipality. However, the approach proposed by N.Yu. Korotina has not been verified both with regard to the formation of an integral indicator and the construction of a consolidated rating of the susceptibility of the municipal budget to state budget regulation measures. This did not allow assessing the effects of the tax and transfer policy of state bodies in relation to MEs or building a comparative rating of LSG bodies according to the extent of their reaction to the activities of state authorities in relation to promoting municipal development.

In general, the analysis of approaches to assessing the response of local budgets to measures of state stimulation of the development of MEs shows the widespread use of a multicriteria method for assessing the rationality of management decisions in the field of budgetary policy. At the same time, the importance of the transition from a set of local coefficients to the construction of an integral coefficient is emphasized (Yashina et al., 2012); this will complement the set of comparable data characterizing certain aspects of the response of the budget of ME to the actions of state management bodies with a composite index comprehensively describing the reaction of the budget of the municipality to measures of state regulation of its development.

The main requirements that should be taken into account when constructing a composite index describing the activity of the local budget to the measures of state budgetary stimulation of the development of the municipality are reduced to the following points:

1) quantitative assessment of the response of the ME budget to the actions of state bodies in relation to promoting its development should be carried out based on the results of an analysis of the dynamics of changes in the integral indicator of budget activity, which comprehensively takes into account the local budgetary effects of state regulation of municipal development;

2) integral indicator of the comparative budget response to state influence from any municipality should take into account the level of resource provision of the municipalities' powers (the degree of coverage of the budget obligations of ME increases or decreases as a result of the influence of state authorities); dynamics of the financial independence of the municipality as a result of the actions of state agencies, reflected by the parameters of the condition of the municipality's tax system and the dynamics of the coefficient of self-balancing of the local budget; changes in the degree of financial provision of social obligations of local budgets as a result of state regulation of municipal development; extent of participation of local self-government bodies in the implementation of the concept of financing significant state events (the higher, the better) in their own territory;

3) quantitative assessment of the degree of activity of the municipal budget to the regulatory impact of state bodies is carried out by "consolidating" the set of considered indicators of the state of the budget system of ME into a single integral indicator. The analysis of existing methods of "consolidation" of local indicators into an aggregate integral indicator (rating, normalization of indicators, maximin method) indicates that the most rational in such a case is the maximin method (Barabash et al., 2014). The maximin method allows not only determining the rank (place) of the region among other municipalities by the considered local indicator, but also quantifying the value of the integral rating of the municipality by the totality of the considered parameters.

We should note that the existing rating estimates used to determine the comparative advantages of regions by various indicators[12] (Prokapalo, 2003; Korotina, 2014; Yashina et al. 2020) allow ranking regions by their place on the scale of selected indicators, but do not quantify the magnitude of the "gap" between ranks (places). From our viewpoint, in order to form an idea of the level of activity of the budgets of various municipalities it is not enough just to indicate the rank (place) of the municipality on the scale of the comparative activity of the municipality's budget in relation to public policy measures. It is necessary to answer an important question for regional administrations: how is the budget of a particular MO "more active" in quantitative terms than the budget of its predecessor, by what local indicators can it be "caught up and overtaken" in terms of reaction to the impact of specific measures of state budgetary policy?

These requirements were implemented in our own approach based on the methodological approaches of N.I. Yashina (Yashina, Emelyanova, 2008; Yashina et al., 2012), N.Yu. Korotina (Korotina, 2014) and M.N. Solomko (Solomko, 2019).

Due to the reasons mentioned above, the technique is implemented in two stages.

At the first stage, a system of local coefficients is calculated for each municipality, taking into account the main above-mentioned requirements for indicators that assess the response of the municipality's budget to the impact of regulatory measures of state authorities.

At the second stage, for each municipality, using the maximin method, the local budget parameters obtained at the first stage are "consolidated" into an integral indicator of budget activity related to measures of state stimulation of regional development. Integral indicators are calculated for each municipality in each of the analyzed periods. The dynamics of changes in the integral indicators of budgetary activity obtained at the second stage quantitatively reflects the degree of reaction of the municipalities under consideration to budgetary measures of state regulation of municipal development.

A formal description of the methodology is presented below.

At the first stage, a number of local indicators are calculated for the budget of each specific municipality in each analyzed period, which to the greatest extent characterize the level of dependence of specific types of municipality activities on measures of budgetary activity of state authorities.

The coefficient of resource provision of the powers of the municipality (C_{rpp}) characterizes the degree of total coverage of the budget obligations of LSG bodies (expenses of the municipality) by the total revenues of the municipality:

$$C_{rpp} = R \times 100 / E, \quad (1)$$

where R – total amount of local budget revenues;
E – total amount of local budget expenditures.

[12] Ratings of investment attractiveness of Russian regions. 2000–2001. Ekspert, 2001, 41, 97–120; Tirskikh T., Galieva G. (2022). Investment attractiveness of the regions: The state has supported the status quo. Available at: https://www.raexpert.ru/researches/regions/regions_invest_2022/

The value of C_{rpp} coefficient is influenced by the distribution of expenditure obligations formed in the budget system between the levels of government, the ratio of revenue receipts of the municipality and intergovernmental transfers, as well as the efficiency of the use of budget resources in general. Because of this, the coefficient characterizes the resource provision (execution) of the powers of the municipality. If the value of C_{rpp} tends to 100, then the risk of a problem of financial failure of the municipality's expenses is small.

The coefficient of self-balance of the local budget (C_{sb}) characterizes the balance of the municipal budget, the degree to which the total amount of budget expenditures for the implementation of its own powers (excluding subventions) is covered by its own revenues without taking into account the approved amount of gratuitous receipts (grants-in-aid and subsidies)[13].

$$C_{sb} = [R - (GR_{gia} + GR_{subs})] \times 100 / / (E - GR_{subv}), \quad (2)$$

where GR_{gia} – gratuitous receipts in the form of grants-in-aid;

GR_{subs} – gratuitous receipts in the form of subsidies[14];

GR_{subv} – gratuitous receipts in the form of subventions;

R – total amount of local budget revenues;

E – total amount of local budget expenditures.

The higher the value of C_{sb}, the more the municipality covers its own expenses with its own revenues. In fact, we are talking about a necessary, but insufficient condition for the financial independence of the local budget from higher levels of the budget system.

The coefficient of financial independence (C_{fi}) shows the effectiveness of territorial financial policy, other things being equal, and represents the share of local budget revenues that depends on the efforts of municipal authorities to increase tax revenues and municipal property.

$$C_{fi} = (TR + NTR) \times 100 / R, \quad (3)$$

where TR – tax revenues of the local budget;

NTR – nontax revenues of the local budget;

R – total amount of local budget revenues.

The higher the value of C_{fi}, the less the municipal authorities depend on the financial decisions of state bodies.

The coefficient of direct social dependence of the budget (C_{dsd}) characterizes the degree of financial provision of social obligations of the municipality. It shows the share of financial assistance from higher-level budgets in the revenues of the municipality.

$$C_{dsd} = (GR_{gia} + GR_{subs}) \times 100 / R, \quad (4)$$

where GR_{gia} – gratuitous receipts in the form of grants-in-aid;

GR_{subs} – gratuitous receipts in the form of subsidies;

D – total amount of local budget revenues.

C_{dsd} evaluates the activity of the horizontal redistribution policy pursued by state bodies. When calculating it, the ratio of accepted grants-in-aid and subventions (rather than all intergovernmental transfers from higher-level budgets) and the total amount of local budget revenues is taken into account[15].

[13] It is taken into account that subsidies are allocated to the municipality for specific purposes and provide for co-financing from the region; subventions are directed to the fulfillment of federal (regional) powers delegated to the municipality (for example, payment of unemployment benefits, etc.), and only grants-in-aid can be freely used by the regions without regard to the higher level of government.

14 We should note that other intergovernmental transfers cannot replace subventions, since they are provided for the performance of municipal powers rather than the powers of an RF constituent entity; but they are close to subsidies, although sometimes they do not involve co-financing. Here and further, unless specifically indicated, the amount of subsidies to the municipality includes other intergovernmental transfers. The latter are provided for financial support of public obligations arising from the exercise of the powers of local self-government bodies on issues of local significance.

[15] This is important, since the amount of subventions does not depend on the financial condition of the territory and does not affect the level of its financial independence, but is determined only taking into account the compensation of specific expenditure obligations of higher budgets delegated to the municipality level.

The more budgetary resources are accumulated at higher levels of the budget system for the subsequent equalization of the budgetary provision of municipalities, the higher the coefficient value, that is, the more the municipality depends on the alignment policy carried out within the framework of the country's budget system (Yashina, Emelyanova, 2008).

The coefficient of overregulation of state support measures (financial assistance for the implementation of targets) (C_{ossm}) shows the share of related transfers in the total amount of financial aid received from higher budgets.

$$C_{ossm} = GR_{subs} \times 100 / (GR_{gia} + GR_{subs}), \quad (5)$$

where GR_{gia} – gratuitous receipts in the form of grants-in-aid;

GR_{subs} – gratuitous receipts in the form of subsidies.

When receiving grants-in-aid, the municipality does not impose any additional financial obligations on itself; but in order to receive a subsidy, the municipality must provide shared co-financing of the expenditure obligations specified by government agencies. In fact, subsidies are an indirect tool for financing regional policy. With their help, government agencies are trying to push the municipality to finance those expenses that are priority from the point of view of the regional center.

All other things being equal, the higher the value of the coefficient of overregulation of state support measures, the more the local budget and local self-government bodies participate in the implementation of the regional concept of financing activities significant for government agencies on their local territory. The low and decreasing value of the coefficient of overregulation means that the ME is increasingly becoming a passive recipient of grants-in-aid from the regional budget. The value of the coefficient is influenced by the regional financial policy of government agencies, which determine the types of intergovernmental transfers and the methodology of their distribution between MEs, thereby laying down the degree of activity and the principles of horizontal distribution of aid between budgets.

At the second stage, for each municipality and each analyzed period, the calculated local indicators (1–5) are "consolidated" in two steps into an integral rating[16] of comparative activity of the municipal budget in relation to the measures of state budgetary policy (Barabash et al., 2014).

To do this, at the first step, using the maximin method, each of the calculated local coefficients (1–5) is normalized for the entire set of analyzed municipalities according to formulas (6–7). The normalized local ratings obtained are indicated by an additional index * (C^*_{rpp}, C^*_{sb}, C^*_{fi}, C^*_{dsd}, C^*_{ossm}).

The specific normalization by the maximin method of budget coefficients (1–5) at the first step is carried out as follows:

– if the maximum value of the calculated indicator of a particular municipality corresponds to the best position of the municipality in the list, as is typical of indicators (1–3) and (5), then

$$C^* = (Cur^{val.} - Min^{val.}) \times 100 / / (Max^{val.} - Min^{val.}); \quad (6)$$

– if the maximum value of the ranked indicator corresponds to the worst position of the region in the list, similar to indicator (4), then

$$C^* = (Max^{val.} - Cur^{val.}) \times 100 / / (Max^{val.} - Min^{val.}), \quad (7)$$

where $Cur^{val.}$ – current value of the budget indicator for the municipality in question;

$Max^{val.}$ – maximum value of the budget indicator from the analyzed sample of municipalities;

$Min^{val.}$ – minimum value of the budget indicator from the analyzed sample of municipalities.

[16] The rating of a municipality is a quantitative expression of the comparative magnitude of a municipality's response to state budgetary policy measures, assessed in percentage points from the best response value among the entire set of analyzed municipalities; the rank of a municipality is the place that a municipality occupies among the many analyzed municipalities in terms of the degree of activity of response to state budgetary policy measures.

The local ratings of municipalities (C*) calculated by formulas (6–7) are understood as the magnitude of the lag (excess) of the regional value of each of the five evaluated indicators from the maximum (minimum) value of a specific normalized indicator (1–5) for the entire set of analyzed municipalities. This gap – the amount of lag or excess of the parameter value of a particular municipality over the maximum (minimum) value of this parameter among the totality of the considered budgets of municipalities – is measured in percentage points (p. p.) from 0 to 100, which helps to place municipalities on a normalized line of values of budget coefficients (1–5) for the totality of the analyzed municipalities.

At the second step of the second stage of the methodology, using percentage points of the lag of the normalized coefficients from the best (worst) value among the indicators for the entire set of municipalities, it is possible to calculate a comparative integral rating of the activity (reaction) of the municipality to the measures of state budgetary policy (C^*_{int}).

The comparative integral rating of the activity of municipalities in relation to measures of state budgetary policy is calculated by formula (8) as the sum of its local normalized ratings (C^*_{rpp}, C^*_{sb}, C^*_{fi}, C^*_{dsd}, C^*_{ossm}) divided by the total number of evaluated ratings (in our case – 5):

$$C^*_{int} = (C^*_{rpp} + C^*_{sb} + C^*_{fi} + C^*_{dsd} + C^*_{ossm}) / 5. \quad (8)$$

The comparative integral rating of budget activity (C^*_{int}) obtained as a result of calculations for a particular municipality will be in the range from 0 to 100 p.p. Moreover, the closer the calculated rating is to 100 p.p., the higher the values of local coefficients (1–5) for this particular ME and the more active the reaction of this municipality to the regulatory impact of the state budget politics in comparison with other municipalities. In fact, ranking municipalities by the magnitude of the comparative integral rating helps not only to determine the magnitude of the rating, but also the place (rank) of each municipality on the normalized scale of municipalities by the magnitude of the response of the ME to state budgetary policy measures.

Results and discussion

The implementation of any methodological approach requires an appropriate information base. We are aware that the applied results in terms of assessing the response of MEs to state budgetary policy measures are important both for the governments of specific constituent entities of the Russian Federation and for a comparative assessment of the reaction of municipalities of a number RF constituent entities to the regulatory impact on the part of government agencies.

When using this approach, the regional government can obtain results that allow us to make a conclusion concerning the comparative effectiveness of state budget policy measures (grants-in-aid, subsidies, subventions, other transfers) in relation to the policy of stimulating the development of a particular type of municipalities (MD or UO).

However, from the point of view of the federal level of government, in modern conditions of permanent budget deficit, applied and scientific research requires a more aggregated approach to determine which local budgets of RF constituent entities respond more actively to state budget policy measures. In this case, when assessing the rating of municipalities, the degree of fragmentation of the grid of municipal units in the RF constituent entity is not as important as the availability of a comparable homogeneous database of municipal budgets for all constituent entities of Russia participating in the analysis. In this study, a similar macroapproach was implemented using the example of the Far Eastern Federal District.

Verification of the methodology was carried out on the materials of the Federal Treasury so as to operate with data on the consolidated budgets of municipal districts and urban okrugs. Taking into account that information on the state of local budgets of RF constituent entities for 2011–2020[17] is presented by the Federal Treasury in an aggregated form for all MDs and UOs of each RF constituent entity[18], calculations were performed for the consolidated budgets of municipal districts and urban okrugs of each Far Eastern constituent entity. The methodology was tested for 164 MDs and 66 UOs of the Far Eastern Federal District. Such an approach makes it possible to determine in which type of ME (municipal districts or urban okrugs) and in which constituent entity of the Federation the budget is more sensitive to the impact of state budgetary policy.

A uniform three-digit scale was used to compare the integral ratings of the activity of budgets of Far Eastern municipalities related to measures of state policy aimed at promoting municipal development (*Tab. 1*).

Such an approach makes it possible to distinguish three groups of municipalities in Russia's Far Eastern constituent entities, differing in the rating and, as a consequence, in the nature of the response of the ME's budget to measures of state regulation of municipal development.

Group I with a rating value from 66.1 to 100 percentage points included municipalities that showed the greatest response to measures of state budgetary regulation among the entire set of analyzed budgets of Far Eastern municipalities. Group II (33.1–66 p.p.) includes MEs, which are characterized by an average comparative level of reaction to measures of state budgetary policy. Group III (0–33 p.p.) includes municipalities that are relatively neutral to government incentive measures and that show the least pronounced response to state influence among the budgets of all Far Eastern municipalities.

We emphasize that the value of the integral activity rating characterizes not the absolute magnitude of the reaction of the municipal budget to state support measures, but the relative one, showing by how many percentage points this municipality reacts more actively to state intervention in comparison with other municipalities within the federal district.

The calculated values of the integral ratings characterizing the activity of the budgets of Far Eastern MEs in relation to budgetary measures of state regulation are presented in *Table 2*.

Table 1. Intervals of values of the integral rating of the activity of budgets of municipalities in relation to state regulation measures

Group	The nature of the reaction of municipalities to budgetary measures of state regulation	Value of the integral rating, p.p.
I	Active response to measures of state budgetary regulation	100–66.1
II	Average response to measures of state budgetary regulation	66–33.1
III	Neutral (weak) response to measures of state budgetary regulation	33–0

Note: best rating indicator = 100 p.p.
Source: own compilation.

[17] Since 2021, the Federal Treasury has stopped publishing data on the state of local budgets in the public domain.

[18] See: Information on the execution of the consolidated budget of the RF constituent entity and the budget of the territorial state extra-budgetary fund. Available at: https://roskazna.ru/ispolnenie-byudzhetov/konsolidirovannye-byudzhety-subektov/

Table 2. Dynamics of calculated integral ratings of activity of budgets of Far Eastern municipalities to measures of the state budgetary policy for stimulating municipal development, p.p.

RF constituent entity	2011		2015		2020	
	MD*	UO**	MD	UO	MD	UO
Republic of Buryatia	29.4	76.0	34.6	67.0	29.9	42.1
Republic of Sakha (Yakutia)	51.4	60.7	34.1	67.4	41.8	80.5
Primorsky Krai	74.6	53.6	64.3	66.2	91.0	81.6
Khabarovsk Krai	62.6	79.7	53.8	70.1	46.1	56.0
Amur Oblast	30.3	28.8	30.0	30.9	56.0	70.9
Kamchatka Krai	40.5	46.1	37.5	60.1	45.7	84.5
Magadan Oblast ***	34.2	39.6	28.8	48.4	-	42.5
Sakhalin Oblast ***	14.8	9.8	52.4	30.6	-	27.0
Jewish Autonomous Oblast	54.1	86.8	36.0	64.0	45.2	72.0
Chukotka Autonomous Okrug	38.4	77.3	8.5	38.7	24.2	31.6
Zabaikalsky Krai	54.5	61.1	55.7	67.0	43.1	49.1

* MD – municipal district
** UO – urban okrug
*** By 2020, as a result of the reform of the structure of municipalities, 18 UOs were functioning on the territory of the Sakhalin Oblast, and 9 UOs were functioning on the territory of the Magadan Oblast.
Note. The best indicator of the integral rating (100 percentage points) corresponds to the indicators of the ideal municipality. The ideal municipality is the one that, for each of the five estimated local parameters (1–5), shows the best value among the many budgets of the Far Eastern municipalities under consideration. In other words, the closer the value of the integral rating to 100 p. the higher is the place (rank) of the budget of this municipality in the aggregate budgets of the municipalities of the Far Eastern Federal District in terms of the activity of response to budgetary measures of state support for municipal development.
Calculated according to: Information on the execution of the consolidated budget of the RF constituent entity and the budget of the territorial state extra-budgetary fund. Available at: https://roskazna.ru/ispolnenie-byudzhetov/konsolidirovannye-byudzhety-subektov/

The results of the calculations show a sufficiently high polarization and dynamism of the values of the integral ratings of the response of Far Eastern MEs to budgetary measures of state regulation. The most significant influence on the condition and dynamics of the integral activity rating is exerted by the magnitude of indicators (3–5). We are talking about the coefficients of financial independence, the direct social burden of the local budget and the coefficient of overregulation of state support measures (financial assistance for the implementation of targets).

The data in Table 2 show that the budgets of urban okrugs react much more actively to state support measures, since the values of the integral rating of UOs in most of the analyzed RF constituent entities are higher than the values of the ratings for MDs.

The budgets of UOs in the Far Eastern Federal District not only react more actively to state measures in comparison with the budgets of MDs, but throughout the analyzed period they formed Group I – the group of the most active municipalities in terms of response of local budgets to state regulation measures.

In 2011, Group I with an integral rating of 66.1–100 percentage points included the budgets of four RF constituent entities, while in 2015 and 2020 – five. As for the municipal districts, only the budgets of Primorsky Krai MDs twice demonstrated a rating sufficient to enter Group I – 74.6 percentage points in 2011 and 91 percentage points in 2020 (see Tab. 2).

We should note that municipal entities of Primorsky Krai throughout the analyzed period occupied leading positions in terms of the active

response of their budgets to the measures of state budgetary policy, showing the highest values of integral ratings among the budgets of UOs and the budgets of MDs within the federal district. In fact, this makes it possible to consider Primorsky Krai a leader in the effective response of the budgets of the region's MEs to measures of state stimulation of municipal development.

In contrast to the situation in Primorsky Krai, municipalities in Chukotka Autonomous Okrug (ChAO) were clear outsiders among the Far Eastern municipalities. The MEs of Chukotka showed a "fading" reaction of local budgets to state support measures throughout the analyzed stage. The activity ratings of both the budgets of UOs and the budgets of MDs in ChAO dropped from the level of Group I–II in 2011 to the level of Group II–III in 2015, being among the lowest in Group III in 2020.

The calculations show (*Tab. 3*) that the affiliation of a municipality to an urban okrug does not always automatically mean a more significant budget response to regulatory impact in comparison to that of a municipal district. Thus, in seven of the eleven Russia's Far Eastern constituent entities, the budgets of MDs demonstrated an average or above average level of response to state incentive measures in the Far Eastern Federal District[19]. In practice, this means that the budgets of the Far Eastern MDs throughout the analyzed period acted as a kind of "anchors for the stabilization of budgetary activity".

During the analyzed period, a special situation developed regarding the budgets of the Sakhalin and Magadan oblasts. At the turn of 2016–2020, during the reform of local self–government, these regions switched from a two-level system of local self-government ("municipal districts – settlements") to a single-level one, when all municipal districts of these regions were transformed into urban okrugs (9 in the Magadan Oblast and 18 in the Sakhalin Oblast, respectively).

Table 3. Distribution of budgets of Far Eastern municipalities by groups of values of integral activity ratings in relation to state regulation measures

RF constituent entity	2011			2015			2020		
	I	II	III	I	II	III	I	II	III
Republic of Buryatia	UO*		MD	UO	MD			UO	MD
Republic of Sakha (Yakutia)		UO, MD		UO	MD		UO	MD	
Primorsky Krai	MD**	UO		UO	MD		MD, UO		
Khabarovsk Krai	UO	MD		UO	MD			MD, UO	
Amur Oblast			MD, UO			MD, UO	UO	MD	
Kamchatka Krai		MD, UO			MD, UO		UO	MD	
Magadan Oblast		MD, UO			UO	MD		UO	
Sakhalin Oblast			MD, UO		MD	UO			UO
Jewish Autonomous Oblast	UO	MD			MD, UO		UO	MD	
Chukotka Autonomous Okrug	UO	MD			UO	MD			MD, UO
Zabaikalsky Krai		MD, UO		UO	MD			MD, UO	

* UO – urban okrug; ** MD – municipal district.
Source: compiled according to the data in Tables 1 and 2.

[19] We are talking about the municipal districts of Primorsky, Khabarovsk, Kamchatka and Zabaikalsky krais, the Jewish Autonomous and Sakhalin oblasts, the Republic of Sakha (Yakutia).

In 2015, budgets of UOs in the Magadan Oblast had an activity rating of 48.4 percentage points, MDs – 28.8 percentage points, in the Sakhalin Oblast – 30.6 and 52.4 percentage points, respectively. That is, from the point of view of the comparative reaction to the measures of state regulation in the Magadan Oblast, the activity ratings of the budgets of UOs were significantly higher than those of MDs; the situation in the Sakhalin Oblast was reverse.

According to 2020 data, the change of municipal district to urban okrug in the Magadan and Sakhalin oblasts led to a decrease in the consolidated rating of the activity of the budgets of urban okrugs (see Tab. 2). At the same time, in the Magadan Oblast, the budgets of urban okrugs, while retaining their place in Group II and demonstrating an average response to the regulatory effects of state budget policy, showed a quantitative deterioration in the value of the integral rating itself (from 48.4 p.p. in 2015 to 42.5 p.p. in 2020). In the Sakhalin Oblast the situation regarding the response of the budgets of new urban okrugs to state measures of influence has deteriorated significantly over the same time. In 2020, in the Sakhalin Oblast, the budgets of the UOs demonstrated complete neutrality to measures of state influence and, as a result, the worst rating (27 p.p.) among Far Eastern MEs.

The estimates obtained show that the transition from a two-level to a single-level system of municipalities did not increase the response of local budgets to state regulation measures in comparison with the budgets of other municipal entities of the Far Eastern Federal District.

The revealed significant polarization of municipal budgets in the Far Eastern Federal District raises the question for regional governments about what is more effective – to maintain a two-level structure of municipalities ("municipal district – settlements") in the RF constituent entity or to abandon municipal districts in favor of urban okrugs? The issue is debatable, requiring calculations and substantiation for each specific case and constituent entity of the Russian Federation (Puzanov, 2021; Barabash, Leonov, 2023).

We should note that the comparative reaction of local budgets to state impact measures in the municipalities of the Far Eastern Federal District changed quite dynamically over the analyzed period (see Tab. 2, 3), and the surplus of the regional budget was not a guarantee of an active response of the budgets of municipalities of this RF subject to state support measures; the situation was rather the opposite. Thus, in the Sakhalin Oblast, which is characterized by surplus budget, the budgets of municipalities show mostly neutral, if not indifferent, response to the condition and dynamics of state policy measures in comparison with the budgets of other Far Eastern municipalities. However, more often the Far Eastern regions show the opposite situation, when the municipal budgets of RF constituent entities with financially problematic budgets actively respond to state support measures. Moreover, this process is observed both in the northern (Republic of Sakha (Yakutia), Kamchatka Krai) and in the southern (Jewish Autonomous Oblast and Amur Oblast, Primorsky and Khabarovsk krais) regions of the Far East.

Over the ten analyzed years, a relatively high rating of the stability of the budgets of MEs in relation to state budget support measures was noted in Primorsky, Khabarovsk and Zabaikalsky krais and in the Jewish Autonomous Oblast. The budgets of municipalities in the Republic of Sakha (Yakutia), the Amur Oblast and Kamchatka Krai demonstrated an improvement in the response to state regulation measures in comparison with other municipalities of the Far Eastern Federal District. At the same time, the situation has relatively worsened for the budgets of municipalities of the Republic of Buryatia and Chukotka Autonomous Okrug; municipalities of

the Magadan and Sakhalin oblasts have reformed their local self-government systems over the years of observation, switching to a single-level type that includes only urban okrugs, and in general have worsened budget indicators in terms of response to measures of state stimulation of municipal development.

We should take into account that in the process of formation and development of local self-government, most countries face financial problems[20], and the issue is often solved by improving the tax sphere. The target areas and prospects for strengthening the financial foundations of ME functioning include improving the tools for developing the revenue base of local budgets in relation to personal income tax, property tax revenues, taxation of small businesses (Pechenskaya-Polishchuk, 2020, p. 80). This also applies to the problem solved in a significant number of foreign countries, which concerns the redistribution of personal income tax from the place of work to the place of residence of the taxpayer after the initial payment of tax at the place of work (Kuznetsova, 2006). It is necessary to pay attention to the proposals made by the scientific community on giving the status of "local" to the entire group of property taxes, since it is LSG bodies that can effectively influence their administration (Leonov, 2021).

Conclusions

The approach proposed in the paper allows us to quantify the integral rating of municipalities' budget activity, as well as to determine the rank (place) of municipalities on the normalized scale of values of the comparative activity of budgets of MEs in terms of state budget policy measures.

Verification of the methodology was carried out on the example of municipalities of the Far Eastern Federal District for 2011–2020.

It was revealed that in the Far Eastern Federal District, throughout the analyzed period, the group of municipalities that were most active in terms of their budgets' response to state regional policy measures was formed mostly by UOs.

The budgets of MDs in the Far Eastern Federal District reacted less to state support measures. However, throughout the entire period, in seven of the eleven Far Eastern constituent entities of Russia, the budgets of MDs showed an average or above average level of response to government incentive measures, acting as a kind of "anchors of stabilization of budgetary activity" for their municipalities.

Local budgets of the Far Eastern constituent entities of Russia with financially problematic budgets are more actively responding to state support measures. Moreover, this process is observed both in the northern (Republic of Sakha (Yakutia), Kamchatka Krai) and in the southern (Jewish Autonomous Oblast, Amur Oblast, Primorsky and Khabarovsk krais) regions of the Far East of Russia.

The budgets of municipalities in Primorsky Krai throughout the analyzed period occupied a leading position among MEs of the Far Eastern Federal District, demonstrating the highest values of integral ratings of budget activity for UOs and MDs. The municipalities of Chukotka Autonomous Okrug became obvious outsiders with a "fading" reaction to state support measures. The ratings of budget activity of UOs and MDs in Chukotka Autonomous Okrug dropped from the level of group I–II in 2011 to the level of group III in 2020.

It is shown that the formation of single-level systems of local self-government in the Magadan and Sakhalin oblasts did not contribute to the growth of activity of the budgets of newly formed

[19] Report of the World Observatory on Subnational Government Finance and Investment – key findings. Available at: https://www.sng-wofi.org/publications/2019_SNG-WOFI_REPORT_Key_Findings.pdf

urban okrugs. This poses a dilemma for regional governments – to maintain a two-level structure of municipalities in the region ("municipal district – settlements") or to abandon municipal districts in favor of urban okrugs and a single-level system of LSG? This issue is debatable; it requires calculations and justifications for each specific case and constituent entity of Russia.

Scientific significance of the performed research lies in the development of a methodology for quantifying the comparative activity of local budgets in terms of measures of state support for municipal development. Verification of the methodology on the example of the municipalities of the Far Eastern Federal District showed that the proposed approach has real practical significance.

References

Barabash E.S., Leonov S.N. (2023). Financial and structural prospects of local government reform in Russia. *Izvestiya Baikal'skogo gosudarstvennogo universiteta*, 33(1), 46–56 (in Russian).

Barabash E.S., Leonov S.N., Primachenko L.S. (2014). Estimation of the effectiveness of state regional policy of municipalities. *Vestnik Omskogo universiteta. Seriya: Ekonomika=Herald of Omsk University*, 2, 128–136 (in Russian).

Belov A.V. (2012). Effektiven li tsentralizm? *Optimizatsiya byudzhetnykh otnoshenii v Rossiiskoi Federatsii* [Is Centralism Effective? Optimization of Budgetary Relations in the Russian Federation]. LAP LAMBERT Academic Publishing.

Dollery B., Byrnes J., Crase L. (2007). Is bigger better? Local government amalgamation and the South Australian rising to the challenge inquiry. *Economic Analysis & Policy*, 37(1), 1–14. DOI: https://doi.org/10.1016/S0313-5926(07)50001-9

Ermakova E.A., Bolyakina O.V. (2012). Approaches to the determination of the financial independence of the local budgets of Russia. *Finansy i kredit=Finance and Credit*, 12(492), 2–8 (in Russian).

Fratesi U., Perucca G. (2014). Territorial capital and the effectiveness of cohesion policies: An assessment for CEE regions. *Investigaciones Regionales*, 29, 165–191. Available at: https://old.aecr.org/images/ImatgesArticles/2014/10/08Fratesi.pdf

Kornai J. (1986). The soft budget constraint. *KYKLOS*, 39(1), 3–30. Available at: http://www.kornai-janos.hu/Kornai1986%20The%20Soft%20budget%20Constraint%20-%20Kyklos.pdf

Korotina N.Yu. (2014) Methodology for analyzing the financial state of municipal budgets. *Bukhgalterskii uchet v byudzhetnykh i nekommercheskikh organizatsiyakh,* 17(353), 17–27 (in Russian).

Kotov A.V. (2020). Assessing the efficiency of regional policy tools. *Ekonomika regiona,* 16(2), 352–362 (in Russian).

Kotov A.V. (2022). Efficiency assessment of preferential treatment at the municipal level. *Voprosy territorial'nogo razvitiya=Territorial Development Issues*, 10(1).

Kulakovsky E.S. (2019). Indicators of sustainable socio-economic development in local authorities' decision-making at the municipal level (case of Voronezh oblast). *Regional'nye issledovaniya,* 2(64), 25–35 (in Russian).

Kuznetsova O.V. (2006). Intergovernmental relations: Parallels between Russia and Germany. *Kazanskii federalist,* 3, 56–67 (in Russian).

Kuznetsova O.V., Babkin R.A. (2021). Typology of municipalities to monitor their socio-economic development. *Federalizm=Federalism,* 26(4), 35–53 (in Russian).

Lavrov A., Sutherland D., Litwack J. (2001). Reform of fiscal federalist relations in Russia: "Federalism creating a market". *Voprosy ekonomiki,* 4 (in Russian).

Leonov S.N. (2020). Preferential regimes of established local growth points and its impact on the economy of the Far East. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 13(3), 28–45 (in Russian).

Leonov S.N. (2021). Financial results of the local self-government reform. Experience of the regions of the Far East. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 14(6), 160–175. DOI: 10.15838/esc.2021.6.78.9 (in Russian).

Leonov S.N. (2023). *Finansovye i strukturnye aspekty reformy mestnogo samoupravleniya v Rossii: monografiya* [Financial and Structural Aspects of the Reform of Local Self-Government in Russia: Monograph]. Khabarovsk: Institut ekonomicheskikh issledovanii Dal'nevostochnogo otdeleniya RAN.

Levina V.V. (2017). Regulation of regional development using financial instruments: Problems and prospects. *Upravlenets=The Manager,* 3(67), 18–24 (in Russian).

Makarova S.N. (2012). Methodology of financial analysis and evaluation of program expenditures of the budget of public legal education. *Audit i finansovyi analiz,* 6, 123–133 (in Russian).

Mikheeva N.N., Ananyeva R.I. (2011). Tools of regional policy: Assessing the efficiency of their application. *Region: ekonomika i sotsiologiya,* 3, 39–57 (in Russian).

Minakir P.A., Prokapalo O.M. (2017). Centralization and autonomation as the drivers of socio-economic development of the Russian Far East. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 10(6), 24–41 (in Russian).

Minakir P.A., Sergienko V.I. (Eds.). (2011). *Sintez nauchno-tekhnicheskikh i ekonomicheskikh prognozov: Tikhookeanskaya Rossiya – 2050* [Synthesis of Scientific, Technological and Economic Forecasts: Pacific Russia – 2050]. Vladivostok: Dal'nauka.

Pechenskaya-Polishchuk M.A. (2020). Instruments and principles of reallocating budgetary resources in the region. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 13(2), 71–88. DOI: 10.15838/esc.2020.2.68.5 (in Russian).

Pevcin P. (2017a). The evidence on the existence of economies of scale in local government units. In: *The Economies of Balkan and Eastern Europe Countries in the Changed World (EBEEC): Conference Proceedings*. Available at: https://knepublishing.com/index.php/Kne-Social/article/view/673

Pevcin P. (2017b). Municipal mergers: Theoretical considerations, practical evidence and potential implications. In: *Future World by 2050: 8th International Scientific Conference (Croatia, Pula, 1–3 June 2017)*. Available at: https://fet.unipu.hr/_download/repository/Future_World_2050_-_Conference_Proceedings.pdf

Pinskaya M.R., Ziganshina L.A. (2015). Balance of regional and local budgets: Issues and solutions. *Innovatsionnoe razvitie ekonomiki=Innovative Development of Economy,* 6(30), 90–98 (in Russian).

Prokapalo O.M. (2003). *Regional'naya sotsial'no-ekonomicheskaya dinamika: Dal'nii Vostok i Zabaikal'e* [Regional Socio-Economic Dynamics: The Far East and Transbaikal Region]. Khabarovsk: Institut ekonomicheskikh issledovanii Dal'nevostochnogo otdeleniya RAN.

Puzanov A.S. (2021). Potential for the development of municipalities. *Byudzhet,* 10(226), 56–59 (in Russian).

Selyavina E.A. (2015). Assessing the effectiveness of public financial institutions for spatial development: The experience of Russia. *Prostranstvennaya ekonomika=Spatial Economics,* 1, 91–108 (in Russian).

Shirokov A.N., Yurkova S.N. (2020). Problems of local self-government development at the present stage: The view of the municipal community. *Munitsipal'naya akademiya=Municipal Academy,* 4, 77–79 (in Russian).

Solomko M.N. (2019). Budget balance: Approaches to definition and estimation. *Vestnik Universiteta,* 3, 143–150. DOI: 10.26425/1816-4277-2019-3-143-150 (in Russian).

Sukharev O.S. (2015). Budgetary costs, efficiency and priorities of economic development. *Nauchno-issledovatel'skii finansovyi institut. Finansovyi zhurnal,* 1(23), 17–28 (in Russian).

Temple M. (1994). *Regional Economics.* London: St. Martin's Press.

Yashina N.I., Emel'yanova O.V. (2008). A technique for estimating the financial condition of consolidated budgets of the Russian Federation regions. *Vestnik Nizhegorodskogo universiteta im. N.I. Lobachevskogo=Vestnik of Lobachevsky State University of Nizhni Novgorod,* 5, 154–166 (in Russian).

Yashina N.I., Yasenev A.V., Yasenev V.N. (2012). Improvement of methods for assessing fiscal sustainability of municipalities and entities of the Russian Federation. *Vestnik Nizhegorodskogo universiteta im. N.I. Lobachevskogo=Vestnik of Lobachevsky State University of Nizhni Novgorod,* 1-1, 244–253 (in Russian).

Yashina N.I., Yashin S.N., Bogomolov S.V., Malova N.G. (2020). Methodological tools for monitoring the creditworthiness of regions and municipalities. *Nauchnoe obozrenie: teoriya i praktika*, 10(2)(70), 269–282. DOI: 10.35679/2226-0226-2020-10-2-269-282 (in Russian).

Zaitseva Yu.S. (2007). *Gorodskoi barometr: sistema monitoringa sotsial'no-ekonomicheskogo razvitiya munitsipal'nykh obrazovanii* [Urban Barometer: A System for Monitoring Socio-Economic Development in Municipalities]. Moscow: Fond "Institut ekonomiki goroda".

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Consideration of Ecosystem Functions in Assessing the Condition of Natural Capital in the Northern Region

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Abstract. The concept of natural capital goes beyond nature as a source of raw materials for production and includes consideration of the environment and ecosystems condition in maintaining human well-being. For sustainable resource use, it is first necessary to determine the stability of ecosystems to a variety of anthropogenic and technogenic loads. The natural capital of forests includes not only forest (primarily wood) resources, but also the full range of ecosystem services, associated with a healthy habitat. The aim of the study is to assess the condition of ecosystems in the active forestry zone of the Komi Republic due to the long-term use. The novelty of the study lies in identifying the degree of ecosystem stability in this area of the region. We use general scientific methods of analysis, synthesis, comparison, generalization, computer-cartographic form tools, based on the use of ArcView program. Assessment of natural capital components made it possible to differentiate forestry according to the positions "biodiversity conservation", "water regulation", "water protection", "carbon sequestration"; to identify the nature of restrictions and recommend the operation mode, taking into account the necessary environmental protection measures and reduction of anthropogenic load. The relative stability of the ecosystem over the period 2000–2020 was revealed. Threats are expressed in a slight reduction of biodiversity, weakening of groundwater flow accumulation and surface runoff accumulation functions due to intensive logging of low-age forest species. The predominant part is classified as an area of favorable ecological condition, where different operation modes are proposed. However, in a number of forestries there is a situation, when the ecosystem is under strong pressure, which caused a decrease in the stability of the three positions of ecosystem services and

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characterizes an unfavorable condition of the ecosystem. In this case, a particularly strict operation mode of forest ecosystems with maximum reduction of logging is recommended. Prospective studies are related to the cost estimation of ecosystem services to analyze the possibility of compensating funds for nature restoration in relation to large loggers in the region.

Key words: ecosystem services, biodiversity conservation, assessment of water protection and water regulating functions, carbon sequestration capacity, ecosystem accounting, forest management, Komi Republic.

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Introduction

The interest in assessing elements of natural capital, where ecosystem services are one of the important links, began to emerge more than 30 years ago with the understanding of the need to fulfill the principles of sustainable development. Awareness of the ecosystem functions' value, their impact on people's standard of living and the state of ecosystems often associated with their depletion determined the beginning of painstaking activities of various assessment (ecological, economic, social) and its embedding in ecosystem accounting for making management decisions (Ruqian Zhang et al., 2023).

Approaches to measuring ecosystem services can be expressed in monetary units, units of time and labor or relative indicators. These include, for example, the number of people using these services, their preferences, the cost of obtaining or maintaining access to the service, and the availability and cost of substitutes[1].

Ecosystem accounting accumulates a complex of information on the state of ecosystems: measurements (in units); changes (in dynamics) and assessments of the impact of human economic activity. In modern conditions, it has become widespread both at the spatial level of territorial objects (forestries, municipal districts, specially protected natural areas) and at the level of enterprises and corporations, etc.[2]

Scientific and scientific-practical interest in approaches to studying and ecosystem functions assessment has been observed in the last decade under the auspices of a number of projects and cycles of publications by Russian and foreign authors (Kripa et al., 2023; Lilford, 2023). The emergence of several volumes of the "Prototype of the National Report" on state specifics, ecosystem function assessment and use practices confirms the relevance of this issue in Russia (Ecosystem Services ..., 2016, Ecosystem Services ..., 2020, Ecosystem Services ..., 2021). Based on the rich international experience, the introduction of adaptive forms of environmental management tools, the practical use of accounting for ecosystem functions is beginning

[1] System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA). Available at: https://seea.un.org/ecosystem-accounting

[2] System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA). Available at: https://seea.un.org/ecosystem-accounting; Developing Corporate Natural Capital Accounts. Guidelines for the Natural Capital Committee. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/516971/ncc-research-cnca-guidelines.pdf; Natural Capital Account 2019–2020. Forestry England. Available at: https://www.forestryengland.uk/sites/default/files/documents/Natural%20Capital%20Account%202019-2020_0.pdf; UK natural capital accounts: 2022. Estimates of the financial and societal value of natural resources to people in the UK. Available at: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapitalaccounts/2022

to form in Russia (Accounting and Assessment..., 2014; Burkhard, Müller, 2013; Syrbe et al., 2013). Categories such as potential volume of services, potential volume of use and real demand in physical and value units are subject to accounting in international practice[3] (Zegeye et al., 2023). Mapping and scenario development methods for ecosystem exploitation are used for this purpose (Syrbe et al., 2013; Accounting and Assessment ..., 2014). Conflict resolution, impact assessment in the design and construction of facilities that negatively affect the state of the natural environment in the long term, is demonstrated by analyzing the state of ecosystem functions[4] (Tishkov, 2010).

Over the last decade, the global practice of natural capital accounting at the object level for large corporations has become increasingly common. This has led to the emergence of the Natural Capital Assessment Protocols[5], the ISO Environmental Finance Assessment Standards – ISO 14008 and ISO 14007 and the ISO 14044 Life Cycle Assessment Standards and the Ecosystem Accounting System[6].

The UK has been a leader in the practice of assessing and accounting for natural capital assets. For example, starting with the development of a methodology for corporate assessment of natural capital (2015), BS 8632 natural capital accounting for organizations was adopted in 2021 and in 2022 guidance on the assessment of natural capital ecosystem services for UK forestry was adopted. Production services (wood resources, wood fuel), but also a wide range of regulating services (carbon sequestration, pollutants, water regulation, cooling effect of parklands) and cultural services (tourism, health effects of being outdoors) will be subject to cost accounting[7].

Natural capital valuation documents are necessary for companies to understand and ultimately manage their risks and opportunities. The results of such assessments are intended for internal decision making, not for disclosure. Companies can appropriately inform their stakeholders about capital management and integrate it into their development strategies. This also allows a company to integrate information in the same way and show how different capitals are important for its long-term viability (Dmitrieva, 2022).

The Russian example of implementation of the state of eco-services analysis (environmental protection, water regulation, etc.) in physical and cost units is demonstrated in the entities' Forest Plans and includes information at the time of their compilation and for the future.

There are examples of individual ecoservice assessments in the region, which only confirms the long-standing interest in them (Likhanova, 2012; Tikhonova, 2017; Ptichnikov et al., 2019). However, the assessment of their state in the complex of several ecosystem functions and in the dynamics over a long period of impact on the natural environment has not been considered.

The Komi Republic is one of the significant regions for logging. It has a vast area (36.3 million hectares, or 87% of the territory) and almost a century of exploitation history. At present there are

[3] Technical Recommendations in support of the System of Environmental-Economic Accounting 2012 – Experimental Ecosystem Accounting (2019). Available at: https://seea.un.or/content/technical-recommendations-support-seea-eea

[4] Methodology for determining the valuation of ecosystem services and the value of biological diversity. Technical Code of Established Practice (2010). Bel NITS "Ekologiya". Minsk.

[5] Natural Capitals Coalition. Natural Capital for Biodiversity Policies: What, why and how. Available at: https://capitalscoalition.org/wp-content/uploads/2021/04/Natural-capital-for-biodiversity-policy-%E2%80%94-FINAL-1.pdf;

Natural Capital Coalition. Natural Capital Protocol. Available at: www.naturalcapitalcoalition.org/protocol;

Natural Capital Coalition. Natural Capital Protocol: Forest Products Sector Guide (2018). Available at: https://naturalcapitalcoalition.org/wp-content/uploads/2018/07/NCC_ForestProductsSectorGuide_Web.pdf

[6] System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA). Available at: https://seea.un.org/ecosystem-accounting

[7] Office for National Statistics, ONS website, methodology, Woodland natural capital accounts methodology guide. Available at: https://www.ons.gov.uk/economy/environmentalaccounts/methodologies/woodlandnaturalcapitalaccountsmethodologyguideuk2022

32 forestries, 24 of which belong to the zone of the most active use of forest resources8. The main areas and volumes of harvesting are concentrated here (more than 60% of the timber stock and more than 90% of the volume of harvested timber).

The current management conditions are characterized by the use of modern harvesting equipment, and forest management system based on the principles of sustainable resource use (Forestry ..., 2000). Therefore, the estimated period of the study (2000–2020) was chosen.

The aim of the study is to assess the ecosystems' state due to long-term exploitation of the territory of the active forestry use zone of the Komi Republic. Analysis of calculations of changes in ecosystem service flows and the influence of various influencing factors will make it possible to differentiate forests according to the degree of ecosystem suitability and sustainability of ecosystem service provision. On the basis of such differentiation, it will be possible to substantiate recommendations on the nature of permissible exploitation modes for the resources of the study area, which are the main objectives of the study. The novelty lies in the identification of the ecosystem sustainability degree in the territory of the most active logging activity of the Komi Republic. The territorial units of the study are municipal districts and forestries.

Research methods

The study was based on the methods of theoretical (generalization, comparison, systematization) and empirical analysis (statistical observation, graphic interpretation). Based on the ranking of ecosystem functions, the most important ecoservices for forest systems such as, biodiversity conservation, water regulation, water conservation and carbon sequestration were selected. The work of T.V. Tikhonova (Tikhonova, 2022) was devoted to the analysis of the choice of indicators for assessing these services. Time slices of the basic period of the study (2000–2020) are adjusted by the dates of availability of necessary information.

Biodiversity is assessed by the number of taxons that are identified on the territory of forestries (mainly on the protected areas). Information is contained in the editions of the Red Book of the Komi Republic (1998 and 2019). The analysis of species diversity conservation considered changes in the number of rare species, the distribution area by forestries and rarity status.

The study emphasizes the consideration of anthropogenic and forestry factors. In addition, the reliability of the information and the study of the territory are assessed. The main indicators characterizing anthropogenic pressure are population density, transportation network density and logging intensity (ratio of average annual volume over a twenty-year period to the forest area covered). The territorial unit of the study of impact factors is municipal districts. The information base was statistical collections on the Komi Republic for the period under study.

The water regulating function of the forest is calculated from the accumulation of runoff in the underground horizons. The product of the groundwater flow increase and the area of forest plantations on the territory of forestries determines the volume of water accumulation in underground horizons. The area of forest plantations is taken according to the data of forested areas of the forest fund of forestries.

The value of average annual groundwater flow increase ΔS (mm) is calculated by the formula:

$$\Delta S = X \times \alpha \times K_1 \times \mu \times [C_1 \times K_2 \times K_3 \times K_4 - C_2]. \quad (1)$$

The value of average annual precipitation X and the share of summer precipitation μ is taken from the Climate Handbook and "Building Climatology" Building code. The correction factors used to calculate the average annual increase in groundwater flow are based on the studies of Yu.V. Lebedev and

[8] On the state of the environment of the Komi Republic in 2021 (2022): State report. Syktyvkar: Ministry of Natural Resources of the Komi Republic.

I.A. Neklyudov (Lebedev, Neklyudov, 2012). The value of the flow coefficient (α) is determined depending on the natural vegetation zone of the area and the terrain. The value of coefficient C_1 depends on forest cover, type of plantations and mechanical composition of soils (Lebedev, Neklyudov, 2012). The value of the coefficient C_2 for the non-forested area is taken at the level of 0.2. Correction coefficients K1-K4 are established depending on the wetland area, age, bonitet and completeness of forest plantations. The calculation is carried out by age groups of coniferous and deciduous plantations. Forest characteristics for calculations include bonitet, age and completeness of forest plantations according to the data of the State Forest Register and departmental reporting forms of the Ministry of Natural Resources of the Komi Republic for 2008 and 2020.

The water protection role of a forest ecosystem is assessed by the magnitude of change in surface runoff due to an increase or decrease in forest cover (Economy of Conservation ..., 2002). The dependence of these values is determined by the equation:

$$M = -1.02 + 0.068 \times F, \quad (2)$$

where M – module of runoff from 1 km^2 of the drainage basin (thousand cubic meters/ha), F – forest cover of the territory (%).

The area of forest plantations is taken according to the data of forested areas of the forest fund of forestries, respectively, the forest cover of the territory of forestries is calculated as a share of forest plantations from the total area of the forest fund of forestries. The runoff volume is determined by the multiplication of the area of the forested area of the forestries and the runoff module. The information base includes forms of the State Forest Register and departmental reporting of the Ministry of Natural Resources of the Komi Republic for 2000 and 2020.

Analysis of the length of water protection zones, which fulfill the role of watercourse protection, is also assessed as an addition to the calculations. The source of information was reports of the Ministry of Natural Resources of the Komi Republic for 2007 and 2021.

For the forest ecosystems of the region on forestries, it is acceptable to calculate *carbon sequestration* using specific indicators of absorptive capacity of boreal forests (Dolman et al., 2012). The forested areas of the forest fund of forestries are taken from the forest management data for the basic years of the study (2000 and 2020).

Values of ecosystem service indicators are expertly categorized into groups of decreasing ecosystem function and different growth intensities. A complex nature of the analysis is made up by a matrix that accumulates these groups by forestries.

Results of the assessment

Biodiversity. The selection of species for biodiversity state assessment is based on uniqueness, indicativeness and logging activities as a threat to existence. According to these criteria, the following groups of organisms were considered for 145 taxons from the two Red Books data of the region: lichens (46 taxons), vascular plants (47 taxons), fungi (23 taxons), mosses (12 taxons), insects (10 taxons), reptiles (3 taxons) and birds (4 taxons), whose status is varied (from "1" to "4"). Conservation of biodiversity was considered through changes in the number and status of rare species, and their distribution areas by forestries.

The analysis of the situation showed that the exploitation of forest areas had an insignificant impact on the number of species populations and was reflected only in the disappearance of rare lichen species on the territory of a number of forestries with high intensity of logging activities. Thus, forest management in the territory of the Priluzskoe, Kazhimskoe, Letskoe, Koigorodskoe, Syktyvkarskoe and Pechora-Ilychskoe forestries has resulted in the disappearance of rare lichen species, which is an unfavorable situation for ecosystem conservation.

Changes in natural and climatic conditions and conditions for comfortable existence of rare species of birds and insects contributed in most cases to the transfer to a milder category, which indicates the prevalence of species.

Despite the fact that fish are not among the species threatened by logging, this activity still negatively affects the volume of river runoff, especially in small watercourses, through siltation processes, creating uncomfortable conditions for existence. Therefore, it should be noted that rare fish habitats with changes in population numbers are observed in water bodies of a number of forestries in the middle reaches of the Mezen River, the main channel of the Vychegda River and the lower reaches of its tributaries (Vym, Sysola, Vishera and Lokchim). And on this territory the situation is favorable, but with the initial level of reduction of sustainability. On the territory of other forestries there is a favorable situation for the conservation of ecosystems and biodiversity.

The main factors determining biodiversity conservation, taking into account intensive logging exploitation of the area, are:

– natural (climate, natural disasters, diseases);

– anthropogenic (production, population, transport infrastructure);

– forestry (implementation of forest certification; conservation of intact forest areas);

– informational (monitoring of ecosystems state, data reliability).

The present study emphasizes on the consideration of anthropogenic factor.

Anthropogenic factors. The intensity of logging activities is different across the districts and varies with a 25-fold difference from 0.06 cubic meters/ha to 1.5 cubic meters/ha.

The analysis of statistical data by districts in 2000 and 2020 showed a decrease in the anthropogenic load of population density for the entire area. It should be noted that a decrease in population density does not always proportionately reflect the level of resource withdrawal and other negative effects on forested areas. Ecological literacy and people's desire to preserve nature are very important here. The expert assessment fixes the increased load of fish and hunting resources withdrawal regardless of the population decrease and its density on the territory of Ust-Vymsky, Troitsko-Pechorsky and Udorsky districts.

Human economic activities and transport routes contribute to the spread of negative effects such as the introduction of invasive species. At present, 170 such plants have been recorded in the forest zone of the republic, including the following plants: Amaranthus retroflexus, Echium vulgare, Lepidium latifolium and others. Of particular concern is the emergence of dangerous quarantine weeds – Ambrosia artemisiifolia, Lactuca tatarica, Rhaponticum repens. At the same time, Typha, Melilótus, came from cultivated plantings of Lupinus and Heracléum sosnówskyi, are assimilated by the natural flora.

Logging roads in the Komi Republic are represented by sand and gravel roads and concrete tracked roads, and also by plank roads of year-round operation, snow and ice roads used in winter and narrow-gauge railroads. The main transport routes used for transportation of harvested timber in forestries are public roads and specialized roads built by loggers.

Year-round roads are an important factor in negative impacts on biodiversity due to the period of use and soil disturbance during construction. The maximum growth of transportation network density is observed in the territory of Koygorodsky (4.9-fold), Troitsko-Pechorsky (1.7-fold), Ust-Kulomsky (1.6-fold) and Priluzsky (1.4-fold) districts.

A summary of the aggregated anthropogenic load by logging intensity activity, population density and transportation network for the entire study period is shown in *Table 1.*

Orange color marking indicates increased load; yellow color shows average load and green color –

Table 1. Characteristics of anthropogenic load of the intensive forest exploitation area for the period 2000–2020

Municipal district	Average annual logging intensity for the period, m³/ha	Population density, people/thousand ha		Road density, km/thousand ha	
		2000	2020	2000	2020
Sysolsky	1.50	30.47	20.10	0.84	0.97
Priluzsky	1.27	21.11	12.45	0.37	0.53
Syktyvdinsky	1.00	37.01	32.85	0.63	0.61
Koygorodsky	0.70	9.60	6.91	0.15	0.71
Ust-Kulomsky	0.65	13.88	8.80	0.36	0.59
Kortkerossky	0.51	13.17	9.01	0.29	0.36
Ust-Vymsky	0.33	80.21	51.31	1.30	0.86
Udorsky	0.23	8.35	4.63	0.34	0.32
Troitsko-Pechorsky	0.09	4.85	2.54	0.09	0.15
Knyazhpogostsky	0.06	12.80	7.52	0.29	0.24

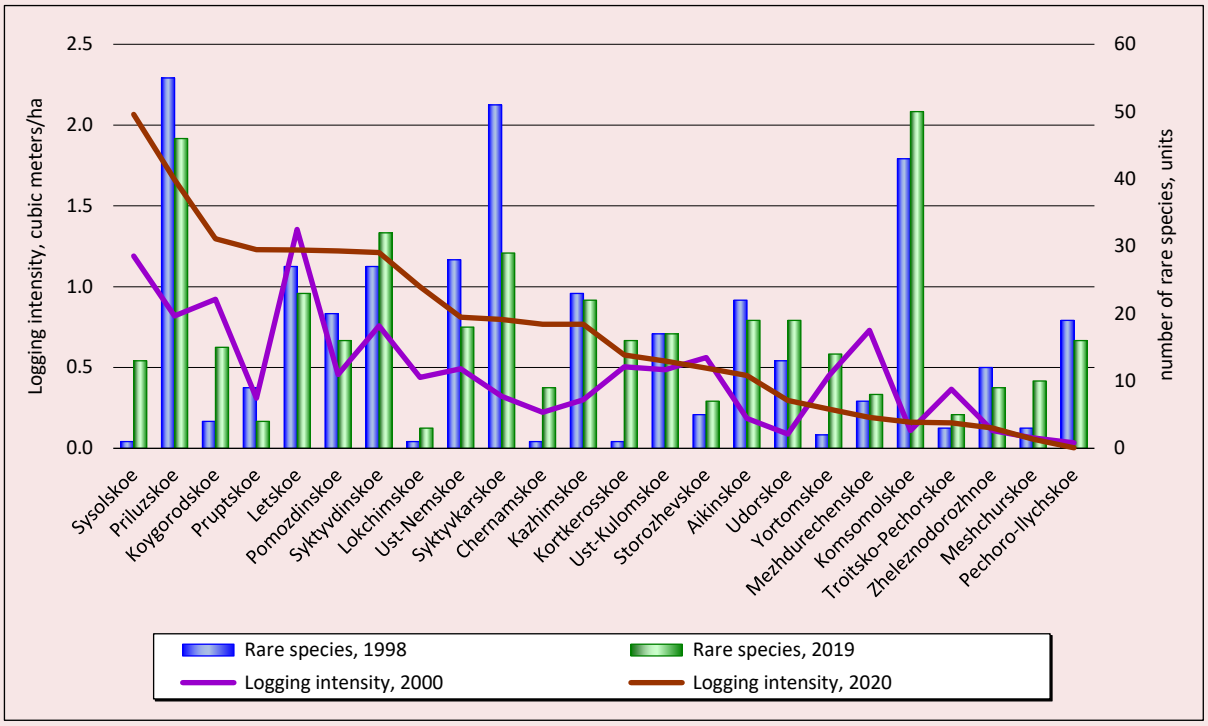
Own calculations based on the forest management data. Committee of forests of the Komi Republic; Socio-economic situation of cities and districts of the Komi Republic: Statistical collection. Komistat. Syktyvkar, 2021; Urban okrugs and municipal districts of the Komi Republic. Socio-economic indicators: Statistical collection. Komistat. Syktyvkar, 2021.

minimum load. According to the combination of three factors, we can note that the maximum anthropogenic pressure is observed on the territory of Sysolsky and Syktyvdinsky districts.

Changes in the number of rare species were recorded in most of the territory (*Fig. 1*).

A decrease in the number of rare species is observed on the territory of those forestries that

Figure 1. Impact of logging activities intensity on biodiversity conservation



Source: own analysis.

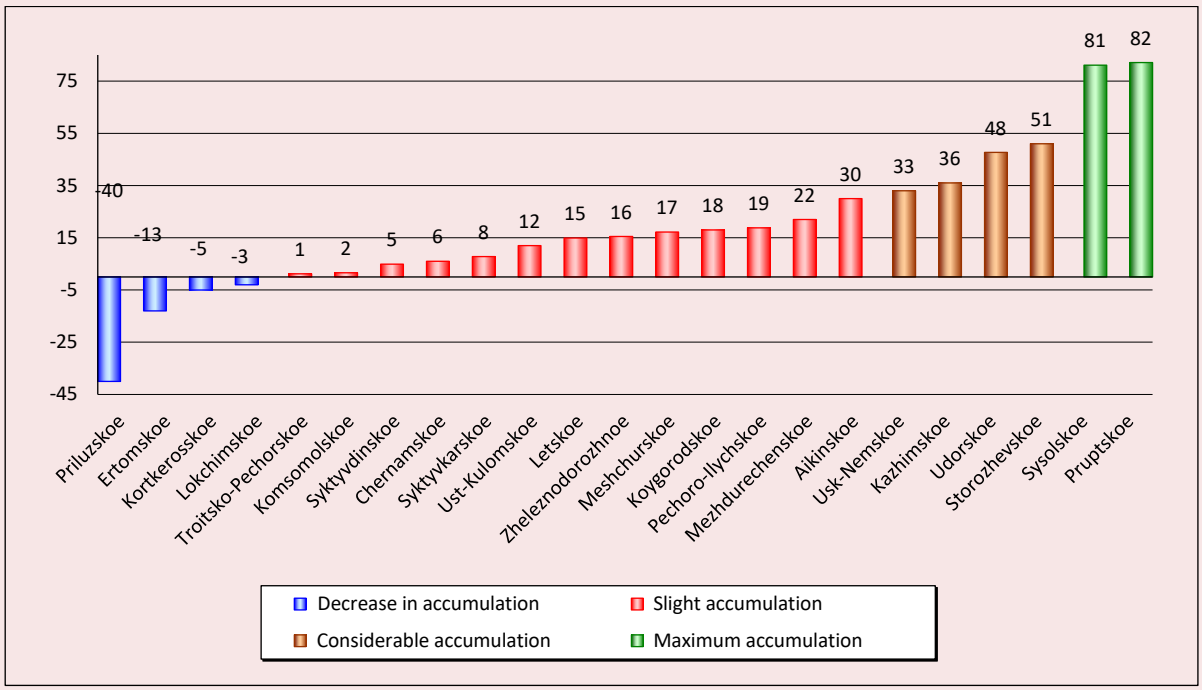
are as close as possible to the main center of raw material processing – Syktyvkar – and are more thoroughly studied – Priluzskoe, Letskoe, Kazhimskoe, Aikinskoe, Ust-Nemskoe, Pomozdinskoe, Zheleznodorozhnoe and Pechora-Ilychskoe. The influence of logging intensity on the decrease in the number of rare species is observed in isolated cases of long-term logging (in Koigorodskoe, Priluzskoe, Syktyvkarskoe forestries).

Another category of change is the increase in the number of rare species, that is, their distribution. The main reasons for this situation in Sysolskoe, Koigorodskoe, Chernamskoye, Ertomskoe and Komsomolskoe forestries are in the knowledge and monitoring of the territory and relatively low anthropogenic load.

The results of assessment of water regulating function in the districts of the active forest management area of the region showed, that the main factors of growth were increase of average annual total precipitation, change of bonitet and areas occupied by young and middle-aged coniferous species. Differentiation of groundwater flow growth by forestries due to changes in forest characteristics is presented in *Figure 2*.

As we can see in Figure 2, a decrease in runoff accumulation in underground horizons is observed in four forestries. At the same time, the increase in the total area of forest plantations does not affect the runoff volumes. The main reason for such changes is the reduction of bonitet in the age structure of species, both coniferous and deciduous plantations. For example, on the territory of Priluzskoe forestry the bonitets of young and middle-aged species changed from category II in 2008 to category III–V in 2020, which made adjustments in the reduction of groundwater runoff accumulation (-40.0 million cubic meters). The reduction of middle-aged species areas during this period also affected the value of groundwater flow volume.

Figure 2. Increase in groundwater runoff of forestries for 2008–2020, million m3



Source: own analysis.

Water regulating function. The increase of runoff in rivers is due to increase of forest area and forest cover in general in forestries. Accordingly, the decrease in runoff volume is due to the reduction of forest areas. During the study period, water bodies of most forestries did not reveal significant runoff losses. However, due to the reduction of forest areas and forest cover on the territory of a number of forestries there was a decrease in runoff accumulation in water bodies.

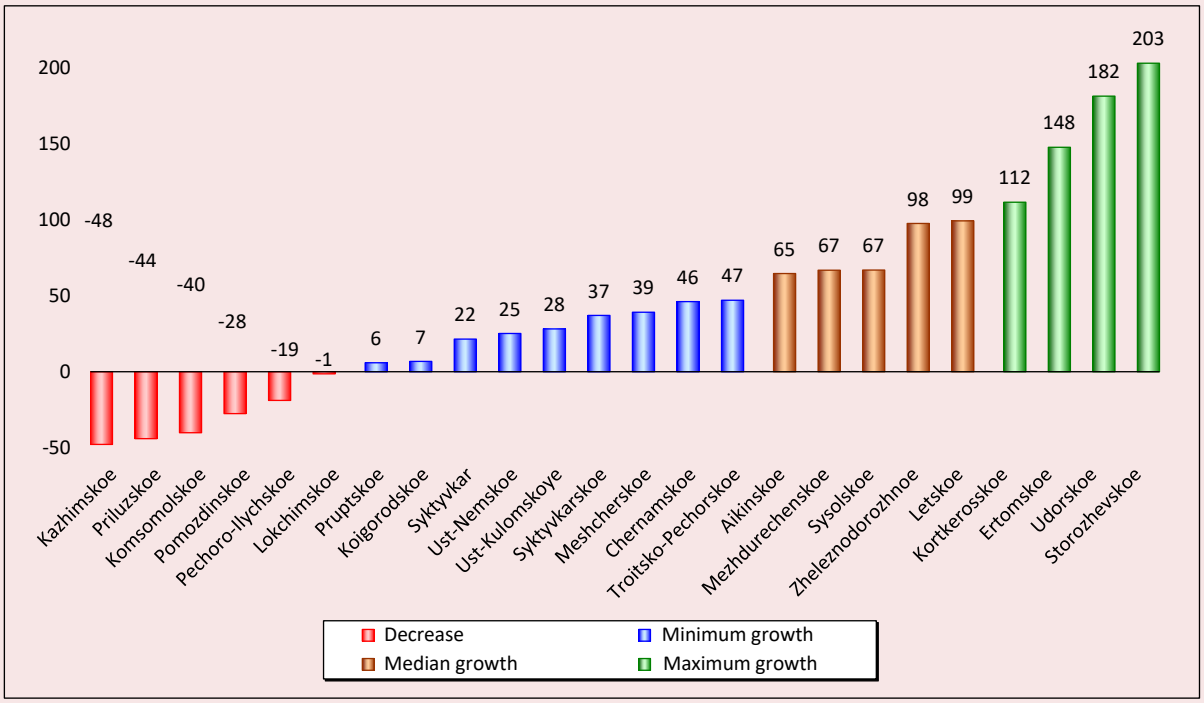
Differentiation of surface runoff growth by forestries due to changes in forest characteristics is presented in *Figure 3*. The maximum increase in surface runoff on the territory of four forestries is provided by increasing the area of forest plantations by 15–25 thousand hectares and forest cover by 1–1.5%.

Logging and forest area reduction affect water availability of small tributaries of the Pechora River on the territory of Komsomolskoe and Pechora-Ilychskoe forestries. There is no significant deterioration in surface runoff accumulation. Preservation of satisfactory condition of surface river runoff, its significant accumulation is observed on the territory of forestries of Udorsky and Kortkerossky districts due to significant areas of reserves (intact areas, including protected areas) and middle-aged coniferous forests.

Water protection strips along water bodies (rivers, streams and also lakes) belong to the area characteristics of water protection function. However, the information on these zones is determined by the length of their development.

Water protection zones along water bodies started to be improved in 2007 and covered only large rivers. Since 2013, annual statistics for large rivers and their tribu taries by municipal districts are given in the reports of the Ministry of Natural Resources and Environmental Protection of the Komi Republic.

Figure 3. Surface runoff increase in 2000–2020, million m^3



Source: own analysis.

Establishment of boundaries of water protection zones and protected shoreline belts on the ground in the priority order is carried out on water bodies, which are used for the purposes of drinking and household water supply in the areas located within the boundaries of settlements. The total length of the established water protection zones from 2007–2021 of the territory of intensive forest management is 2,448 km. The main purpose of their improvement is to ensure the safety of water supply to the population, so the share of organized water protection zones is extremely small in relation to the total length of the river network. According to the calculations, it does not exceed 1% of the river network length of each district, except for Ust-Kulomsky (3%) and Ust-Vymsky (5%). Thus, the most vulnerable are small watercourses, the organization and provision of protected belts of which lies entirely on the tenants of forest objects engaged in logging.

On the territory of most forestries there is an accumulation of groundwater runoff of large rivers: Vychegda, Vym, Pechora and their tributaries. Felling that led to changes in the bonitet and completeness of coniferous and deciduous plantations was especially evident in Priluzskoe, Ertomskoe, Kortkerosskoe and Lokchimskoe forestries. The intensity of groundwater flow accumulation was more influenced by precipitation than by felling, therefore, almost everywhere there was an increase in accumulation of water storage in underground horizons. The short range of available statistical data (2008–2020) on the state of forest characteristics (bonitet and completeness of coniferous and deciduous species) does not allow us to identify significant changes or significant susceptibility of the forest to anthropogenic changes.

The water protection function of forests, expressed in the increase of accumulation of rivers' surface runoff, has maintained and increased its initial state for the majority of forestries during the study period. Logging was reflected in the reduction of river runoff of the main tributaries of the Sysola and Pechora rivers in the territory of Kazhimskoe, Priluzskoe, Pomozdinskoe, Komsomolskoe and Pechora-Ilychskoe forestries. Water protection zones of small watercourses located far from large settlements are not equipped, which increases the possibility of siltation of water sources.

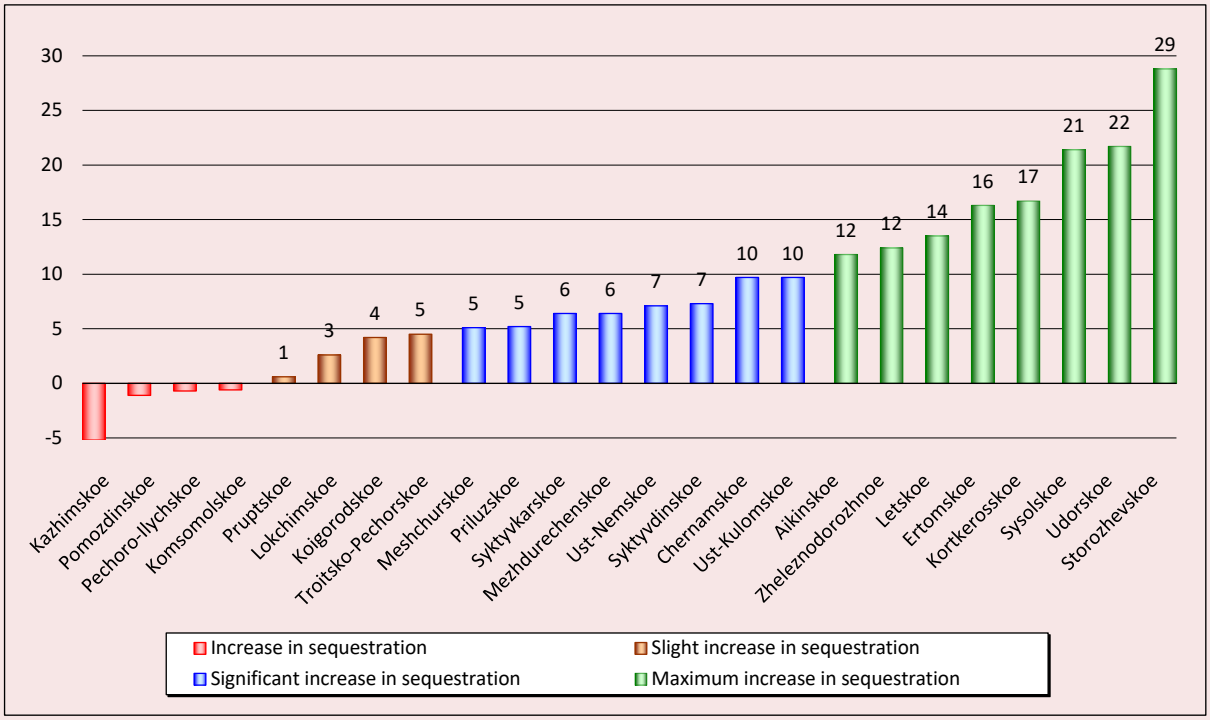
Most of the ecosystems of the forestries responded to logging in the same way by increasing the accumulation of groundwater and surface runoff. This situation is favorable and is typical for the following forestries: Letskoe, Koigorodskoe, Syktyvkarskoe, Syktyvdinskoe, Troitsko-Pechorskoe, Ust-Kulomskoe, Ust-Nemskoe, Chernamskoe, Sysolskoe, Aikinskoe, Udorskoe, Mezhdurechenskoe, Meshchurskoe and Zheleznodorozhnoe. In the rest of the area, there is either a reduction in runoff accumulation of both functions or one of the ecological services.

The change in the carbon sequestration capacity of forest ecosystems depends on the area of forests: the increment is due to the growth; the decrease is due to the reduction in the area of forest plantations. This approach to the assessment of carbon accumulation does not take into account the quality of forest plantations (age, completeness, bonitet), it partially reflects the real situation, allows us to identify the differentiation of the sequestration capacity of forests for twenty years of their exploitation (*Fig. 4*).

Carbon sequestration was calculated for forest ecosystems using specific absorptive capacity values of boreal forests at 1.15 tons CO2/ha (Dolman et al., 2012).

Calculations have shown that the carbon sequestration capacity of forests is increasing in most forestries. The forests of Letskoe, Sysolskoe, Kortkerosskoe, Storozhevskoe, Udorskoe, Ertomskoe, Zheleznodorozhnoe and Aikinskoe forestries have the maximum capacity, which is explained by a significant increase in the area of coniferous

Figure 4. Differentiation of carbon accumulation by forestries for 2000–2020, thousand tons



Source: own analysis.

Table 2. Reasons for maximum carbon sequestration during the study period

Forestries	Changes in forest characteristics
Letskoe	Increase in bonitet of young age structures of coniferous forest species; Increase in the areas of ripening age structures of coniferous and middle-aged deciduous species
Sysolskoe	Increase in bonitet of young and ripening age structures of coniferous species; Increase in areas of mature age structures of coniferous and deciduous species
Kortkerosskoe	Areas growth of young and middle-aged coniferous species
Storozhevskoe	Increase in bonitet of young age structures of coniferous forest species; Increase in areas of ripening and mature age structures of coniferous and middle-aged deciduous species
Udorskoe	Increase in bonitet of young age structures of coniferous forest species; Increase in areas of middle-aged coniferous species and mature age structures of deciduous species
Ertomskoe	Areas growth of middle-aged structures of coniferous and deciduous species
Zheleznodorozhnoe	Increase in bonitet of young age structures of coniferous species; Areas growth of mature coniferous species
Aikinskoe	Increase in bonitet of old-growth coniferous age structures; Increase in areas of middle-aged and old-growth coniferous and mature deciduous species
Source: own analysis.	

vegetation. In these territories, during the study period, there were positive changes in the bonitet of young and middle-aged coniferous and deciduous forest species, which have the maximum carbon sequestration capacity, and in the areas occupied by these species, which increased the intensity of carbon sequestration (*Tab. 2*).

In these areas during the study period there were positive changes in the bonitet of young and middle-aged coniferous and deciduous forest species, which have the maximum capacity for carbon sequestration, and in the areas occupied by these species, which increased the intensity of carbon sequestration.

Thus, almost the entire territory of the examined forestries has a high carbon sequestration capacity, and during the study period this capacity has not only been maintained, but also increased. The growth of carbon sequestration serves as an indicator of favorable condition of forest ecosystems.

Using the expert method, the entire zone of active forest management is divided into areas with decreasing favorability of ecosystems, and slight, moderate and significant growth of favorability according to the function of carbon dioxide absorption, water regulation of groundwater flow and water protection function, and the level of biodiversity conservation by forest ecosystems.

Discussion

The integrated assessment of accounting for the functions and benefits of nature allows us to summarize the results and present the overall level of sustainability by the degree of ecosystems' favorability to anthropogenic pressures over

Table 3. Types of ecosystem states of the territory of active forest exploitation and proposed operation modes

Forestries	Biodiversity conservation	Water regulation	Water protection	Carbon sequestration
Especially strict operation mode (unfavorable ecosystem state)				
Priluzskoe				
Kazhimskoe				
Pechora-Ilychskoe				
Strict operation mode (favorable ecosystem state)				
Pomozdinskoe				
Lokchimskoe				
Komsomolskoe				
Letskoe				
Koigorodskoe				
Syktyvkarskoe				
Ertomskoe				
Kortkerosskoe				
Operation mode with restrictions (favorable ecosystem state)				
Troitsko-Pechorskoe				
Ust-Kulomskoe				
Chernamskoe				
Ust-Nemskoe				
Meshchurskoe				
Syktyvdinskoe				
Mezhdurechenskoe				
Pruptskoe				
Aikinskoe				
Zheleznodorozhnoe				
General operation mode (favorable ecosystem state)				
Storozhevskoe				
Sysolskoe				
Udorskoe				

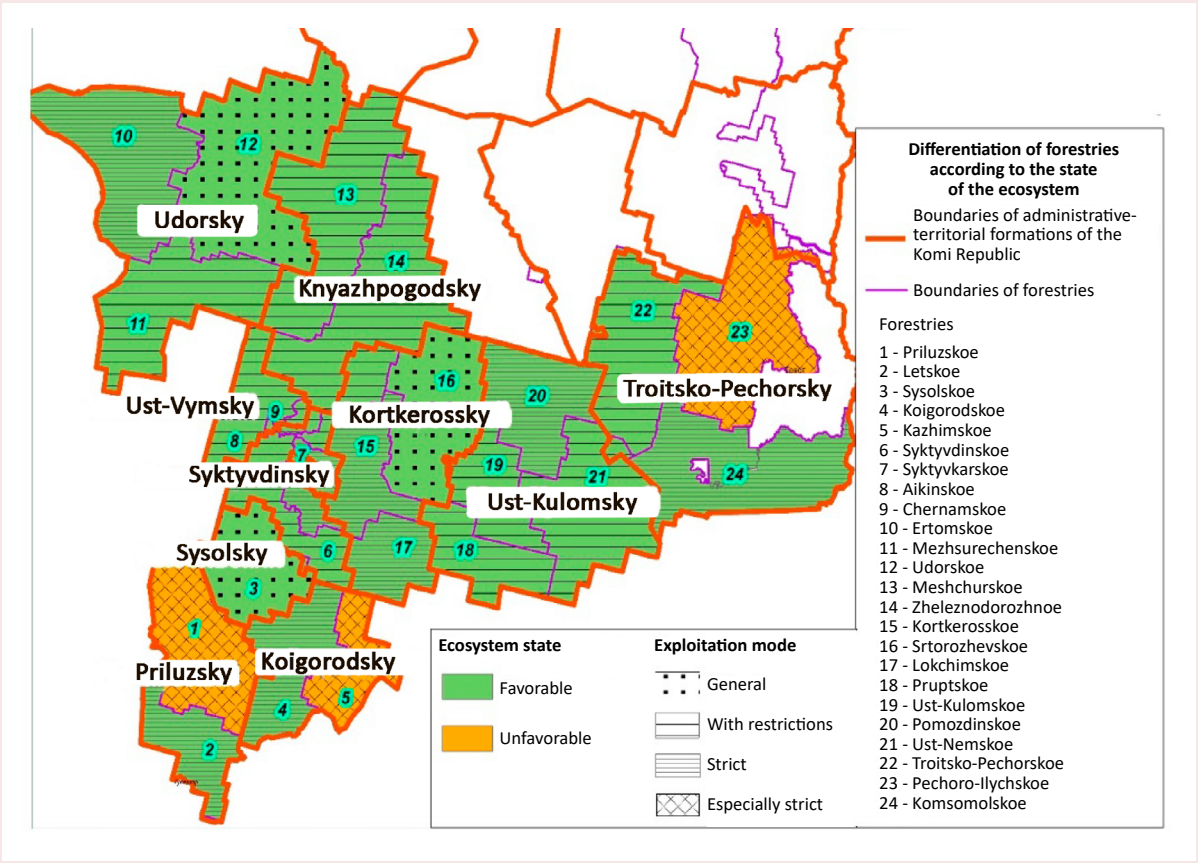
	Unfavorable ecosystem state, reduction of stability
	Slight increase in stability
	Significant increase in stability
	Maximum increase in ecosystem stability

Source: own analysis.

a long management period. This assessment is presented for forestries in two formats: a matrix with color coding of the certain services types' state of and a cartogram, reflecting the territorial differentiation of the ecosystem's favorability and the exploitation mode corresponding to its state. A summary of trends in biodiversity and ecosystem functions considered during the study period: conservation or extinction of rare species, water regulation (increase/decrease in groundwater flow), water protection (accumulation of surface runoff) and carbon sequestration is presented in *Table 3*.

Analysis of all ecosystem services, taking into account the activation or weakening of functions, allowed us to designate favorable and unfavorable areas (forestries) in the zone of active forest management. Based on the ratio of positive and negative trends in ecosystem functions, in-depth differentiation of the state and grouping of forestries by the nature of restrictions and the recommended exploitation mode, taking into account the necessary conservation measures and reduction of anthropogenic load, was carried out. The matrix of forestries' ecosystems state is visualized on the cartogram (*Fig. 5*).

Figure 5. Differentiation of forestries by ecosystem state over the 2000–2020 study period and proposed exploitation mode



Source: own analysis.

A situation in which an ecosystem is subjected to strong pressures that have resulted in a decrease in resilience across the three ecosystem services, characterizes an unfavorable ecosystem state. At the same time, a particularly strict exploitation mode with maximum reduction of felling is recommended. This situation has developed on the territory of Priluzskoe, Kazhimskoe and Pechora-Ilychskoe forestries.

The predominant part of the active forest management zone is classified as an area of favorable ecological state, where we suggested general, restricted and strict exploitation modes.

The strict exploitation mode is recommended in forestries, where one or two eco-system functions have reduced stability. This is either a decrease in water storage in surface or underground horizons, or a decrease in carbon sequestration by forests, or a loss of habitat for rare species of flora and fauna. Such a mode includes mandatory logging activities in accordance with forest certification, installation of information boards of the water protection zone of small rivers and increased attention of nature protection authorities. This situation is typical for the following forestries: Pomozdinskoe, Lokchimskoe, Komsomolskoe, Letskoe, Koigorodskoe, Syktyvkarskoe, Ertomskoe and Kortkerosskoe.

The exploitation mode with restrictions corresponds to an ecosystem state where there is no weakening of ecosystem functions, but the ecosystem is in a borderline state of initial or intermediate level of perceived negative impacts. On the territory of Syktyvdinskoe, Pruptskoe, Ust-Kulomskoe, Ust-Nemskoe, Mezhdurechenskoe, Zheleznodorozhnoe, Meshchurskoe, Chernamskoe, Aikinskoe, Troitsko-Pechorskoe forestries there is an increase in carbon sequestration and water storage in underground and surface horizons; preservation of rare species of animals and fish, and habitats of vascular plants. However, there are signs of a borderline state here – a slight increase in stability prevails in the state characteristics, which dictates anthropogenic constraints, particularly in logging.

The general exploitation mode with fulfillment of all regulatory obligations is recommended in an area where a favorable situation is ensured by maximum increase in the sustainability of several ecosystem functions. These forestries are inherently stable, meaning that the ecosystem copes with actual or past (characteristic of Udorskoe forestry) loads, or the actual load does not exceed the capacity of the system. On the territory of Storozhevskoe, Udorskoe and Sysolskoe forestries the habitats of valuable fish and animals have been preserved. Due to the increase in forest area, surface water runoff in rivers has been accumulated; the level of carbon sequestration is high. We should also note that these areas are characterized by a high proportion of intact forests (Udorskoe forestry) and objects of integrated environmental protection (Kortkerosskoe forestry).

Qualitative analysis of the situation was limited by the incomplete information base of forest characteristics (bonitet and completeness for all age categories of coniferous and deciduous species), and also by the short period of observation (2008–2020), during which there was no transition of forest plantations to another age category, which requires at least 20–25 years. Nevertheless, many indicators had a sufficient period of observation (2000–2020) and reflect an adequate situation of the ongoing impact on the natural environment.

Conclusion

The accounting of ecosystem functions in the assessment of the state of natural capital of the region's intensive forest management area in the dynamics of twenty years is pioneering. The assessment of biodiversity and regulating services reflected the following positions of their state:

– logging activities during the study period did not result in a significant decline in the known populations of rare species;

– transportation network that facilitates access to natural resources has not had a significant impact due to its low density;

– decrease in the number of valuable fish is observed in the basins of the Mezen, Vychegda rivers and its tributaries due to poaching and reduction of river flow in small watercourses caused by intensive logging;

– groundwater runoff accumulation occurs on the territory of most forestries; no significant deterioration of surface runoff accumulation is observed despite logging operations and reduction of water availability in small tributaries of the main rivers;

– water protection of small watercourses is among the socio-ecological responsibilities of loggers;

– practically the entire area of active forest management has a strong carbon sequestration capacity, and during the study period this capacity was not only preserved, but also increased.

In general, we can state the relative stability of the state of ecosystem services within the forestry territories over the period 2000–2020. Despite relatively comfortable natural conditions, the territories of a number of forestries in the southern part of the region are subject to exploitation pressure that may hinder the restoration of forest ecosystems. As a result of intensive logging, there may be threats of biodiversity decline, weakening of groundwater flow accumulation and surface runoff accumulation functions.

The use of this algorithm for ecosystem condition assessment can be applied to large logging companies, large areas of logging leases in different Russian regions. The data obtained can contribute to the planning elements of the optimal list of environmental measures. Taking into account the accumulated foreign experience, prospective studies may be related to the valuation of ecological services to analyze the possibility of compensation for nature restoration in relation to large loggers in the region.

References

Burkhard B., Müller F. (2013). Indikatoren und Quantifizierungsansätze. In: Grunewald K., Bastian O. (Eds.). *Ökosystemdienstleistungen – Konzept, Methoden und Fallbeispiele*. Heidelberg: Springer Spektrum Verlag. Available at: https://www.springer.com/de/book/

Dmitrieva T.E. (2022). Approaches to assessment of natural capital: foreign experience. I*zvestiya Komi nauchnogo tsentra Ural'skogo otdeleniya Rossiiskoi akademii nauk. Seriya "Ekonomicheskie nauki"=Proceedings of the Komi Science Center of the Ural Branch of the Russian Academy of Sciences.* Series "Economic Sciences", 3(55), 35–46. DOI: 10.19110/1994-5655-2022-3-35–46 (in Russian).

Dolman A.J., Shvidenko A., Schepaschenko D. et al. (2012). An estimate of the terrestrial carbon budget of Russia using inventory-based, eddy covariance and inversion methods. *Biogeosciences*, 9, 5323–5340. DOI: 10.5194/bg-9-5323-2012

Ekosistemnye uslugi Rossii: Prototip natsional'nogo doklada. T. 1. Uslugi nazemnykh ekosistem (2016) [Ecosystem Services in Russia: Prototype of the National Report. Vol. 1. Services of Terrestrial Ecosystems (2016)]. Moscow: Izd-vo Tsentra okhrany dikoi prirody.

Ekosistemnye uslugi Rossii: Prototip natsional'nogo doklada. T. 2. Bioraznoobrazie i ekosistemnye uslugi: printsipy ucheta v Rossii (2020) [Ecosystem Services in Russia: Prototype of the National Report. Vol. 2. Biodiversity and Ecosystem Services: Accounting Principles in Russia (2020)]. Moscow: Izd-vo Tsentra okhrany dikoi prirody.

Klimanova O.A. (Ed.). (2021). *Ekosistemnye uslugi Rossii: Prototip natsional'nogo doklada. T. 3. Zelenaya infrastruktura i ekosistemnye uslugi krupneishikh gorodov Rossii* [Ecosystem Services in Russia: Prototype of the National Report.

Vol. 3. Green Infrastructure and Ecosystem Services of the Largest Cities of Russia]. Moscow: Izd-vo Tsentra okhrany dikoi prirody.

Kozubov G.M., Taskaev A.I. (Eds.). (2000). *Lesnoe khozyaistvo i lesnye resursy Respubliki Komi* [Forestry and Forest Resources of the Komi Republic]. Moscow: Izdatel'sko-prodyuserskii tsentr "Dizain. Informatsiya. Kartografiya".

Kripa S., Bandana S., Biraj A. et al. (2023). Ecosystem services valuation for conservation and development decisions: A review of valuation studies and tools in the Far Eastern Himalaya. *Ecosystem Services*, 61. Available at: https://doi.org/10.1016/j.ecoser.2023.101526

Lebedev Yu.V., Neklyudov I.A. (2012). *Otsenka vodookhranno-vodoreguliruyushchei roli lesov* [Assessment of the Water Protection and Water-Regulating Role of Forests]. Yekaterinburg: UGLTU.

Likhanova N.V. (2012). Biodiversity and biomass changes of ground cover plants on clear felling sites of spruce forests in the middle taiga. *Izvestiya Samarskogo nauchnogo tsentra Rossiiskoi akademii nauk*, 14(1)(5), 1309–1312 (in Russian).

Lilford E. (2023). Natural resources: Cost of capital and discounting – risk and uncertainty. *Resources Policy*, 80. Available at: https://doi.org/10.1016/j.resourpol.2022.103242

Ptichnikov A.V., Karelin D.V., Kotlyakov V.M. et al. (2019). Applicability of international indicators of land degradation neutrality estimation for Russian boreal forests. *Doklady Akademii nauk*, 489(2), 195–198. DOI: https://doi.org/10.31857/S0869-56524892195-198 (in Russian).

Ruqian Zhang, Penghui Li, Liping Xu, Shuai Zhong (2023). *Reconciling ecological footprint and ecosystem services in natural capital accounting: Applying a novel framework to the Silk Road Economic Belt in China*. Available at: https://doi.org/10.1016/j.jenvman.2022.117115

Syrbe R., Rosenberg M., Vowinckel J. (2013). SzenarioEntwicklung und partizipative Verfahren. In: Grunewald K., Bastian O. (Eds.) *Ökosystemdienstleistungen – Konzept, Methoden und Fallbeispiele*. Berlin: Springer.

Tikhonova T.V. (2017). Environmental and economic assessment of water regulation function of rural territories in the Republic of Komi. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 10(3), 209–226. DOI: 10.15838/esc/2017.3.51.11 (in Russian).

Tikhonova T.V. (2022). Approaches to measuring ecosystem services on a forest management territory. *Izvestiya KNTs=Proceedings of the Komi Science Center of the Ural Branch of the Russian Academy of Sciences. Series "Economic Sciences"*, 3, 56–65. DOI: 10.19110/1994-5655-2022-3-56-65 (in Russian).

Tishkov A.A. (2010). Biosphere functions and ecosystem services of National Park "Valdayskiy". *Tr. NP "Valdaiskii"=Proceedings of National Park "Valdaiskiy",* 1, 70–77 (in Russian).

Tishkov A.A. (Ed.). (2002). *Ekonomika sokhraneniya bioraznoobraziya* [Economics of Biodiversity Conservation]. Moscow: Proekt GEF "Sokhranenie bioraznoobraziya Rossiiskoi Federatsii", Institut ekonomiki prirodopol'zovaniya.

Uchet i otsenka ekosistemnykh uslug – Opyt, osobenno Germanii i Rossii (2014) [Accounting and Evaluation of Ecosystem Services – Experience, Especially in Germany and Russia (2014)]. Compiled by K. Grunevald, O. Bastian, A. Drozdov, V. Grabovskii. Bundesamt für Naturschutz. Bonn. Available at: http://www.kulunda.eu/sites/default/files/BfN_Skript_373.pdf

Zegeye G., Erifo S., Addis G., Gebre G.G. (2023). Economic valuation of urban forest using contingent valuation method: The case of Hawassa city. *Trees, Forests and People*, 12. Available at: https://doi.org/10.1016/j.tfp.2023.100398

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The Paradigm of Transformative Investment in the Context of Socially Oriented Theories

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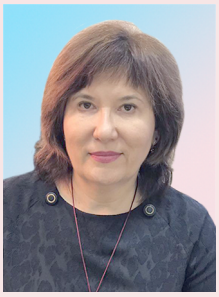

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Abstract. The article is devoted to the study of transformative investments in the context of socially oriented theories. The growing inequality of the regions, the lack of equal opportunities in obtaining basic vital goods force society to look for new forms of overcoming social problems, which include transformative investments. The new investment paradigm, which provides for investing in solving social and environmental problems, has become widespread in many countries, the potential of this type of investment is growing every year, meeting the goals of sustainable development. Despite the fact that the investment directions of transformative investments involve investing in various spheres, this article considers only social aspects. In connection with the above, the purpose of the proposed work is to present a paradigmatic justification of transformative investments in the context of socially oriented theories. It should be noted that the phenomenon of transformative investments can theoretically be explained in

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the context of different theories and concepts, depending on research tasks. In this paper, the theories of social justice and social policy, the theory of the welfare state are considered. To understand the essence of transformative investments, the paper considers their main characteristics, which allowed reflecting the specifics of these investments and the features of their evaluation. Transformative projects are aimed at solving a significant social problem, they must bring financial returns and ensure guaranteed profitability, which distinguishes them from projects provided by charity or state support. The scientific novelty of the work lies in the fact that this group of theories (along with other theories) can serve as a theoretical platform for the study of transformative investments aimed at the development of the social sphere, complementing the works of Russian and foreign scientists. The results of theoretical studies conducted by the authors determine the choice of the main directions and forms of investments that allow optimizing the social policy of the state. The paper concludes that it is necessary to maintain a balance in the social and economic spheres, taking into account the already established institutions and preventing abrupt changes in the redistribution of income; providing the population with appropriate tools and its active participation in development processes.

Key words: socially oriented theories, transforming investments, social sphere, social justice, social policy, welfare state.

Introduction

Society's ideas about social welfare, improving the quality of life and ways to achieve it, ensuring equal opportunities in gaining access to education, healthcare, fair distribution of benefits, balance between investing in the social sphere and production do not lose their relevance and concern society throughout the entire period of development of economic science, transforming in the process of human development, in the process of increasing the complexity of all spheres of human activity, operating in conditions of accumulating environmental and man-made risks. These aspects are aggravated by the problem of increasing inequality and imbalances in the socio-economic development of regions, where inequality, according to T. Piketty, "should be understood as the fact that the recapitalization of property accumulated in the past proceeds faster than production and wages grow. This inequality reflects a fundamental logical contradiction" (Piketty, 2015). In the work *Capital in the Twenty-First Century*, based on the analysis of the distribution of wealth for three centuries, the scientist concludes that property inequality increases with a decrease in economic growth, while the concentration of capital in the hands of a small group of individuals leads to a decrease in the democratic foundations of society. Analyzing the existing trend of capital ownership (one thousandth of the world's population possesses 20% of wealth)[1], he also predicts that by the second half of the 21st century, the same one thousandth of the world's population will already possess 60% of national wealth on a global scale. The negative result of the excess income policy is the increasing economic and social differentiation, which manifests itself in the ever-increasing rates of

[1] Piketty viewed the concepts of "wealth" and "capital" as similar, in connection with which his work was criticized by the German economist Stefan Homburg (Homburg S. (2014). Critical remarks on Piketty's *Capital in the Twenty-First Century*), who argued that the concept of "wealth" is broader than the concept of "capital", due to the fact that it includes not only capital goods created by man, but also land and natural resources.

unemployment growth and poverty. According to R.K. Shamileva, it generates an acute perception of social injustice, which has an impact on the most important spheres of human life (Shamileva, 2022).

The current situation, when the pace of economic growth is slowing down, real incomes of the population decrease, the existing inequality threatens severe social consequences, necessitates innovations in the social and labor sphere that require a new type of investment – transformative, "uniting the efforts of various actors: the state, society, individuals, organizations" (Bugg-Levine, Emerson, 2017). This type of investment is aimed at creating a "combined value", which allows taking into account the "integrated impact of investments on the economic, social and environmental performance of a company", helping to "balance the commercial and noncommercial activities of a company" (Lyshchikova, 2021).

The study of transformative investments is expanding in the scientific discourse due to the fact that they are considered as solutions to social problems, require more active involvement of private business, rejecting the established paradigm when social (and environmental) issues "should be addressed exclusively by the state or at the expense of charity" (Azizi et al., 2022).

The relatively new concept of "transformative investments" has a broader focus, as it means investments in solving economic, social and environmental problems. However, our work focuses on social orientation, especially since the terms "transformative investments" and "social investments" in some cases can be considered synonymous. That is why the article explores socially oriented theories that can be used as a theoretical basis for studying transformative investments: the theory of the Welfare State, the theory of social justice and social policy. The main provisions and directions of investing transformative investments, such as the social sphere, ecology and ensuring equal human rights in society, are reflected in a group of socially oriented theories. In the article, in terms of the theory of social justice and social policy, the provisions presented earlier in the work of G.M. Kvon (Kvon, 2023) are developed and supplemented: the directions of transformative investments and methodological issues of their assessment are substantiated. The theory of the Welfare State in the perspective of transformative investments is considered by the authors for the first time.

Methodology for studying transformative investments

Consideration of transformative investments in the context of various theories involves their research so as to determine essential characteristics, distinguish features, principles, evaluation methods, and select a theoretical basis.

Transformative investments as a system-forming component of a new investment paradigm require identifying their essential characteristics, principles of implementation, classification features, and substantiating methodological approaches to assessing their effectiveness. They are considered in the works of Russian and foreign authors. Thus, the work of E.B. Dvoryadkina and G.M. Kvon presents the essence of the concept of "transformative investments" and related concepts (impact investments, sustainable investments, influence investments, responsible investments, etc.) (Dvoryadkina, Kvon, 2020). Despite the fact that all of the above types of investments have a social (and environmental) orientation, there are certain differences between them, but the line between the concepts is very thin and not always identifiable. A. Bugg-Levine and J. Emerson call transformative investments "investments aimed at maximizing the social, economic and

environmental value created by investment objects" (Bugg-Levine, Emerson, 2017). Transformative investments determine the conscious intention of investors to have a transformative impact on the surrounding socio-economic system. The choice of investment objects is carried out consciously, the result of the investment must have a mandatory assessment (be measured). Although investments in social projects often do not bring commercial profitability, transformative investments should pay off, i.e. be financially sound. In this regard, the issues of evaluating this type of investment are being updated, the complexity of which is due to the need to introduce an impact criterion: it should be taken into account in addition to other key, "standard" performance indicators. However, impact and financial return, according to the impact investing guide[2], do not always complement each other. The foreign discourse focuses on the theory of change, which is considered a key element in the assessment along with impact and intention (Jackson, 2013).

In our earlier work, an attempt was made to generalize approaches to the assessment of transformative investments based on the study of a number of works (Kvon, 2020). We pointed out that the complexity of the assessment depends on the following factors:

– difficulties in forecasting profitability due to ambiguity and a large variety of social effects;

– difficulties in measuring them (for example, due to the lack of feedback from the recipients of the effect: recipients may not be able to give feedback due to illness or be geographically unavailable, etc.);

– opacity of data on social effectiveness;

– difficulties in determining the discount rate, forecasting social impact (influence) due to the occurrence of externalities; it is also not always possible to determine whether a positive impact arises as a result of investing this particular type of investment or this impact would occur due to other reasons, etc.

Depending on the type of organization in which transformative investments are implemented and the type of impact, transformative investments can be classified according to the priority of goals: "primary social impact or financial benefit" (Pankrukhina et al., 2023).

Despite the difficulties outlined above, the following standards and methodologies have been adopted to assess transformative (impact)[3] investments:

– IRIS+ (Impact Reporting & Investment Standards)[4] developed by the Global impact Investing network – GIIN: the selection of indicators applied to specific industries on five aspects of impact is carried out; for each category of impact (for example, agriculture, health, etc.), metrics are set for which investors can navigate;

– the IMM (Impact measurement and management) methodology developed by the Rise Fund investment fund; the assessment is carried out in six stages, an IMM multiplier is being developed, a lower threshold for social impact (investment) is set; it is recommended to consider projects with a return of at least $ 2.5 for each dollar invested;

– the SROI (Social Return on Investment)[5] methodology, which takes into account a number of principles and provides for six stages[6]; the

[2] Godeke S., Briaud P. (2020). Impact Investing Handbook. An Implementation Guide for Practitioners. Available at: https://www.rockpa.org/wp-content/uploads/2020/10/RPA-Impact-Investing-Handbook-1.pdf

[3] We propose to consider the terms "transformative investments" and "impact investments" as synonyms.

[4] IRIS+ and the five dimensions of impact. Developed in partnership with the Impact Management Project. Available at: https://s3.amazonaws.com/giin-web-assets/iris/assets/files/guidance/IRIS_IMPalignment_20190510.pdf

[5] In the UK, the SROI network is now called the SVI (Social Value International) network.

[6] The SROI methodology was developed by the SROI network on instructions from the Cabinet of Ministers in 2009 and updated in 2012.

methodology is presented in the SROI manual[7]; according to M. Maldonado et al., the methodology "focuses on the inclusion of the created social value in the project evaluation, while social value is understood as the value of which stakeholders experience through changes in their lives" (Maldonado, Corbey, 2016).

We should note that traditional assessment of the effectiveness of investment projects according to Methodological Recommendations[8] (takes into account the economic impact of investment projects) also provides for compliance with a number of principles, and the principles of SROI do not contradict them.

The principles of transformative investing are formulated, as already mentioned, based on the requirements of the GIIN[9] impact investor network, the materials of an "Our Future" Foundation report[10], as well as the OECD report[11], and are presented in our previously published work in collaboration with E.G. Animitsa (Animitsa et al., 2020). They provide for investing taking into account the UN Sustainable Development Goals; obtaining market returns; maximum social impact, etc.

In transformative investing, economic and financial interests are combined, decision-making is carried out not only in the case of guaranteed return on investment (Bondarenko, 2015). Sometimes a situation of zero (and negative) profitability may arise, which is justified by a significant social impact that allows solving a significant social problem. According to Ye.V. Popov, the significance and role of a social project for society is determined by its position in accordance with the coordinates of systematization: the sphere of activity, state participation, the degree of participation, the level of initiation and the level of novelty (Popov, 2018).

The methodology for studying transformative investments also requires the formation of a certain theoretical basis, which can be used by various theories. We (among various groups of socially oriented theories) have chosen the theory of the Welfare State, as well as theories of social justice and social policy of the state.

Research results

Welfare State theory

The theory was developed in the second half of the 20th century, although the issues of addressing social problems, ensuring and maintaining social stability, alleviating poverty, achieving a happy and prosperous life based on a just, "ideal" social structure with equal access to benefits were touched upon in the works of Plato, Aristotle, More, Rousseau, Owen, Fourier, Saint-Simon et al. In the middle of the 19th century, according to the work of T.V. Sidorina (Sidorina, 2012), Lorenz von Stein introduced the concept of "social state", which provides for "the economic and social progress of all its members, since the development of one is a condition and consequence of the development of the other". Considering that different countries have formed different ideas about a just social structure, depending on the nature of state intervention, stratification of social groups, G. Esping-Andersen

[7] A guide to social return on investment: accounting for value (2012). Available at: https://neweconomics.org/uploads/files/aff3779953c5b88d53_cpm6v3v71.pdf (accessed: June 19, 2023).

[8] Methodological recommendations for evaluating the effectiveness of investment projects (second edition), approved by the Ministry of Economy, the Ministry of Finance and Gosstroy of the Russian Federation on June 21, 1999 No. VK 477. Available at: https://normativ.kontur.ru/document?moduleId=1&documentId=8730#h1944 (accessed: June 19, 2023).

[9] GIIN. Core Characteristics of Impact Investing. Available at: (accessed: June 19, 2023).

[10] World experience in the development of impact investments. "Our Future" Foundation. Available at: https://www.b-soc.ru (accessed: June 19, 2023).

[11] OECD report. Social impact investment: The impact imperative for sustainable development. Highlights. Available at: https://static.investindia.gov.in/s3fs-public/2019-11/Social-Impact-Investment-2019.pdf (accessed: June 19, 2023).

identified three types of welfare state, which later determined scientific research on social policy (Esping-Andersen, 1990). However, he did not consider states with a socialist model, therefore, in the future (as a development of the G. Esping-Andersen model), other typologies began to emerge, including a larger number of models (involving the use of cluster, factor, Boolean valued types of analysis, methods of principal components), systematization of which was carried out in the work (Bambra, 2007).

All attempts to classify countries into different types have the following common feature: they construct a typology that takes into account, according to G. Bonoli (Bonoli, 1997), the level of welfare ("how much") and the social insurance system ("how, in what way"); as well as the financing of social spending as a certain percentage of GDP, "the percentage of contribution financing and tax financing of social expenditures" (Sidorina, 2010).

In the context of this theory, special importance is attached to the paradigm of transformative (impact, social) investments that is based on the idea that "welfare states should invest in the development of skills and abilities from an early age", while social investment policies, according to the work (Baines et al., 2019), reinforce social policies, "that protect and stabilize by addressing some of the causes of disadvantage and giving people tools with which to improve their social situations"[12]. Many countries including but not limited to members states of the European Union (EU) – have adopted some elements of Social Investment, although uptake is far from uniform (Bouget et al, 2015).". At the same time, regional and local realities of social investment policies and programs that use different sources of investment financing depending on the regions should be taken into account. The authors of the above work refer to A. Hemerijck[13] (who outlined the critical impact of the global financial crisis on the future of the welfare state), and T. Leoni[14] (proposed to adopt the approach of social investment to the reform of the welfare state), who believed that social security spending within the framework of the welfare state is a long-term investment. T. Leoni also pointed to the emergence of new social risks caused by changed macroeconomic conditions, suggesting adjustments to the theory of the Welfare State.

Currently, the concept of the welfare state requires changes due to the transformation of macroeconomic conditions, the emergence of new social risks. In the work of T.Yu. Sidorina, with reference to N. Rose, alternatives to the welfare state are considered, the question of the revision of the "social" is raised; "social" is a reality that is "unclear, contradictory, imaginary and abolished by its own simulation" (Sidorina, 2012). In recent years, the welfare theory has been experiencing a crisis caused by quantitative factors (low economic growth, a reduction in the tax base (most countries have reduced progressive taxes on income and inheritance), unfavorable demographic trends) and qualitative factors (ensuring social protection and meeting new needs), which led to an increase in economic inequality. Criticism of the new realities based on consumption, limiting the ability of governments to meet the needs of their citizens by providing comprehensive social services and income

[12] Original text.

[13] Hemerijck A. (2013). Changing welfare states. Oxford: Oxford University Press. Available at: https://www.researchgate.net/publication/261030281_CHANGING_WELFARE_STATES_-_by_Anton_Hemerijck.

[14] Leoni T. (2015). The social investment perspective as guiding principle for welfare state adjustment. Austrian Institute of Economic Research (WIFO). Available at: https://www.euroframe.org/files/user_upload/euroframe/docs/2015/conference/Session%201/EUROF15_Leoni.pdf

transfers, has led to the realization of the necessity to apply a more dynamic approach involving investing in people's capabilities. The theory of the Welfare State forms the paradigm of the "state of social investment", which has become necessary due to the understanding of the structural nature of problems in the field of social policy. Social investments represent a conceptual basis for the transformation of the state, a normative idea for policy guidance.

A prerequisite for an effective social investment strategy is poverty minimization and guaranteed income, i.e. conditions must be created in which social protection and social investment mutually reinforce each other.

Theories of social justice and social policy of the state

The term "social justice", which has been of interest to society since the time of Aristotle, is interpreted in different ways. In the work of F.I. Gainullina and H.F. Sabirov (Gainullina, Sabirov, 2011), with reference to the works of Aristotle (*Nicomachean Ethics*), social justice is considered as a "subjective virtue" both in relation to the law and "in relation to another person".

The development of the concept of justice from the standpoint of liberalism (utilitarianism), conservatism and Marxism, as well as normative political theory, is presented in the work of G.Yu. Kanarsh (Kanarsh, 2019). The researcher reveals the features of this category in the views of foreign scientists (K. Manheim, I. Bentham and J.S. Mill, A. Sen, J. Rawls, K. Marx and F. Engels, M. Yang, F.A. von Hayek, M. Sandel, etc.), and Russian researchers (B.N. Kashnikov, A.V. Prokofiev, R.K. Shamileva, etc.).

The issues of social justice, social evolution and social reforms, consideration of not only the "economic man", but also the social man "in all manifestations of his social activity" are reflected in the works of the famous Scottish philosopher and economist John Stuart Mill, whose views are analyzed in the work of E.L. Shuremov (Shuremov, 2018). Being a representative of classical political economy and the founder of the theory of positivism, Mill advocated social justice, calling on governments to stimulate (in our interpretation to invest) the maintenance of the social sphere, providing for the poor. His proposed social reform is mainly aimed at limiting the property inequality of wealth.

The work of R.S. Grinberg notes the evolution of the concept of justice in various philosophical schools since Aristotle and Plato (Grinberg, 2012). The author points out that all ideas about justice "are connected to ideas about democracy and freedom".

In the book *A Theory of Justice* J. Rawls (Rawls, 1995) rejects the idea of social justice and the right of people to social benefits (including education, work) depending on their contribution to the economy and natural giftedness, except in cases of natural inequality (for example, for those people who are not endowed with certain possibilities at birth). Income guarantees for people with lower abilities should be provided by taxing the income of wealthier citizens.

The role of the state, which determines the "rules of the game", provides for the solution of issues of optimizing social policy: "free access of citizens to healthcare, culture, sports, social security and other areas" (Dolgorukova, 2019), corresponding to the areas of transformative investing.

In the World Bank report "Justice and Development: World Development Report"[15], social

[15] Justice and Development: World Development Report 2006. Translated from English by I.P. Gurov et al.; ed. by A.V. Bondarenko. Moscow: Ves' mir. Available at: https://enc.biblioclub.ru/Fund/Viewer.html?file=/Fund/Book/pdf/114379.pdf&embedded=true (accessed: June 25, 2023).

justice is understood as a situation in which individual citizens have equal opportunities to build a life of their own choice and are insured against extreme forms of deprivation in terms of achieving results.

In modern realities, when society has entered the post-industrial phase characterized by the accelerated development of digitalization and network structures, social justice can be considered from the standpoint of the means of social mobility. In the work of E.A. Grinchenko, social justice acts as a factor in "optimizing the system of social elevators", allows coordinating the interests of various actors in terms of "equal access to social benefits and infrastructure" and ensuring "political and legal stability in the state" (Grinchenko, 2022).

In our opinion, it is relevant to study the issues of social policy and social justice in relation to the aging population, where the issues such as state expenditures on pension payments are inevitably raised. According to Yu.A. Zelikova, whose work reviews the current discussions on pension system reforms in various countries in the context of social justice, representatives of different age groups have different attitudes toward the ongoing reforms. The author concludes that it is necessary to support various age groups, as well as social investments in the policy of supporting women's employment and children's development. The analysis of most foreign studies, according to the author, confirms that intergenerational conflicts do not increase (Zelikova, 2022). Of particular interest is the attitude of young people toward issues of social justice, which allows them to realize career interests and life strategies. Based on a questionnaire survey, the results of which are given in the work of I.L. Chebinyaeva, it was revealed that the priorities of young people "are material prosperity, social success, professional realization, sense of being useful to society", and social justice should be expressed through "ensuring equal access to social benefits" and equal starting opportunities to get a quality education, promotion in the profession through internships, to ensure the safety of life (Chebinyaeva, 2022).

Despite the implementation of social policy by the state, it is not enough to use only charity and social programs to solve the problems such as inequality, unfair distribution of income (in the form of wages and income from capital), implementation of forms of support to the poorest segments of the population to improve their standard of living (Yunus, 2017). Analyzing the existing mechanism of functioning of the capitalist economy, it is proposed to carry out its "restructuring" and create a "new economic mechanism" based on the concept of social business, taking into account not only social, but also existing environmental (climate) problems (Kvon, 2023).

According to W. Eucken (the author of the theory of economic orders, which is the methodological basis of the "social market economy"), economic policy and social policy are closely linked: economic policy ensures the implementation of the main directions of social policy, namely, "the policy of social guarantees; effective work; self-sufficiency and redistribution of income and property" (Eucken, 1995).

The understanding of the role of the welfare state in creating conditions for ensuring social justice is reflected in the work of I.I. Korchagina and L.M. Prokofieva. Subjective perception of fairness in terms of wages, income differentiation, standard of living, consumption, etc. has shown that people "admit the existence of inequality" due to the fact that different persons, depending on individual abilities, tend to "work more efficiently", but believe that the state should ensure "regulation of distributive relations in order to reduce income differentiation" (Korchagina, Prokofieva, 2022).

Major areas of investment in the implementation of social policy, taking into account aspects of social justice

Ares and forms of investing	Substantiation of investments
1. Human abilities	
1.1. Early childhood development	Investing in the child's development has a significant impact on their health, motivation to study, and brings a more significant economic return in the future. Well-thought-out government measures can significantly reduce the gap between the capabilities of different social strata
1.2. School education	Expanding access to education, stimulating demand (encouraging parents to invest in children's education, paying scholarships, increasing enrollment) and supply (increasing teachers' salaries, improving education facilities and equipment, developing and implementing innovative teaching methods aimed at improving the academic performance of weaker students)
1.3. Health care	Granting state guarantees for the provision of services, grants-in-aid to stimulate health protection, development of the insurance market against diseases leading to catastrophic consequences (in the understanding of the ability of households to cover the costs of treatment in case of a loss of income)
1.4. Risk management	Developing the social protection system, providing a "safety net", preventing restrictions on investments intended for those in need of social protection (the working poor, unemployables, or persons for whom it is undesirable to work, special socially vulnerable groups) as a result of macroeconomic crises, restructuring of industries, weather conditions, natural disasters
2. Justice, land, infrastructure	
2.1. Creating fair justice systems	Ensuring a balance between strengthening the independence of justice systems and increasing their accountability, using measures to expand the accessibility of the judicial and legal system, leveling the "rules of the game" in the political, social and cultural fields; protecting the political rights of citizens
2.2. Ensuring more equitable access to land	Improving the functioning of the land market and providing poor citizens with guarantees of their right to land
2.3. Ensuring equal access to infrastructure	Expanding access to infrastructure services for the poor through a system of targeted subsidies; promoting the work of service providers
3. Markets and macroeconomics	
3.1. Financial markets	Investments in the implementation of programs aimed at helping the poor, ensuring more equal access of companies to financing; deepening and expanding access should be complemented by strengthening horizontal accountability, abandoning lobbying of individual large banks
3.2. Labor markets	Investments in the development of alternative social policy measures for regions (countries) (introduction of an unemployment insurance program and an employment program); ensuring the protection of poorer workers employed in the informal economy
3.3. Commodity markets	Removing barriers to foreign direct investment in order to liberalize trade; however, depending on the level of the country's development this may lead to increased income inequality due to the growing demand for skilled labor with the ongoing modernization of production processes; it is necessary to provide workers with the opportunity to freely move to a new job
3.4. Macroeconomic stability	Sound macroeconomic management and regulation of the financial sector to prevent the increase of injustice in the processes of overcoming crises (when restructuring costs are covered by raising taxes and reducing consumption)
4. Global stage	
	Reducing social injustice, discrimination against developing countries (for example, obstacles to migration to rich countries for unskilled workers, obstacles for producers of industrial and agricultural products from developing countries when they are sold in developed countries), leading to unequal provision of resources, taking into account the benefits of participation in the global economy, creating for all regions (countries) equal conditions in the field of economics and politics on a global scale
Source: own compilation taking into consideration the work: Hemerijck A. (Ed.). (2017). The Uses of Social Investment. Oxford: Oxford University Press. Available at: https://www.sipotra.it/wp-content/uploads/2018/11/The-Uses-of-Social-Investment.pdf	

The *Table* shows the main directions of transformative investment, justifying the need for its implementation and taking into account aspects of social justice in the implementation of social policy.

Thus, social policy should take into account the basic provisions of social protection, taking into account gender and structural changes in the labor market, with an understanding of the increasing importance of human capital. Transformative investments in the context of this theory, according to the works of A. Hemerijck and T. Leoni, provide for an increase in funds for lifelong education through the financing of social funds, activation of human capital, expansion of opportunities for social integration and participation in addressing state issues.

Discussion

The problems of social justice and social equality are also relevant for Russia. According to A.M. Ponomarev, for Russia "the refusal to provide freedom with social benefits and a sharply negative attitude toward the role of the state in regulating socio-economic processes turned out to be disastrous" (Ponomarev, 2015). With reference to F. Hayek (1999) the author argues that "there can be no distributive justice where no one distributes. Justice makes sense only as a norm of human behavior". The importance of the role of the state with the understanding "that only the state is able to counteract the elements of the growing social stratification, to guarantee fair access of people to public goods" is reflected in the works of O.T. Bogomolov, who draws attention to the fact that the unfair distribution of benefits leads to a split in society, an increase in tension; the development of the country is "inadequate to the challenges of the post-industrial era" (Bogomolov, 2001a; Bogomolov, 2001b).

Summarizing the research on transformative investments in the context of socially oriented theories, let us highlight the key positions of the theories of the Welfare State, social justice and social policy:

– the state, within the framework of social justice, guarantees the observance of fair competition, private property rights, contracts, as well as free access of citizens to healthcare, culture, sports, social security, etc.;

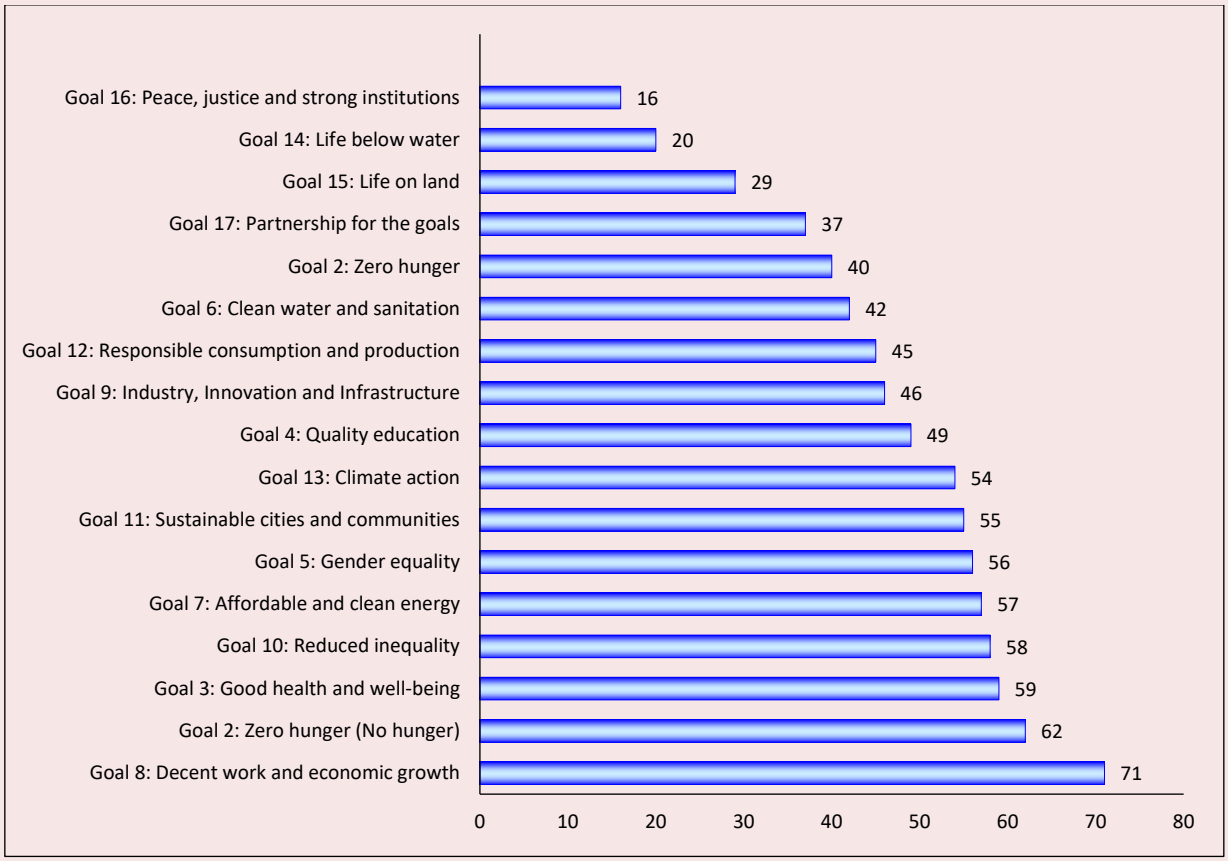
– a preventive social policy is envisaged, investments are focused on increasing labor productivity, supporting employment opportunities, acquiring and maintaining skills to prevent (permanent) unemployment;

– to reduce the risk of poverty and need, long-term strategies are being implemented (throughout life) to invest in human abilities starting from early childhood;

– the prospect of socially transformative investments shifts the emphasis from remittances (compensation) to the service sector.

Speaking about the prospects of transformative investments aimed at addressing social issues, we can note that this trend is influenced by the general situation in the world regarding investment strategies. According to the UNCTAD World Investment Report 2023, "global flows of foreign direct investment decreased by 12 percent to $1.3 trillion in 2022"[16]. Although most of the report is devoted to the issues of achieving the Sustainable Development Goals (SDGs) in the field of energy, it is noted that "social sustainability bonds experienced a sharp decline by 18 percent". This is due to "geopolitical tensions and inflation". Nevertheless, according to the report, sustainable

[16] World Investment Report 2023. Available at: https://sun-connect.org/wpcont/uploads/wir2023_en.pdf (accessed: August 9, 2023).



Source: Annual Impact Investor Survey (2020). P. 45. Available at: https://thegiin.org/assets/GIIN%20Annual%20Impact%20Investor%20Survey%202020.pdf (accessed 09.08.2023).

strategies used by various funds demonstrate a fairly large percentage of solutions aimed at ESG issues (87%), integration of social aspects (82%), transformative (impact) investments (77%)[17]. The main directions of investments (agreed with the SDGs), based on the survey of transformative (impact) investors conducted by GIIN in 2020[18], are formed by the implementation of Goal 8 (decent work and economic growth), Goal 1 – poverty eradication, Goal 3 – good health and well-being[19] (*Figure*).

In Russia, the transformative investing paradigm has also been developed. According to TASS[20], it is indicated that Forbes magazine compiled a rating of Russian impact investors in 2021, which included 31 people. Investments in the "currency of good" for the period 2010–2021, according to the magazine, amounted to 31.5 billion U.S. dollars.

[17] The report indicates that these percentages are calculated from the number of reported funds, but only a third of the funds disclose these issues.

[18] Annual Impact Investor Survey 2020. Available at: https://thegiin.org/assets/GIIN%20Annual%20Impact%20Investor%20Survey%202020.pdf (accessed: August 9, 2023).

[19] 294 investors were interviewed, investors could choose several areas.

[20] Forbes compiled a rating of impact investors in Russia. Available at: https://tass.ru/ekonomika/12222559 (accessed: August 9, 2023).

In the current socio-economic conditions in relation to Russia, an Association of Impact Investors has been established for the development of transformative investment, as well as "Our Future" Foundation, which is a member of GIIN, the Presidential Grants Fund, individual funds, regional associations for social entrepreneurship, whose purpose is to support social initiatives in the regions of the country. It is necessary to note the active cooperation of "Our Future" Foundation with business (for example, the companies Sibur, Norilsk Nickel), banks, governments of individual regions, the Ministry of Finance of Russia; the fund advises entrepreneurs and improves their qualifications, and it has also concluded separate agreements with a number of Russian universities to support social business. In our opinion, the growth of the transformative investment market depends on the promotion of this idea, fits well into the mentality of Russians as a tool for implementing social and environmental projects.

Thus, socially oriented theories, acting as a theoretical platform for transformative investments, are aimed at:

– optimizing the state's social policy in order to maintain a balance between increased activity in the social sphere and taking into account already established institutions where the state is not ready to make drastic changes in the redistribution of property and income;

– understanding that justice is closely linked to long-term prosperity, welfare and is important in the fight against poverty; it contributes to increasing human mobility, overcoming regional disparities and inequality "traps";

– substantiating the need for the active participation of more "poor" segments of the population in development processes, where the development processes themselves become more resistant to shocks, which leads to the improvement of institutions, poverty reduction, and the use of the potential of society.

Conclusion

Reforms implemented by different countries and aimed at the reduction of pension provision, sick pay and unemployment benefits have led to the need to search for new forms and methods of implementing social protection, since not all states already provide the same standard of living previously supported by state pensions and benefits. The new concept of the state of social investments, instead of paying compensation to the population affected by negative events, restoring the social protection system, provides for a preventive social policy (to give the population tools to prevent such events or minimize their consequences). In this regard, transformative investments (taking into account the formation of human capital at all stages of life) focus on increasing labor productivity. The prospect of social investment shifts the emphasis from remittances (compensation) to the service sector.

Taking into account the aspects of social justice in the implementation of investment provides for the selection of optimal policy options that should be aimed at alleviating poverty, reducing the uneven distribution of wealth and redistributing influence, benefits or subsidies; elaborating complementary measures in the implementation of social policy, collectively providing social protection, education, labor mobility.

The development of the theoretical basis for the study of transformative investments in the context of selected socially oriented theories forms a scientific basis that allows us to substantiate key provisions and directions of investing transformative investments that provide for the development of the social sphere, ensuring equal human rights in society, increasing its mobility, obtaining equal access to quality education, erasing gender differences, etc., optimizing the social policy pursued by countries.

References

Animitsa E.G., Dvoryadkina E.B., Kvon G.M. (2020). Transformative investments – regional development mainstream. *Vestnik Belgorodskogo universiteta kooperatsii, ekonomiki i prava,* 4(83), 83–95. DOI: 10.21295/2223-5639-2020-4-83-95 (in Russian).

Azizi E.O., Azizi O., Klevtsov V.V. (2022). Impact investments: World experience and features of the Russian market. *Fundamental'nye issledovaniya=Fundamental Research,* 3, 7–12 (in Russian).

Baines S., Bassi A., Csoba J., Sipos F. (2019). Social investment in welfare: A sub-national perspective. *Implementing Innovative Social Investment*, 1-22. DOI: 10.1332/policypress/9781447347828.001.0001. Available at: https://policypress.universitypressscholarship.com/view/10.1332/policypress/9781447347828.001.0001/upso-9781447347828-chapter-001 (accessed: June 5, 2023).

Bambra C. (2007). Sifting the wheat from the chaff: A two-dimensional discriminant analysis of welfare state regime theory. *Social Policy and Administration,* 41(1).

Bogomolov O.T. (2011a). Non-economic facets of the economy. *Rossiya i sovremennyi mir=Russia and the Contemporary World,* 2(71), 6–14 (in Russian).

Bogomolov O.T. (2011b). Socio-humanitarian aspects of modernization of Russia. *EKO=ECO*, 7(445), 135–150 (in Russian).

Bondarenko V.V. (2015). *Sovremennoe obshchestvo i ekonomika: analiz sostoyaniya i perspektivy razvitiya v usloviyakh ekonomicheskoi turbulentnosti* [Modern Society and Economy: Analysis of the State and Prospects of Development in the Conditions of Economic Turbulence]. Penza: Izd-vo PGU.

Bonoli G. (1997). Classifying welfare states: A two-dimension approach. *Journal of Social Policy,* 26(3).

Bugg-Levine A., Emerson J. (2017). *Sotsial'no-preobrazuyushchie investitsii. Kak my menyaem mir i zarabatyvaem den'gi* [Impact Investing: Transforming How We Make Money While Making a Difference]. Moscow: Politicheskaya entsiklopediya.

Chebinyaeva I.L. (2022). Social justice in youth assessments: Axiological and behavioral aspects. *Izvestiya vysshikh uchebnykh zavedenii. Povolzhskii region. Obshchestvennye nauki,* 3, 60–74. DOI:10.21685/2072-3016-2022-3-5 (in Russian).

Dolgorukova I.V. (2019). Corporate social investment in modern Russia: between economic efficiency and social justice. *Vestnik Permskogo universiteta. Filosofiya. Psikhologiya. Sotsiologiya=Perm University Herald. Series "Philosophy. Psychology. Sociology",* 3, 402–411. DOI: 10.17072/2078-7898/2019-3-402-411 (in Russian).

Dvoryadkina E.B., Kvon G.M. (2020). Essential content characteristics of transformative investments. *Vestnik ekonomiki, prava i sotsiologii,* 2, 7–10 (in Russian).

Esping-Andersen G. (1990). *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press. Available at: https://www.researchgate.net/publication/243774920_The_Three_Worlds_Of_Welfare_Capitalism (accessed: May 25, 2023).

Euken W. (1995). *Osnovnye printsipy ekonomicheskoi politiki* [Principles of Economic Policy]. Moscow: Progress; Univers.

Gainullina F.I., Sabirov Kh.F. (2011). Social justice phenomenon according to the classical theory of elite. *Trud i sotsial'nye otnosheniya,* 22(12), 52–63 (in Russian).

Grinberg R.S. (2012). *Svoboda i spravedlivost'. Rossiiskie soblazny lozhnogo vybora* [Freedom and Justice. Russian Temptations of False Choice]. Moscow: Infra-M.

Grinchenko E.A. (2022). Social justice as a factor in optimizing the system of social elevators in the interethnic space. *Gumanitarii Yuga Rossii=Humanities of the South of Russia,* 11(4), 114–127 (in Russian).

Hayek F.A. von (1999). *Poznanie, konkurentsiya i svoboda: antologiya soch.* [Cognition, Competition and Freedom: An Anthology]. Saint Petersburg: Pnevma.

Jackson E.T. (2013). Interrogating the theory of change: Evaluating impact investing where it matters most. *Journal of Sustainable Finance & Investment*, 3(2), 95–110. DOI: 10.1080/20430795.2013.776257

Kanarsh G.Yu. (2019). Social justice: Modern history of the idea. *Gorizonty gumanitarnogo znaniya,* 1, 48–73. Available at: http://journals.mosgu.ru/ggz/article/view/951. DOI: 10.17805/ggz.2019.1.3 (in Russian).

Korchagina I.I., Prokofieva L.M. (2022). Subjective perception of social inequality – the population opinion about social justice. *Demograficheskoe obozrenie=Demographic Review,* 9(4), 4–21. DOI: https://doi.org/10.17323/demreview.v9i4.16742 (in Russian).

Kvon G.M. (2020). Assessing the social impact of transformative investments: Challenges and approaches. *Vestnik ekonomiki, prava i sotsiologii*, 4, 24–28 (in Russian).

Kvon G.M. (2023 Transformative investments in the context of implementing social policy and ensuring social justice: Theoretical aspect. *Vestnik ekonomiki, prava i sotsiologii,* 1, 20–23 (in Russian).

Lyshchikova Yu.V. (2021). Blended value concept as a new approach to creating and measuring value. *Teoriya i praktika obshchestvennogo razvitiya=Theory and Practice of Social Development,* 1(155), 83–87 (in Russian).

Maldonado M., Corbey M. (2016). Social return on investment (SROI): A review of the technique. *Maandblad Voor Accountancy en Bedrijfseconomie*, 90, 79–86. DOI: 10.5117/mab.90.31266

Pankrukhina A.M., Lifanovskaya O.V., Petrenko M.T. (2023). Impact investing as a tool to improve the efficiency of solving problems in the social sphere. *Vestnik evraziiskoi nauki=The Eurasian Scientific Journal,* 15(s2) (in Russian).

Piketty T. (2015). *Kapital v XXI veke* [Capital in the Twenty-First Century]. Moscow: Ad Marginem Press.

Ponomarev A.M. (2015). Social justice and the problem of human rights. *Znanie,* 11-1, 143–148 (in Russian).

Popov Ye.V. (2018). Economic sociotronics of the 21st century. *Upravlenets=The Manager,* 9(2), 2–5. DOI: 10.29141/2218-5003-2018-9-2-1 (in Russian).

Rawls J. (1995). *Teoriya spravedlivosti* [A Theory of Justice]. Novosibirsk: Izd-vo Novosib. un-ta.

Shamileva R.K. (2022). Social justice in a crisis of socio-cultural situation. *Sotsial'no-gumanitarnye znaniya*. No. 1. S. 160–164.

Shuremov E.L. (2018). *Metodologiya i istoriya ekonomicheskoi nauki. Korotko o glavnom* [Methodology and History of Economic Science. Briefly about the Main Thing]. Izdatel'skie resheniya.

Sidorina T.Yu. (2010). Institutions of self-organization of citizens and the development of the theory of the Welfare State. *Obshchestvennye nauki i sovremennost'=Social Sciences and Contemporary World,* 5, 87–100 (in Russian).

Sidorina T.Yu. (2012). Welfare State as a starting point: The place of the welfare state in social history. *Voprosy filosofii*, 11, 19–30 (in Russian).

Yunus M. (2017). *Mir trekh nulei. Kak spravit'sya s nishchetoi, bezrabotitsei i zagryazneniem okruzhayushchei sredy* [A World of Three Zeros: The New Economics of Zero Poverty, Zero Unemployment, and Zero Net Carbon Emissions]. Moscow: Al'pina Didzhital.

Zelikova Yu.A. (2022). Social justice and social reform under condition of population aging. Systematic literature review. *Upravlencheskoe konsul'tirovanie=Administrative Consulting,* 1, 124–138 (in Russian).

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On the Issue of Poverty in Russia: Facts, Paradoxes, Specifics, and Alleviation Prospects

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Abstract. The relevance of the research topic is determined by the need to reduce poverty in Russia to improve the quality of human capital in order to ensure long-term and sustainable growth of its economy. The paradox of the current welfare system in the country has been established: a significant excess of the real poverty rate compared to its maximum permissible value against the background of high indicators of total national wealth and economic potential of the country. The aim of the study is to theoretically substantiate the failure of Russia's transition in 2021 to a new methodology for determining the national poverty line; to statistically test the hypothesis of high regional income inequality as one of the main features of Russian poverty, limiting the possible rates of economic growth; to formulate the minimum necessary tools of state policy to promote poverty reduction in the country. The research methodology is based on the system approach; on the application of methods of correlation, regression, cluster analysis of data (including the method of k-means and hierarchical clustering), methods of classification, comparison, contrast and time series analysis. The models were identified by means of analysis of variance, testing of statistical hypotheses about the reliability of models and the significance of their parameters, coefficient of determination. In the context of the concepts of "social state" and "sustainable development" the inappropriateness of Russia's rejection of the normative approach to the definition of the national poverty line in favor of only a relative approach (44.2% of Me) was substantiated. Regression dependencies between the poverty rate and per capita GRP (taking into account its structural components) were constructed for Russia's constituent entities; four clusters were formed on the basis of such dependencies, within which direct and inverse relationships of different strength between the poverty rate and structural components of per capita GRP were identified. The minimum necessary toolkit of state policy to promote poverty reduction in Russia, taking into account the existing capabilities of its economy, was formed.

Key words: economic growth, human capital, social inequality, poverty, cost of living, median income, national poverty line, redistributive policies.

Introduction

Poverty as "the result of a very long and indirect causal chain that goes back to the basic foundations of the socio-economic system, to its very core" (From the editorial board..., 2015, p. 30), is one of the most acute global problems of the 21st century. Without its solution, "creating a sustainable future in an interdependent world seems impossible" (Bobylev, Solov'eva, 2017, p. 27). This understanding of the importance of overcoming poverty in its various forms "to achieve a better and more sustainable development of the future for all" was officially recognized in the UN concept document "Sustainable Development Goals for the period 2016–2030 for all countries of the world"[1], which replaced the Millennium Development Goals (2000–2015). All UN Member States, including the Russian Federation, committed to contribute to the achievement of the adopted goals and the target indicators contained therein by 2030.

According to the World Bank research, in general, humanity has made significant progress in reducing extreme poverty in 1990–2019 (for reference: in 2020, the World Bank raised its minimum global limit from 1.9 to 2.15 U.S. dollars per person per day according to 2017 PPP). However, this positive trend actually stopped in 2020, when the annual increase in the population with incomes below the new global extreme poverty line amounted to about 70 million people. The World Bank report "Poverty and Shared Prosperity" (Washington, October 5, 2022), along with a drop

[1] Transforming our world: The 2030 agenda for sustainable development. UN. Available at: https://sdgs.un.org/ru/2030agenda (accessed: June 2, 2023).

in global growth rates, identified the destructive consequences of the COVID-19 pandemic, high food prices and a special military operation as the main reasons that slowed down the fight against poverty. According to the World Bank experts[2], the share of the world's population below the extreme poverty line has increased from 8.4% in 2019 to 9.3% in 2020; by 2030, almost 600 million people, or about 7% of the world's population, will be forced to live on less than 2.15 U.S. dollars. Rosstat estimated the poverty level in Russia by the end of 2022 (with income below the poverty line of 13,688 rubles per month per person) at 15.3 million people, or 10.5% of the total population of the country, which exceeds the maximum permissible value for this indicator of 7% (Senchagov et al., 2013, p. 305).

In accordance with the main ideas contained in the World Bank report (2022), in the current situation, the world is unlikely to be able to achieve Goal 1 of the UN SDG – to end extreme poverty by 2030, if economic growth rates do not exceed the indicators of previous periods in the rest of the decade.

It is fundamental to say that poverty is a relative and ambiguous concept depending on the general standard of living in a given society. In this context, for example, the Nobel Prize laureates in Economics A. Banerjee and E. Duflo, in relation to the current stage of socio-economic development, define this phenomenon not just as a lack of money, but as an "inability to fully realize their human potential" (Banerjee, Duflo, 2019, pp. 189, 192). It means, according to one of the leading scientists of the world economic science T. Piketty, that the problem of poverty cannot be eliminated; poverty can be reduced or overcome (Piketty, 2020, p. 433).

As world practice shows, the large-scale poverty hinders the strategic development of the country, which, for example, the Nobel laureate in Economics J. Stiglitz explains its so-called "cumulative effects" (economic, political and social). In his best-selling book, The Great Divide, Stiglitz emphasizes: "A high level of poverty leads to short life cycles of economic growth and threatens not only economic, but also political and social stability, ... entails less economic mobility and poorer opportunities for many generations" (Stiglitz, 2016, pp. 327–328).

As for poverty in today's Russia, of course, its spread to actively working citizens and young people, on whom society assigns the mission of reproducing the population and labor potential of the country, is of concern. In other words, it means that the factor such as self-reproduction of poverty has formed in the Russian Federation, due to the low level of income (primarily wages) for the majority of citizens and the official subsistence minimum. The indicated situation is a powerful limiter of labor motivation and economic activity of the population (Kormishkina, Ermakova, 2021); it is fraught with an increase in crime and the risk of social upheaval; it can intensify investor uncertainty, increase transaction costs in the economy.

In this context, it becomes obvious that reducing the poverty and overcoming serious internal contradictions entailed by it cannot be provided by "one-time decisions "On assistance to low-income segments of the population" (Bobkov, Odintsova, 2020, p. 10); they should be one of the main missions of the modern Russian state as a social state in the full sense of the word (Ilyin, 2017, p. 12), whose policy, in accordance with paragraph 1 of Article 7 of the Constitution of the Russian Federation, is aimed at creating conditions that ensure a decent life and free human development.

Against the above-mentioned background, the theoretical and methodological aspects of poverty, related to the clarification of its criteria (qualitative and quantitative), verification of adequacy and improvement of its measures, justification of

[2] Reference source: Adjusting the international poverty line values. Available at: https://www.vsemirnyjbank.org/ru/news/factsheet/2022/05/02/fact-sheet-an-adjustment-to-global-poverty-lines#18

effective ways and tools for reducing and overcoming the phenomenon of new poverty, which form a special subject area for responsible scientific research and development, require further understanding.

Current state of research on this problem

Poverty is one of the acute and topical scientific problems with unfinished theoretical discussion, despite the existence of numerous works devoted to the study of this phenomenon in different time periods. After the global crisis of 2008–2009, the works of J. Sachs (Sachs, 2011), A.V. Banerjee and E. Duflo (Banerjee, Duflo, 2011; Banerjee, Duflo, 2019), T. Piketty (Piketty, 2014), J.E. Stiglitz (Stiglitz, 2015; Stiglitz, 2016), in which property injustice and poverty were positioned as an inherent property of not only peripheral but also industrialized countries, were widely popularized and actively discussed in the scientific community, (From the editorial board..., 2015, p. 32). At the same time, poverty researchers highlight the innovation of T. Piketty associated with the attempt of a different (inverted) interpretation of the well-known hypothetical curve of S. Kuznets (Kuznets, 1955) and the creation of a "fundamental law" to explain the relationship between the rate of economic growth and the level of inequality and poverty in the country.

It is worth noting that there is no unambiguous universally accepted definition of poverty in the scientific literature, as this definition is relative in nature, constantly being specified and modified (Ovcharova, 2009, p. 8). At the moment, the theory of poverty definition can be distinguished between four conceptual approaches: welfarist, deprivation, functional capacity theory and subjective. The first of them relies on such welfare indicators as household income or consumer expenditures, and predominantly on monetary tools of absolute poverty (subsistence minimum, global PPP poverty line). We should say that this approach was used in the 1960s by the American economist and statistician M. Orshansky (Orshansky, 1965) as a methodological basis for calculating the poverty threshold for the United States; the formula created in this case is still used by the U.S. government.

The deprivation approach proposed by British economist P. Townsend (Townsend, 1979), poverty is assessed on the basis of insufficient resources to meet the consumption standards (basic needs) established in society. He expertly formed a list of "deprivations" experienced by an individual, indicating that it is impossible for them to maintain a way of life that is considered minimally acceptable at a given development stage (Kormishkina, Ermakova, 2021). We should note that it was Townsend who drew attention to the fact that a significant concentration of individuals (households) experiencing "deprivations" is observed up to the level of income equal to 50–60% Me. It is noteworthy that in the 1990s this approach to the definition of poverty was widely recognized in developed economies.

In the theory of functional capabilities, developed by the Nobel Prize winner in the field of economics A. Sen, poverty is considered as an extreme form of economic inequality and is presented as a result of deprivation of basic "functional capabilities". Moreover, the choice of "opportunity set", according to this theory, depends on the system of values shared by an individual; it also reflects their freedom to choose one of many ways of life (Sen, 1987). In such a context, reducing the analysis of poverty solely to the study of differences in income is recognized by A. Sen is recognized as erroneous.

Regarding the subjective approach to poverty assessment, we consider it necessary to note that its most specific methods and models are proposed by A.V. Banerjee and E. Duflo (Banerjee, Duflo, 2012; Banerjee, Duflo, 2019), M. Lobue and F. Polmisano (Lobue, Polmisano, 2021). A greater use of randomized experiment is here proposed as an effective applied policy tool for poverty reduction.

The previously mentioned Nobel laureates in economics A.V. Banerjee and E. Duflo were at the forefront of the experimental revolution in the fight against poverty and the creation of the concept of development economics. In the context of the latter, one of the main obstacles and real constraints to possible growth rates and economic development is the "low-income trap" (J.B. Delong, L.H. Summer, P. Lucas) and the "middle-income trap" (the term was introduced in 2007), caused by the inability of a country to support the transition from low-value-added to high-value-added industries, insufficient social capital and problematic institutions, the growth of the informal economy, etc. (Guriev, Treisman, 2019).

In Russian economic science, the phenomenon of poverty was identified as a research subject only in the early 1990s (in pre-reform Russia there was an ideological denial of this problem). To date, the most widely known and scientifically recognized works of L.N. Ovcharova (Ovcharova, 2009; Ovcharova, 2017; Ovcharova et al., 2022), V.A. Litvinov (Litvinov, 2021), V.N. Bobkov and E.V. Odintsova (Bobkov, Odintsova, 2019; Bobkov et al, 2020), which present identification criteria and poverty indicators; show the features of Russian poverty and its profile; propose and substantiate measures to reduce extreme poverty, taking into account the current capabilities of the Russian economy.

Recently, growing attention of Russian scholars and specialists has been attracted by the issues caused by the change in the methodology of determining the basic poverty line in the country in 2021. The Government of the Russian Federation abandoned the approach related to the use of the consumer basket in favor of the approach in which the poverty line is calculated as a percentage of Me. According to a number of Russian scholars (Bobkov et al., 2022), such "innovation" deprives society of the possibility of control over the correctness of calculations.

Thus, we can state that the discussion is incomplete and some fundamental theoretical and methodological aspects of poverty are underdeveloped. This situation, in addition to distorting the real picture of Russia's well-being, limits the possibility to use competitiveness factors (primarily the quality of human capital) in order to ensure long-term and sustainable economic growth.

The aim of the research is to theoretically substantiate the failure of Russia's transition to a new methodology for determining the national poverty line in 2021; to statistically test the hypothesis of high regional income inequality as one of the main features of Russian poverty, limiting the possible economic growth rates; to formulate the minimum necessary tools of state policy to promote poverty reduction in the country.

Research methods

The methodology of the study is based on a systems approach, which has a high research and explanatory potential. It is a special methodology of scientific analysis and thinking, which gives a comprehensive, integrated, and therefore more objective and constructive approach to the study of economic reality; makes it possible to build a holistic picture of the object under consideration, to review the latter in an organic relationship with the factors of its environment.

We used the following special methods in the study.

1. Formation of databases necessary for displaying poverty lines in Russia and other countries for 2000–2022. The information base are data from Rosstat, Eurostat, usa.gov, the World Bank, annual reports of Credit Suisse Institute, and others.

2. Intelligent data analysis with tool support for Microsoft Excel, PPP SPSS, R, including:

– regression analysis to group the constituent entities of the Russian Federation by the nature of the relationship between the poverty rate

(endogenous variable Y) and GRP per capita (exogenous variable X); we carried out the identification of the obtained models using analysis of variance, testing of statistical hypotheses about the reliability of models and the materiality of their parameters (Fisher's and Student's criteria), definition of coefficients of correlation, determination and average approximation error;

– k-means method, used within the framework of cluster analysis for preliminary partitioning of a large data set into groups to predict the number of clusters (in our case k = 4) and to check the presence of unaccounted data and relationships in the sets. The object composition of clusters is determined based on minimizing the variability of selected parameters within a cluster and maximizing their variability between clusters (Euclidean distances of observations from the so-called centers (mean values) for each parameter);

– structural and comparative analysis of the sectoral GRP structure of Russia's constitute entities within the constructed clusters; comparison of poverty levels with changes in the average indicators of structural components of per capita GRP for each cluster; we constructed a matrix of pair correlation coefficients, and analyzed it using the Chaddock table.

Such analysis is important for testing the hypothesis that significant differentiation of regions by income levels within the same types of activities is one of the features of Russian poverty.

Results and their discussion

Russian welfare system paradox

The analysis of official factual data shows that, despite the difficult situation caused by the socio-economic implications of the COVID-19 pandemic and international sanctions against Russia, the latter, even according to international estimates, is a productive and wealthy country. This statement is confirmed, first of all, by the results obtained in the course of comparative analysis of the world's countries by per capita GDP (an indicator of the level of economic activity and quality of life). According to the World Bank, in 2022 its value in the Russian Federation exceeded 15 thousand U.S. dollars and approached the record level of 2013; in the ranking of 145 states by this indicator, Russia rose to 61st place, improving its position compared to 2020 (65th place).

In addition, the analysis confirmed the even stronger position of the Russian Federation in the world ranking in terms of per capita total national wealth (45th place out of 251 countries by the end of 2022). Moreover, in the structure of Russia's national wealth, human capital (46%), rather than natural (20%) and production (33%), accounts for the largest share; however, this value is much lower than in OECD countries (70%)[3].

The data presented in Table 1 forms a certain idea about the economic and production potential of the Russian Federation in comparison with some other countries. According to them, Russia's national wealth, unfortunately, does not transfer to the welfare of Russians with low incomes (the lower wage level of those employed in the economy, excluding maximum earnings, confirms it); on the contrary, it is accompanied by increasing social inequality due to the growing concentration of national wealth within the upper decile of the population[4] and a significant excess of actual values of the poverty rate over its maximum permissible level of 7%. For reference: the poverty ratio decreased in 2000–2012 from 24.6 to 10.7%; it increased in 2013–2018 (from 10.7 to 13.3%); and declined to 10.5% in 2022 due to social support measures for the poor during the COVID-19 pandemic.

[3] World Bank. Available at: https://datatopics.worldbank.org/world-development-indicators/

[4] For instance, according to the World Bank, in 2019 the income Gini coefficient was about 0.38 in the Russian Federation and was lower than in the United States (0.41) but significantly higher than in France (0.285), Germany (about 0.32), and Norway (0.286).

Table 1. **Comparative macroeconomic parameters for selected countries of the world, 2017**

Indicator \ Country	USA	Russia	China	Eurozone
GDP, billion U.S. dollars	19,484	4,027	23,190	12,700
Population, million people	324.4	146.3	1,410	338
Production and agricultural part of GDP* ("real" GDP), % of GDP	20	34	48	27
Legal and illegal migrants, million people	≈20	≈6	no data	≈30
Number of persons registered, but not residing, million people	no data	12–13	no data	no data
Total, million people generating GDP	345	140	1,410	368
Production of real GDP per "real" per capita, U.S dollars	11,295	9,780	7,900	9,318
Salaries of hired staff (average including top salaries) per month*, U.S. dollars	5,047	1,713	1,764	no data
Salaries of employees (excluding maximum earnings) (95% of personnel) per month, U.S. dollars	≈4000	≈1000	≈1350	no data

* In PPP U.S. dollars.
According to: Zanin V. (2023). Russia can quickly become the most developed country in the world. Increase in the well-being of all segments of the population, and the low-income at least 2-fold is possible already in 2023-2024. *Argumenty nedeli*, 5(861), 18–19.

The above allows talking about a special paradox of the welfare system in the Russian Federation, expressed in a significant excess of the real poverty level compared to its threshold value against the background of high indicators of per capita aggregate national wealth and economic potential of the country. In other words, a state's wealth does not guarantee the poverty absence due to high inequality in the distribution of income and wealth.

Features of a new methodology for determining the national poverty line in the Russian Federation and its shortcomings

This study once again convinces us of the necessity and significance of raising the issue of objective measurement of poverty, which is the subject of a special current scientific debate. We should remember that since 1990 the World Bank has established a common methodology for international comparisons for all countries of the world – the so-called world poverty line, which is periodically updated as the gaps in price levels in different countries increase. The most recent update of the global poverty line occurred in September 2022; the poverty threshold was raised from 1.90 U.S. dollars per person per day in PPP terms to 1.90 U.S. dollars per person per day in PPP terms. The poverty threshold was raised from 1.90 U.S. dollars per person per day at 2011 PPP to 2.15 U.S. dollars per person per day at 2011 PPP. The poverty threshold was raised from 1.90 U.S. dollars per person per day at 2017 PPP to 2.15 U.S. dollars per person per day at 2017 PPP. In addition, the World Bank has set higher extreme poverty thresholds for lower-middle and upper-middle income countries at 3.65 U.S. dollars and 6.85 U.S. dollars per person per day, respectively. The World Bank has set higher extreme poverty thresholds for lower-middle and upper-middle-income countries at 3.65 and 6.85 U.S. dollars per person per day PPP 2017, respectively[5].

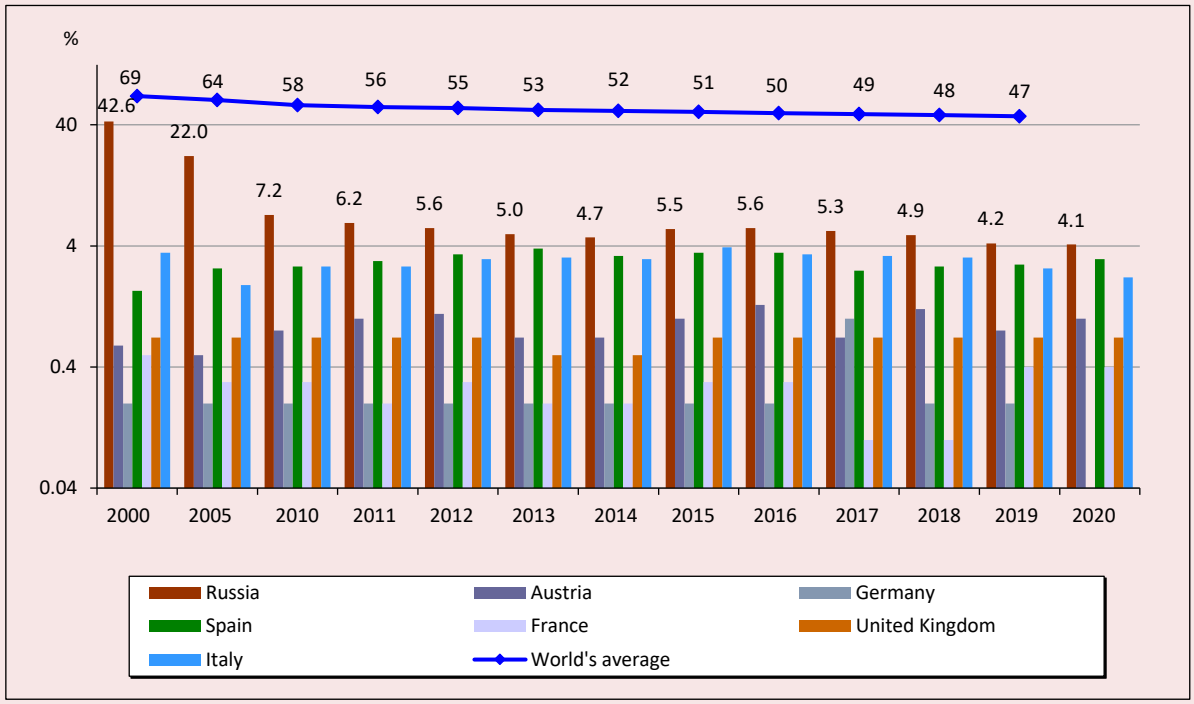
Figure 1 presents a comparative analysis of the global poverty rate with a similar indicator for individual countries, including Russia, determined on the basis of the global poverty line of 6.85 U.S. dollars per person per day.

The choice of such an indicator of extreme poverty for Russia, in the context of the mentioned above, is conditioned by its positions in the world rankings in terms of "GDP per capita" and "total national wealth per capita".

According to the data in Figure 1, 4.1% of Russians were in extreme poverty in 2020 (for reference: 4.9% in 2018; 4.2% in 2019). It is worth

[5] Updating the international poverty line with the 2017 PPPs. Available at: https://blogs.worldbank.org/opendata/updating-international-poverty-line-2017-ppps

Figure 1. Comparative analysis of selected countries and the world as a whole by share of population living below the poverty line, 2000–2020 (in constant 2017 PPP prices)



Source: World Bank data. Available at: https://datatopics.worldbank.org/world-development-indicators/

noting that due to the effects of the COVID-19 pandemic and international sanctions, it has become more difficult for Russia to overcome extreme poverty and improve living conditions within the established institutional environment.

It follows from the above that the main purpose of the global poverty line is to track the dynamics of the global level of extreme poverty and assess trends in achieving the global goals of the UN, the World Bank and other international organizations in the field of sustainable development. A national poverty line (absolute, relative, subjective, combined) is needed to assess the effectiveness of the national development model and to work out strategic solutions to reduce multidimensional poverty in the country, taking into account not only monetary but also nonmonetary criteria of this phenomenon.

In Russia, since the USSR period and up to 2020 inclusive, only the absolute approach related to the consumer basket has been used to calculate the national poverty line (federal subsistence minimum). Moreover, as evidenced by global and Russian practice, the ways of forming such a basket can be different: normative, normative-statistical, statistical. In the Russian Federation since 2014 and before the transition to a new methodology for calculating the national poverty line, the consumer basket was formed by the normative-statistical method, in which only its food component (50% of the basket) had natural content, and the other two (non-food goods and services) were calculated as a percentage of it (25% each) regardless of the inflation rate in the country. The main disadvantage of this method of forming the consumer basket is that it leads to an underestimated level of the minimum wage and social transfers, although it is originally designed to overcome poverty (Kormishkina, Ermakova, 2021).

According to experts, the shortcoming of such a definition of the poverty line could have been eliminated by switching to a normative method of formation of the consumer basket for all its components, which allows taking into account consumer spending "in the real dynamics of the price ratio" (Bobkov et al., 2020). Instead, starting from 2021, the Russian government abandoned the absolute approach to defining the poverty line associated with a specific consumer standard, i.e. the consumer basket, in favor of a relative one in which the national poverty line is calculated as a percentage of median income; it was set at 44.2% of Me. For comparison: in the EU countries this poverty indicator is 60% of Me; in the states of medium development – 50%, and in the least developed countries – 40% (Kormishkina, Ermakova, 2021). It is noteworthy that the basic poverty line has changed insignificantly – from 11.6 thousand rubles (Bobkov et al., 2020); in 2022 it was determined by Rosstat at the level of 13,545 rubles and has not yet been revised in 2023.

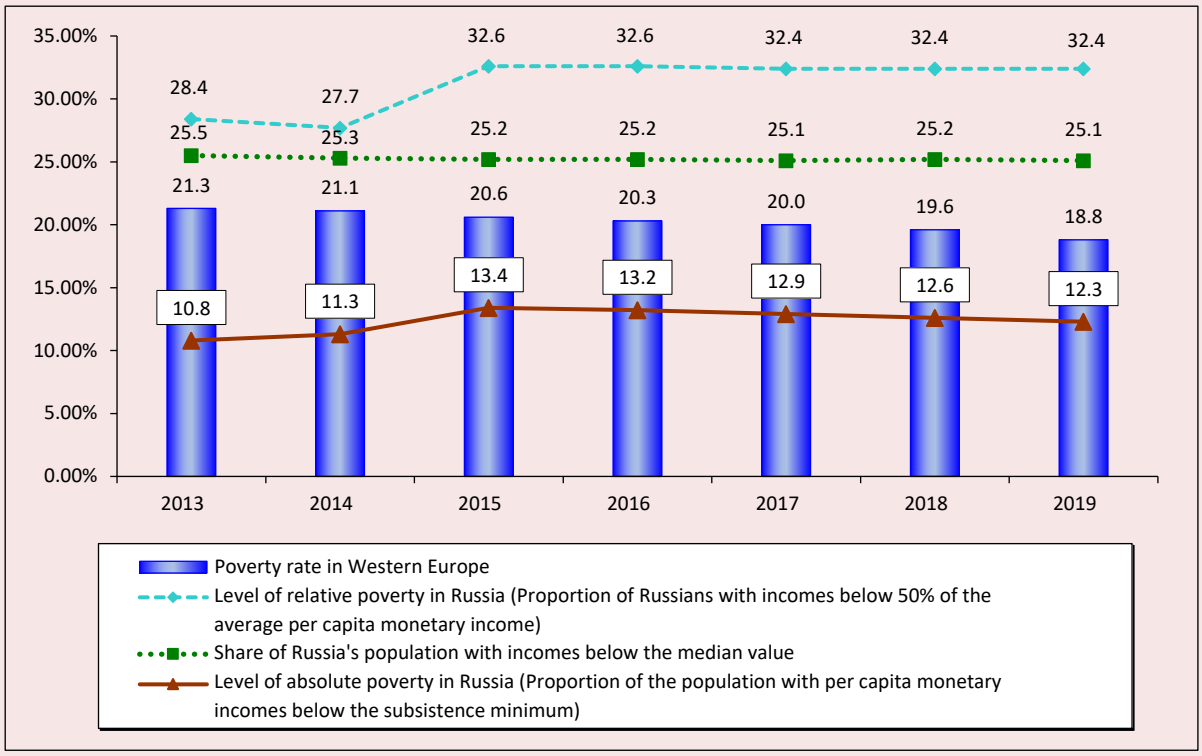
We should note that in all EU countries, in all OECD countries, which account for about 60% of global GDP, in the USA, Kazakhstan and some other economies, both approaches to determining the national poverty line (absolute and relative) are used. At the same time, the latter serves to reveal how the consumption of the poorest strata of society, corresponding to the basket, lags behind the average level of consumption in a country. With a significant lag, either the consumer basket is revised upwards, or additional social support is provided to the most vulnerable segments of the population. In Russia, as we have noted above, currently only the relative poverty line is officially calculated. With this approach, the poverty line, in our opinion, looks doubtful: it analyzes only income and does not include consumer spending, which is the basis for identifying a set of "functional capabilities" of an individual and their quality of life.

We hold the same position as V.N. Bobkov, which consists in the fact that the rejection of the normative approach is also illegal because "the median income has a very distant relation to the lower strata of the population. The mechanism of transparent determination of the subsistence minimum is being destroyed" (Bobkov et al., 2022, p. 80). In other words, society is deprived of the ability to control the correctness of the calculation of the subsistence minimum. In addition, it is important to note that the current official poverty line in Russia does not take into account the nonmonetary aspects of multidimensional poverty (the World Bank indicator) concerning the possibility of solving the housing problem, the availability of high-quality educational and medical services, sanitation, water supply, etc., which not only complement the monetary criteria of poverty, but are also extremely important for improving the quality of life of the poorest segments of the population. In this context, Russian scientists have calculated a socially acceptable poverty line for Russia, which is not 13.5, but 32 thousand rubles (Bobkov et al., 2020). Thus, it is necessary to state the discrepancy between the real and official poverty line, which prevents the reduction of multidimensional poverty in the Russian Federation, characterized by significant human capital.

The data in *Figure 2* form a general idea of absolute and relative poverty in Russia (before the change in the methodology for calculating this phenomenon in the Russian Federation in 2021) in comparison with Western European countries. The indicators presented here confirm the existence of not only a significant discrepancy between the absolute and relative poverty lines, but also an underestimation of the official poverty line in the country, which gives this phenomenon a chronic character in reality.

As we have said above, by the end of 2021, according to Rosstat, the share of Russians with

Figure 2. Comparative analysis of the poverty level dynamics in the Russian Federation and Western Europe before the COVID-19 pandemic, %



According to: Federal State Statistics Service and SPS "KonsultantPlus".

incomes below the basic poverty line decreased to 10.5% (the lowest value of the indicator in recent years; before that in 2012 – 10.7%). Rosstat explains this fact by the growth of nominal incomes due to social benefits for different categories of citizens (for example, the introduction of a single benefit, which is paid from the 12th week of pregnancy till the child reaches the age of 17); targeted support from the state, the restoration of economic activity after COVID-19, with subsequent employment growth and an increase in wages, and rising income from entrepreneurial activity. At the same time, among the poverty reduction factors, Rosstat identified an increased mortality of pensioners due to COVID-19 (among this socio-demographic group, the share of the poor is very significant)[6].

[6] Federal State Statistics Service. Available at: https://rosstat.gov.ru/statistic

Regarding the profile of Russian poverty, it seems fundamental to state the stability and scale of the so-called new poverty in its structure. In fact, it means the predominance of low-income jobs in the labor market; low wages for a group of actively working citizens with self-awareness inherent in representatives of the middle class (Stiglitz, 2015, p. 62). This situation indicates the need for a radical transformation of the Russian welfare system in the context of the welfare state policy.

High regional inequality in per capita income determining the persistence of large-scale poverty in Russia

The research statistically confirmed another feature of Russian poverty – high regional inequality in per capita income, which, given the weakness of social institutions (in their broad sense), steadily reproduces the low-income level

and quality of life of certain territories. At the same time, regional economic inequality in the Russian Federation in the 2000s can be explained mainly by the agglomeration effect of large cities, which is strengthened by the institutional advantages available here, as well as by a special competitive advantage (predetermined by the raw materials export (rent) model of national economic development) in the form of hydrocarbons (oil, gas) or primary processing products demanded by the world market (Aganbegyan, 2017). Obviously, a high indicator of per capita GRP expands the opportunities not only for the formation of the revenue part of the budget, but also for redistributive policy and social support of citizens in need.

Within the framework of the research, we have carried out a statistical test of the hypothesis. Basically, this approach is quite consistent with the scientifically recognized idea that it is necessary to consider the problems of economic growth, income inequality and the resulting social processes not separately, but in the aggregate, in the relationship between them in order to determine effective instruments of social policy. We can note, for example, the study by A.Yu. Shevyakov and A.Ya. Kiruta on the impact of excessive inequality (absolute poverty) on economic growth, which focuses, among other things, on the need to jointly use the effects of income redistribution and economic growth to fundamentally solve the problem of large-scale poverty in Russia (Shevyakov, Kiruta, 2009, p. 148). However, in the framework of analyzing the above-mentioned feature of Russian poverty – the persistence of high regional income inequality – it seems appropriate to find out the impact of economic activity level and GRP sectoral structure on poverty in Russia's constituent entities.

Based on the visual representation of the constructed clustering dendrograms using PPP Statistica software based on hierarchical procedures: methods of single ("nearest neighbor"), complete ("distant neighbor"), average relationship and Ward's method – it was assumed that Russia's constitute entities form four natural clusters according to the linear regression dependence $Y = a + b \times X + \varepsilon$, where Y is the poverty rate in the region, reflecting the share of the population with income below the poverty line; X – GRP per capita (rubles), as a generalizing indicator characterizing the level of economic activity and quality of life in a particular entity of Russia and indicating the ongoing changes in regional inequality (*Tab. 2*).

Table 2. Clustering of RF constituent entities by linear regression relationship $Y = a + b \times X + \varepsilon$

Cluster I (total number of entities: 9)	Cluster II (total number of entities: 13)	Cluster III (total number of entities: 47)	Cluster IV (total number of entities: 13)
Moscow	Sverdlovsk Oblast	Sakhalin Oblast	Tyumen Oblast
Lipetsk Oblast	Yaroslavl Oblast	Chukotka Autonomous Okrug	Komi Republic
Leningrad Oblast	Kaluga Oblast	Magadan Oblast	Krasnoyarsk Krai
Nizhny Novgorod Oblast	Kursk Oblast	Murmansk Oblast	Republic of Khakassia
Voronezh Oblast	Tula Oblast	Vladimir Oblast	Chechen Republic
Belgorod Oblast	Krasnodar Krai	Khabarovsk Krai	Republic of Buryatia
Saint Petersburg	Sevastopol	Samara Oblast	Republic of Sakha (Yakutia)
Republic of Tatarstan	Tambov Oblast	Rostov Oblast	Karachay-Cherkess Republic
Moscow Oblast	Tver Oblast	Kostroma Oblast	Jewish Autonomous Oblast
	Volgograd Oblast	Primorsky Krai	Republic of Altai
	Udmurt Republic	Chelyabinsk Oblast	Republic of Kalmykia
	Republic of Bashkortostan	Penza Oblast	Republic of Tyva
	Republic of Adygea	Orlov Oblast	Republic of Ingushatia
		Kemerovo Oblast – Kuzbass	
		Ryazan Oblast	
		Archangelsk Oblast	
		Vologda Oblast	

End of Table 2

Cluster I (total number of entities: 9)	Cluster II (total number of entities: 13)	Cluster III (total number of entities: 47)	Cluster IV (total number of entities: 13)
		Perm Krai Omsk Oblast Novosibirsk Oblast Ivanovo Oblast Bryansk Oblast Stavropol Krai Novgorod Oblast Kaliningrad Oblast Kirov Oblast Tomsk Oblast Republic of North Ossetia – Alania Orenburg Oblast Ulyanovsk Oblast Saratov Oblast Kamchatka Krai Amur Oblast Smolensk Oblast Pskov Oblast Republic of Karelia Republic of Dagestan Astrakhan Oblast Chuvash Republic Republic of Crimea Republic of Mordova Zabaikalsky Krai Irkutsk Oblast Altai Krai Republic of Mari El Kabardino-Balkar Republic Kurgan Oblast	
Source: own compilation based the constructed correlation equations on the data: https://www.fedstat.ru/indicator/59577?ysclid=lgknjza0j9446756822 (Y); https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Frosstat.gov.ru%2Fstorage%2Fmediabank%2FVRP_s_1998.xlsx&wdOrigin=BROWSELINK (X)			

Cluster I is characterized by the highest average GRP value per capita (1001957.77 rubles) and the lowest average poverty rate (6.94%); Cluster II has the lowest average GRP value per capita (522283.94 rubles) and moderately high average poverty rate (10.23%); Cluster III is distinguished by moderately average GRP per capita (676616.20 rubles) and noticeably high average poverty rate (13.44%); Cluster IV is described by noticeably high average GRP per capita (747909.70 rubles) and the highest average poverty rate (20.75%).

In addition, the significance of differences between the obtained groups was tested using the k-means method (in our case k = 4).

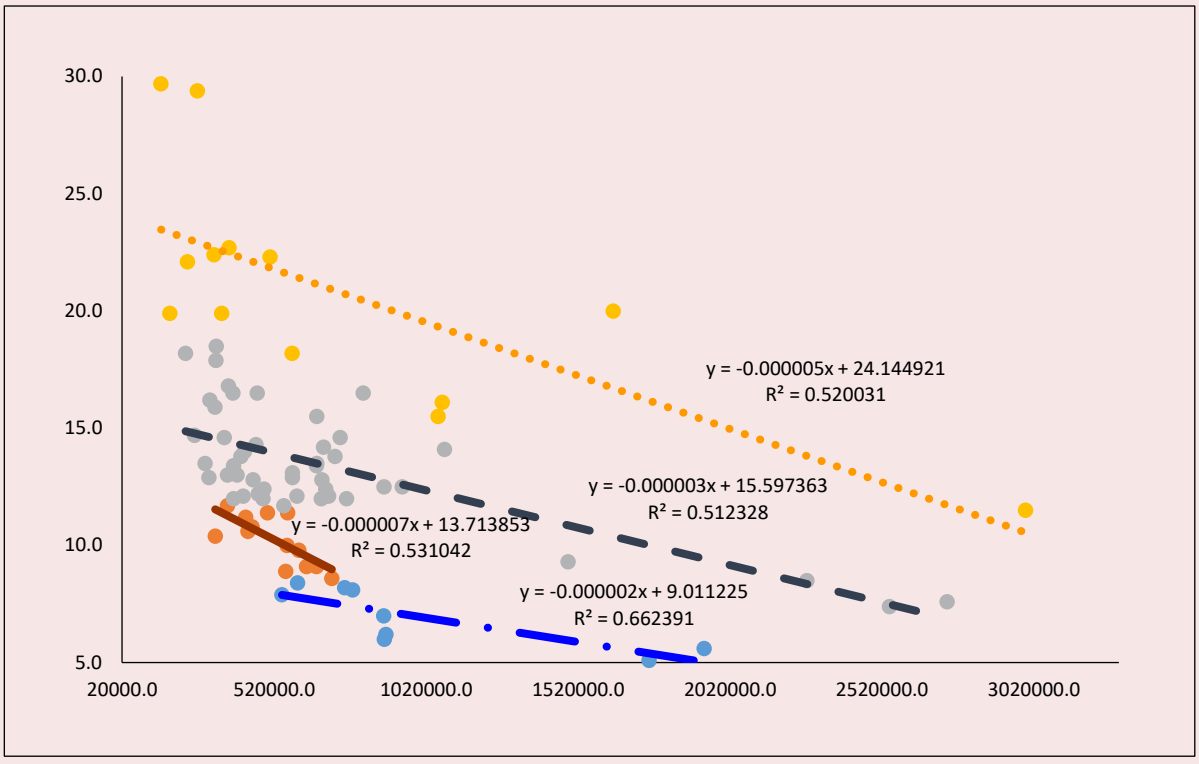
Table 3 summarizes the qualitative characteristics and criteria of linear regression models for each cluster are summarized, and *Figure 3* presents linear regression dependencies of poverty rate on per capita GRP for the four formed clusters.

The linear correlation coefficients (r1 = -0.814; r2 = -0.729; r3 = -0.716; r4 = -0.721) indicate a strong inverse relationship between poverty and per capita GRP for each of the four clusters constructed. The determination coefficients ($R_1^2 = 0{,}662$; $R_2^2 = 0{,}531$; $R_3^2 = 0{,}512$; $R_4^2 = 0{,}52$), characterizing the share of variation of the dependent variable (Y) due to the variation of the explanatory variable (X), exceed 0.5.

Table 3. Qualitative characteristics and criteria of linear regression models for each cluster formation of the RF constituent entities

Cluster	I	II	III	IV
Number of cluster N_i	9	13	47	13
Average poverty rate, % $\overline{Yi}$	6.94	10.23	13.44	20.75
Average GRP volume per capita, rubles $\overline{Xi}$	1001957.77	522283.94	676616.20	747909.70
Correlation coefficient r_i	-0.814	-0.729	-0.716	-0.721
Determination coefficient R_i^2	0.662	0.531	0.512	0.520
Linear regression	Y = 9.011225 – 0.000002 × X + ε	Y = 13.713853 – 0.000007 × X + ε	Y = 15.593363 – 0.000003 × X + ε	Y = 24.144921 – 0.000005 × X + ε
Fisher's criterion F	13.734 (F significance = 0.008)	12.456 (F significance = 0.005)	47.275 (F significance = 0.000)	11.918 (F significance = 0.005)
Average relative error of approximation, %	8.86	5.16	9.75	13.06
Source: own compilation.				

Figure 3. Linear regression dependencies of poverty rate on GRP per capita for clusters of RF constituent entities



Source: own compilation.

Table 4. Correlation analysis of the impact of GRP components (X1–X19) on the poverty rate (Y)

Cluster		I	II	III	IV
Poverty rate, %	Y	1.00	1.00	1.00	1.00
GRP per capita	X	-0.81	-0.73	-0.72	-0.72
Agriculture	X_1	0.52	0.21	0.25	0.47
Mining	X_2	-0.14	0.15	-0.36	-0.63
Processing	X_3	0.68	-0.42	0	-0.48
Electric power supply	X_4	0.39	-0.03	-0.17	-0.14
Water supply	X_5	0.5	-0.43	0.21	-0.15
Construction	X_6	0.51	0.03	0.04	0.31
Trade	X_7	-0.6	-0.01	0.25	0.3
Transport and storage	X_8	0.08	-0.16	0.08	-0.01
Hotels and catering	X_9	-0.45	0.05	0.25	0.03
IT and communications	X_{10}	-0.48	0.08	0.45	0.81
Finances	X_{11}	-0.58	-0.33	0.28	-0.34
Real estate	X_{12}	-0.61	0.26	0.37	0.76
Science	X_{13}	-0.4	-0.26	0.04	-0.44
Administrative activities	X_{14}	-0.62	-0.04	0.05	-0.12
Public administration	X_{15}	0.01	0.22	0.21	0.86
Education	X_{16}	0.32	0.55	0.49	0.83
Health care	X_{17}	0.11	0.42	0.44	0.87
Culture	X_{18}	-0.26	0.02	0.07	0.88
Other cervices	X_{19}	-0.46	-0.05	0.29	0.39
Source: own compilation.					

It means that the poverty rate in each regression model (Y) built for the region is explained by more than 50% by the change in GRP per capita (X) and the remaining share by the change in the factors we did not take into account. The value of R^2 more than 50% allows considering the constructed regression models acceptable for further research.

The coefficients of the linear regression equations ($Y = 9.011225 - 0.000002 \times X + \varepsilon$; $Y = 13.713853 - 0.000007 \times X + \varepsilon$; $Y = 15.593363 - 0.000003 \times X + \varepsilon$; $Y = 24.144921 - 0.000005 \times X + \varepsilon$) are statistically important at the significance level of $\varepsilon = 0.01$, the regressions themselves are reliable by Fisher criterion at the significance level of $\varepsilon = 0.01$ and therefore, applicable for research and forecast.

In addition, we conducted a correlation analysis of the dependence of the poverty rate on the GRP components (types of economic activity) for each of the four clusters; in other words, on the differences in economic status in terms of the economic importance of sectoral groups and their competitiveness (*Tab. 4*).

Analysis of the data in Table 4, which implies taking into account the closeness (strength) of the correlation between the poverty rate and GRP components, taking into account the well-known Chaddock table in the context of the constructed clusters (see Tab. 2), allows us not only to conclude that there is a noticeable or strong inverse relationship between the poverty rate and GRP components (types of economic activities) characteristic of the rent (export-raw material) model of economic growth (mining, agriculture, finance and banking, real estate, trade, administrative activities, etc.), but also to draw a realistic conclusion about the lack of proper distributional coherence of the Russian economy. In other words, despite the extreme simplicity, the model makes it possible to draw a realistic

conclusion about the lack of proper distributional coherence of the Russian economy.

Priority government policy measures to improve the Russian welfare system and reduce large-scale poverty in the RF, taking into account its economy's capacity

Undoubtedly, a radical change in the current situation in Russia with multidimensional poverty, determined by high social inequality, although it depends on many objective and subjective factors, but ultimately determined by the potential for sustainable (in the criteria of the global Agenda 2030) economic growth. The joint use of the effects of the latter and income redistribution can provide a fundamental solution to the problem of extreme poverty and increase the well-being of low-income groups of the Russian population.

In this context, without waiting for the completion of the special military operation, in our opinion, it is necessary to fundamentally improve the current welfare system in Russia, including radical measures to reduce the multidimensional poverty and based on the current capabilities of its economy.

Taking into account the paradoxes of the Russian welfare system ("rich country – poor population"; "poor – actively working citizens") and the confirmed poverty features in the Russian Federation (underestimated official poverty line, which determines the chronic nature of extreme poverty; high regional income inequality, determining large-scale new poverty), based on the analysis and generalization of the best world practices, the works of leading domestic and foreign scientists in the subject area of scientific knowledge under consideration, as well as the available developments on the phenomenon of inequality and poverty (Kormishkina et al., 2021), we propose the following:

1) it is necessary to develop a new model of national poverty monitoring, the methodological basis of which should be a national harmonized poverty line, obtained by combining various alternative poverty lines with relevant indicators and indicators, which is of fundamental importance for an objective assessment of the rate and profile of poverty in the country in order to form effective social support for poor and low-income households at different stages of their life cycle;

2) taking into account the prevalence of working-age population in the profile of Russian poverty and the associated paradox of "actively working but poor", in order to eradicate this negative phenomenon, it is extremely important to bring the price of labor of employees in the Russian Federation in line with its standards in developed countries; it is of fundamental importance to accelerate the neo-industrial modernization of the Russian economy, creating the necessary conditions to overcome the previously mentioned "trap of low incomes and technology" and increase productivity;

3) a radical revision of the redistributive policy of the state is needed by increasing the incomes of the poor in order to address the growing "rich – poor" gap, for example, abolishing personal income tax for citizens living below the poverty line, accompanied by a gradual increase in the tax burden on super-income (up to 30–35% of monthly income); in addition, the construction of expensive housing, expensive hotels and retail chains unavailable to the middle class should be subject to increased taxation;

4) a transition from the current (predominantly passive) social protection system to its new development-oriented model (measures within the framework of the "new family policy"; expansion of the practice of contracting for the adaptation of able-bodied unemployed members of households, etc.) is required, which will increase the role of targeted programs in reducing the depth of poverty and social inequality in the country.

Conclusion

Summarizing the above, we note that the results of the conducted research on the poverty phenomenon contribute to a certain increment of scientific knowledge in the following:

1) putting forward and theoretically substantiating the idea of the paradox of the welfare system that has developed in Russia, which consists in a significant excess of the real poverty rate compared to its threshold value against the background of high indicators of the total national wealth and economic potential of the country ("rich country of low-income people") and requires rapid improvement of public relations, including the development of a set of radical measures to reduce extreme poverty, relying on the existing capabilities of the national economy;

2) theoretical justification (from the standpoint of the concepts of the "welfare state" and "development economy") of the illegality of Russia's rejection of the normative approach to determining the basic poverty line in 2021 (allows taking into account, along with monetary income, consumer spending in the real dynamics of the price ratio) in favor of only relative (44.2 Me), which destroys the mechanism transparent measurement of the subsistence minimum, underestimates the real poverty rate, gives it a chronic character and, ultimately, limits the possible growth rates of the economy;

3) construction of regression dependencies suitable for research and forecasting between the poverty rate and per capita GRP (taking into account its sectoral structure) for Russia's constitute entities, which not only confirm the presence of a noticeable and strong feedback between the poverty rate and GRP components (types of economic activity), characteristic of the rent-based (raw materials-exporting) model of economic growth established in Russia, but also reveal a noticeable interregional differentiation of per capita income within industries (types of economic activity), this indicates the lack of proper distributional connectivity of the Russian economy; clusters formed on the basis of such regression dependencies confirm the persistence of high regional income inequality as one of the key features of Russian poverty, which make multidimensional poverty in the Russian Federation chronic in its nature;

4) we propose the minimum necessary economic tools of the state policy in the field of assistance in reducing poverty in its extreme forms.

And it is worth noting the last thing. We are fully aware that the range of issues raised in this article is so complex and large-scale that it leaves little chance of developing final answers to them. It is necessary to take into account the incompleteness of the discussion on certain theoretical and methodological aspects of the phenomenon of poverty, for example, on a new model of its monitoring, on the universality and alternativeness of poverty lines, etc. In this regard, it is important to study in more depth the methodology of combining multiple alternative poverty lines, which is of fundamental importance in helping to reduce poverty in Russia.

References

Aganbegyan A.G. (2017). Overcoming poverty and reducing the income and consumption inequality in Russia. *EKO (Vserossiiskii ekonomicheskii zhurnal)=The All-Russian ECO Journal*, 47(9), 66–84. DOI: 10.30680/ECO0131-7652-2017-9-66-84 (in Russian).

Banerjee A.V., Duflo E. (2012). *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty.* New York: Public Affairs.

Banerjee A.V., Duflo E. (2019). *Good Economics for Hard Times: Better Answers to Our Biggest Problems.* New York: Public Affairs.

Bobkov V.N., Gulyugina A.A., Odintsova E.V. (2022). Social consequences of thirty years of capital reforms in Russia. *Rossiiskii ekonomicheskii zhurnal=Russian Economic Journal*, 1, 78–107. DOI: 10.33983/0130-9757-2022-1-78-107 (in Russian).

Bobkov V.N., Gulyugina A.A., Odintsova E.V., Safronova A.M. (2021). The socially acceptable consumption basket. *Uroven' zhizni naseleniya regionov Rossii=Living Standards of the Population in the Regions of Russia*, 15(2), 8–26. DOI: 10.19181/1999-9836-2019-10060 (in Russian).

Bobkov V.N., Odintsova E.V. (2020). Low level and quality of life among economically active population: Identification criteria and assessment of occurrence. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecas*t, 13(5), 168–181. DOI: 10.15838/esc.2020.5.71.10 (in Russian).

Bobkov V.N., Odintsova E.V., Bobkov N.V. (2020). Relevance of developing a national program to increase income, reduce poverty and inequality. *Uroven' zhizni naseleniya regionov Rossii=Living Standards of the Population in the Regions of Russia*, 16(2), 9–24. DOI: 10.19181/lsprr/2020.16.2.1 (in Russian).

Bobylev S.N., Solov'eva S.V. (2017). Sustainable development goals for Russia's future. *Problemy prognozirovaniya=Studies on Russian Economic Development*, 3, 26–34. Available at: https://ecfor.ru/publication/03-tseli-ustojchivogo-razvitiya/ (accessed: May 20, 2023; in Russian).

From the editorial board: Institutionalism of poverty and institutionalist poverty (2015). *Ekonomist*, 9, 30–38 (in Russian).

Guriev S., Treisman D. (2019). Informational autocrats. *Journal of Economic Perspectives*, 33(4), 100–127. Available at: https://econ.ntu.edu.tw/uploads/asset/data/60b469f548b8a1027b023ecc/HKBU_1100602.pdf

Ilyin V.A. (2017). "Crony capitalism" – a source of social inequality in modern Russia. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 10(6), 9–23. DOI: 10.15838/esc.2017.6.54.1 (in Russian).

Kormishkina L.A., Ermakova E.R. (2021). On the assessment of the national poverty. *Natsional'naya bezopasnost' / nota bene=National Security / nota bene*, 3, 1–15. DOI: 10.7256/2454-0668.2021.3.35821 (in Russian).

Kormishkina L.A., Kormishkin E.D., Ermakova E.R., Koloskov D.A. (2021). An approach to assessing the national multidimensional poverty line in Russia. *Journal of Eastern European and Central Asian Research*, 8(3), 324–336. DOI: 10.15549/jeecar.v8i3.778

Kuznets S. (1955). Economic growth and income inequality. *The American Economic Review*, 45(1), 1–28. Available at: https://www.jstor.org/stable/1811581

Litvinov V.A. (2021). *Prozhitochnyi minimum: istoriya, metodika, analiz* [Living Wage: History, Methodology, Analysis]. Moscow: Lenand.

Lobue M.C., Polmisano F. (2021) The individual poverty. Incidence of growth. *Bulletin of Economics and Statistics*, 82(3), 1295–1321.

Orshansky M. (1965). Counting the poor: Another look at the poverty profile. *Byulleten' sotsial'nogo obespecheniya=Soc. Secur. Bull.*, 28(3), 3–29 (in Russian).

Ovcharova L.N. (2009). *Teoreticheskie i prakticheskie podkhody k otsenke urovnya, profilya i faktorov bednosti: rossiiskii i mezhdunarodnyi opyt* [Theoretical and Practical Approaches to Assessing the Level, Profile and Factors of Poverty: Russian and International Experience]. Mocow: M-Studio.

Ovcharova L.N. (2017). Promoting the income-tested social support in Russia: Barriers and facilitators. *Voprosy ekonomiki*, 3, 5–21. DOI: 10.32609/0042-8736-2017-3-5-21 (in Russian).

Ovcharova L.N., Sinyavskaya O.V., Biryukova S.S. et al. (2022). Social protection in Russia: Choices of the future. *Voprosy ekonomiki*, 6, 5–31. DOI: 10.32609/0042-8736-2022-8-5-31 (in Russian).

Piketty T. (2014). *Capital in the Twenty-First Century.* Cambridge, Massachusetts: Belknap Press of Harvard University Press. DOI:10.1017/S0047279415000616

Piketty T. (2020). *Capital and Ideology.* Cambridge, Massachusetts: Harvard University Press.

Sachs J. (2011). *Konets bednosti. Ekonomicheskie vozmozhnosti nashego vremeni* [The End of Poverty: Economic Possibilities for Our Time]. Moscow: Izd-vo instituta Gaidara

Sen A. (1987). *The Standard of Living.* Cambridge: Cambridge University Press. DOI:10.1017/S0266267100001334

Senchagov V.K., Maksimov Yu.M., Mityakov S.N. et al. (2013). *Innovatsionnye preobrazovaniya kak imperativ ustoichivogo razvitiya i ekonomicheskoi bezopasnosti Rossii* [Innovative Transformation as an Imperative for Sustainable Development and Economic Security of Russia]. Moscow: Ankil.

Shevyakov A.Yu., Kiruta A.Ya. (2009). *Neravenstvo, ekonomicheskii rost i demografiya: neissledovannye vzaimosvyazi* [Inequality, Economic Growth and Demography: Unexplored Linkages]. Moscow: M-Studio.

Stiglitz J.E. (2015). *Tsena neravenstva. Chem rassmotrenie obshchestva grozit nashemu budushchemu* [The Price of Inequality: How Today's Divided Society Endangers Our Future]. Moscow: Eksmo.

Stiglitz J.E. (2016). *Velikoe razdelenie. Neravenstvo v obshchestve, ili Chto delat' ostavshimsya 99 % naseleniya?* [The Great Divide: Unequal Societies and What We Can Do about Them]. Moscow: Eksmo.

Townsend P. (1979). *Poverty in the United Kingdom: A Survey of Household Resources and Standards of Living.* Berkeley: University of California Press.

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Socio-Economic Vulnerability of Regional Communities: Sociological Interpretation and Assessment

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Abstract. The relevance of the study of the socio-economic vulnerability of Russian regions is due to the need to reveal their internal characteristics, indicating unresolved and emerging social problems that weaken the possibilities of regions functioning and productive dynamics. The aim of the work is to clarify the concept of socio-economic vulnerability of the regional community; to define the possibilities of its sociological measurement based on a combination of objective and subjective data; to identify significant characteristics of vulnerability of region socio-economic sphere in contemporary conditions by the example of the regions of the Central Chernozem region. The originality of its formulation and solution is associated with the interpretation of the this phenomenon through the prism of key social problems manifested in objective characteristics and subjective assessments of the population, the promotion of a methodic approach to its sociological diagnosis based on rethinking the heuristic capabilities of the methodic tools of the interregional scientific program, the assessment of important parameters of socio-economic vulnerability of the Central Chernozem regions. The empirical object of research is the Central Chernozem regions of Russia – the Voronezh, Kursk and Lipetsk oblasts. The informational basis of research is the data of state statistics (Rosstat); the empirical base is the results of representative survey (N=1200 people) based on the typical program and methodic tools "Socio-cultural portrait of the Russian region". The paper clarifies the concept of socio-economic vulnerability of regional community, understood as its condition due to the internal characteristics of the socio-economic sphere, concentrating social problems of an objective-subjective nature. It defines the possibilities of its diagnosis based on a

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combination of measuring objective facts and subjective assessments on a number of indicators of the typical methodic. It reveals the key vulnerabilities of the socio-economic sphere of the central chernozem regions in contemporary conditions: the prevalence of poverty and a high degree of socio-economic differentiation of the population in a subjective measurement; the downward short-term dynamics of the material status of a population significant part. The results expand the scientific understanding of the socio-economic vulnerability of regional communities and can be used to define their social problems of objective and subjective nature and to find ways to solve them.

Key words: socio-economic vulnerability, material status, poverty, socio-economic polarization, regional community, Russian society.

Introduction

In modern conditions, Russian society continues facing new challenges to its socio-economic development, the search for an adequate response to which is largely associated with the identification and analysis of its vulnerabilities as "pain points", indicating unresolved and newly emerging social problems and weakening the ability to withstand threats and risks. In the situation of persisting significant regional differentiation of the Russian society (Belyaeva, 2021; Shabunova et al., 2022; Socio-cultural evolution of Russia..., 2022), the problem of socio-economic vulnerability of the population of separate Russian macroregions and regions is particularly relevant.

In the field of social sciences, the emergence of researchers' interest in studying the vulnerability of social communities and its socio-economic component is largely associated with the emergence of the sustainable development theory. In the process of the latter's development, the categories of sustainability and resilience acquire key importance and are contrasted with vulnerability. According to the American scientist B.L. Turner, the sustainable development theory contributed to the concentration of attention of modern researchers on the study of the system "human-environment" and further development of this theory was associated with the study of this system through the prism of opposing resistance and vulnerability as its two opposite potential states (Turner, 2010).

We should note that so far the scientific community has not developed an unambiguous understanding of the relationship between sustainability and resilience, which is interpreted in different ways: as a concept identical to sustainability (Zeng et al., 2022), as a special characteristic of sustainability – dynamic sustainability of social systems (Smorodinskaya, Katukov, 2021), and as an independent phenomenon – shock resilience (Zhikharevich et al., 2020). Leaving the analysis of this relationship outside the scope of the paper and focusing on the review of recent studies of socio-economic aspects of vulnerability, let us emphasize that, despite the ambiguity of interpretations of stability and resilience, modern socio-economic studies quite clearly state their opposite to vulnerability.

Recently, the contrast between stability and resilience, on the one hand, and vulnerability, on the other hand, as two opposite states or characteristics of the objects under consideration has been applied in the study of various social systems, the functioning and dynamics of which in the modern world are carried out in the context of increasing various risks. Among the latest developments in this subject field are the studies by foreign and Russian authors on corporate sustainability – business vulnerability during the COVID-19 pandemic (Ikram et al., 2020); resilience – vulnerability of regions under

the impact of economic shocks (Bruneckiene et al., 2019); sustainability – vulnerability of rural development in the context of global instability (Vyalshina, 2022) and other aspects.

At the same time, there is an increasing interest in the study of these issues in relation to the socio-territorial dimension of society. Modern foreign and Russian authors pay attention to the identification of problems and resources of sustainable development of macro-regions and regions, provinces and other administrative-territorial formations and socio-territorial communities of macro- and meso-level within the framework of national societies (Vasiliev et al., 2019; Rozhkovskaya, Garkavaya, 2022; Ren et al., 2018). A separate direction in this subject field is studying the development of urban areas: cities, urban areas and agglomerations – through the prism of their sustainability or resilience, on the one hand, and vulnerability, on the other (Spiliotopoulou, Roseland, 2020; Zeng et al., 2022). At the same time, this issue is much less often developed in relation to rural areas (Vyalshina, 2022; Marsden, 2009).

The analysis of recent socio-economic developments on this topic shows that researchers often use this opposition as a starting point in the search for the components of sustainability or resilience of the studied objects and their sustainable development in modern conditions, paying much more attention to this than to the analysis of their vulnerability. As a result, there is a predominance of indices for assessing the sustainability and sustainable development of territories and their resilience, and a lack of tools for assessing their vulnerability. For instance, the works under the auspices of the European Commission and the UN propose more than 20 indices for such assessment, among which the most mentioned are the "resilience index", "economic resilience index", "socio-economic resilience index", "pervasive vulnerability index", "resilience cost index" (Bruneckiene et al., 2019).

Researchers strive to make the assessment of sustainability and resilience of territories more capacious, comprehensive and use a set of indicators reflecting different spheres of socio-territorial systems. Hungarian scientists A. Buzási, B.S. Jäger, O. Hortay suggest measuring socio-economic indicators along with environmental indicators to diagnose urban resilience (Buzási et al., 2022). Russian researchers A.A. Shabunova and M.A. Gruzdeva consider it necessary to use four groups of indicators to measure the sustainability of Russian regions: economic, social, environmental and socio-cultural (Shabunova, Gruzdeva, 2016). American authors P. Van Beynen, F.A. Akiwumi and K. Van Beynen to assess the sustainability of the state and development of small island developing states apply about 70 indicators grouped by four parameters of sustainable development of the territory: social, economic, environmental and climatic (Van Beynen et al., 2018). In this way, new developments tend to include social and sociocultural indicators in the assessment of territorial sustainability.

Current studies pay much less attention to the development of the problems of vulnerability of territories and socio-territorial communities. In rare works, attempts are made to reveal the structure of vulnerability of the territory and the population living in it, separately identifying its socio-economic component. For example, the American authors R.A. Johns, B. Dixon and R. Pontes suggest distinguishing between physical (territorial) and socio-economic vulnerability of the state population under climate change (Johns et al., 2020). At the same time, socio-economic vulnerability of territories and territorial communities is mainly considered in the context of studying the adverse impact of natural disasters: floods (Tanir et al.,

2021), drought (Sun et al., 2022; Ravichandran et al., 2022), cyclonic storms (Mandal, Dey, 2022), climate change (Johns et al., 2020) or environmental degradation leading to environmental stresses (Dutta, Chatterjee, 2022).

The analysis of the current scientific literature revealed the lack of an unambiguous understanding of the essence and content of vulnerability and socio-economic vulnerability in the scientific community (Johns et al., 2020; Mandal, Dey, 2022; Tanir et al., 2021; Sun et al., 2022, etc.). In addition, a number of works continue using a contraposition-based interpretation of vulnerability as a state associated with insufficient or lack of stability or resilience. This interpretation turns out to be inadequate to the current stage of social development, which allows detecting the simultaneous coexistence of both stable and vulnerable characteristics in the state of social systems.

At the same time, so far there is no unambiguous interpretation of the concept of socio-economic vulnerability in relation to regional communities, no system of indicators and targets for its sociological measurement has been proposed. There are no empirical studies on this issue, the results of which allow assessing the state of socio-economic vulnerability of Russian regions as socio-territorial communities in modern conditions, and the possibilities for such diagnostics on the available Russian materials have not been determined.

The need to fill these gaps in socio-economic knowledge determines the relevance of this paper and the scientific and practical significance of its results.

The article aims to clarify the concept of socio-economic vulnerability of the regional community; to determine the possibilities of its sociological measurement based on a combination of objective and subjective data; to identify the significant characteristics of the vulnerability of their socio-economic sphere in modern conditions in the case of the regions of the Central Black Earth Region. The originality of setting the goal and its achievement is associated with the treatment of socio-economic vulnerability of regional communities through the prism of key social problems manifested in objective characteristics and subjective assessments of the population, with the proposal of a methodological approach to its diagnosis in sociological research on the basis of rethinking the heuristic possibilities of the standard program and methodology "Socio-cultural portrait of the region of Russia", with the assessment of important parameters of socio-economic vulnerability of the Central Black Earth regions.

Conceptual framework of the research

Defining the conceptual framework of the study, first of all, we note the need to distinguish approaches to the definition of the essence and content of socio-economic vulnerability in relation to territories and socio-territorial communities. The analysis of modern foreign and Russian studies on the subject proves that it is often different territories (regions, districts, municipalities, cities, towns, settlements, villages) that are analyzed through the prism of their vulnerability to certain dangerous phenomena including socio-economic vulnerability. In such works, socio-economic vulnerability is defined through both the parameters of the territory and the characteristics of its population. For example, American authors (S.L. Cutter, L. Barnes, M. Berry, etc.) consider such characteristics of the territory as inequality in economic development, growth rates; availability of resources for the population; characteristics of the built environment and its maintenance; and among the characteristics of the population – income, educational level, ethnicity, employment, housing, health care as the most significant for the vulnerability of states to natural disasters (Cutter et al., 2008). When studying regions and

municipalities of the Russian Arctic, Russian authors consider socio-economic vulnerability of a municipal territory as a combination of its susceptibility to change (understood through social insecurity and dangerous housing conditions), insufficient coping capacities (depending on the health care system and social ties) and adaptive capacities (expressed in the educational level of the population, material resources of households, investments, economic features of the population), as well as a combination of the social and economic vulnerability of a municipal territory (Baburin et al., 2016). In most such studies, empirical assessment of socio-economic vulnerability of different territories is carried out with the help of a set of relevant indicators reflected in the official statistics of countries and their regions.

At the same time, the conceptualization of the problems of socio-economic vulnerability in relation to regional communities makes it advisable to interpret the phenomenon under consideration on the basis of population characteristics. In this regard, the approaches to the identification of indicators and measures developed by previous authors to measure socio-economic vulnerability of the population of a certain territory as a socio-territorial community are of research interest *(Tab. 1)*.

It is worth noting that in modern interpretations socio-economic vulnerability of the population or territorial community is often understood as a multidimensional complex phenomenon and is characterized through various indicators of the economic and social situation of the population:

Table 1. Approaches to the definition of indicators and measures of socio-economic vulnerability of territorial community / population of a territory

Authors	Indicators and measures
M.P. Kelly, N.W. Adger (Kelly, Adger, 2000)	1. Poverty associated with marginalization 2. Inequalities that condition the degree of collective responsibility, informal and formal insurance and their underlying social security function 3. Institutional adaptation related to the architecture of social rights, institutions as channels of collective perception of vulnerability, endogenous institutions that limit or enable adaptation
C.T. Emrich (Emrich, 2005)	1. Poverty 2. Rental housing 3. Lack of flood insurance 4. Financial failure to prepare for floods
L. Rygel, D. O'Sullivan, B. Yarnal (Rygel et al., 2006)	1. Poverty as a key characteristic interrelated with its other components 2. Gender (female) 3. Race and ethnicity 4. Age (children and elderly people) 5. Disability
K. Arthurson, S. Baum (Arthurson, Baum, 2015)	Shortage of material and financial resources: – inadequate family support, – social isolation, – poor health and disability, – not having a home or living in unsafe or inadequate housing, – low education level, – inability to find work
R.A. Johns, B. Dixon, R. Pontes (Johns et al., 2020)	1. Low per capita income 2. Share of people living below the poverty line 3. Unemployment status 4. Ethnicity (African American, Native American, Asian, and Hispanic) 5. Belonging to the age groups of less than 5 years, 5 to 14 years and over 65 years old 6. Low education level

End of Table 1

Authors	Indicators and measures
P. Kandari, U. Bahuguna, A.K. Salgotra (Kandari et al., 2021)	Low financial accessibility: – lack of bank accounts, – non-use of mobile banking, – credit line undrawn
T. Tanir, S.J. Sumi, A.D.S. Lima, A.G. de Coelho, S. Uzun, F. Cassalho, C.M. Ferreira (Tanir et al., 2021)	A set of social vulnerability indicators (SoVI)* and exposure to danger from 41 variables, of which 23 variables (more than half) reflect the material situation of the population related to the level of income, consumption and differentiation by income level: Low per capita income Share of unemployed Share of population living below the poverty line Share of households below the poverty line Share of households below the poverty line Proportion of dwellings without a vehicle Share of population earning less than 35 thousand dollars in the last 12 months Share of population earning less than 40 thousand dollars in the last 12 months Share of population without earnings Low average household income Low total income Share of population without health insurance Share of population receiving food stamp assistance Vacancy rate of housing Share of mobile (mobile) housing Share of rented housing Low median housing cost Low average cost of housing Median gross rent Average cash rent Percentage ratio of population's income to poverty level less than 1.0 Gini index Share of population without social insurance income
M.U. Niaz (Niaz, 2022)	The opposite of socio-economic growth: 1. Lack of sustainable livelihoods (increase in per capita income levels; improved housing ownership status, house roofing material, general condition of the house; increased number of children attending school; increased household assets; increased cooking fuel consumption; improved quality of drinking water; increased expenditure on health care and clothing) 2. Lack of improvement of living standards (negative self-assessments of changes in living standards) 3. Preserving multidimensional poverty: – living standards (no electricity in the house, no safe drinking water, poor sanitation, no floor material and cooking fuel used, no TV, telephone, refrigerator or the like, including a car or tractor); – health (child mortality, malnutrition); – education (lack of basic education (6 years of schooling), non-attendance of school-age children) 4. Lack of social development (no self-efficacy to increase perceived social status)

* The concept and the Social Vulnerability Index (SoVI) were developed by The Hazards Vulnerability & Resilience Institute (USA) team to assess the vulnerability of areas to environmental hazards based on 29 socioeconomic variables (32 variables before 2010), grouped in 2019 into 7 significant components: low wealth; race (African Americans) and social status; age dependence (elderly); Hispanic ethnicity; special needs (lack of health insurance); race (Indian population); service employment (Derakhshan et al. , 2022; Blackwood, Cutter, 2023).

Source: own compilation based on the analysis of scientific literature.

low income and poverty, lack of insurance and social benefits, limited material resources of households, shortage of property, poor quality of housing and its rent and similar indicators, as well as certain socio-demographic indicators. Only in single works there is a reduction of socio-economic vulnerability to a certain social phenomenon – lack of access to financial services, interrelated with low financial literacy of people (Kandari et al., 2021).

Most approaches consider low income and associated poverty of people as significant indicators of socio-economic vulnerability, justifying the need to assess their prevalence in the community. In a number of cases, they are supplemented by indicators of unemployment, lack of earnings or social payments, which is important in the context of formation of population's income and, accordingly, its socio-economic status. Some authors note the significant contribution of socio-economic stratification of the community to its socio-economic vulnerability and consider population inequality as one of the significant indicators of such vulnerability, suggest using both the perception and assessment of their social status (Kelly, Adger, 2000; Niaz, 2022) and the Gini index (Tanir et al., 2021) for its diagnosis.

Based on previous experience, we can assume that the content of socio-economic vulnerability of the territorial community is mainly associated with the characteristics of material status (income and consumption levels) and socio-economic differentiation of the population (poverty and inequality), but is not exhausted by them and can be supplemented by other components. At the same time, its measurement and assessment can be carried out both on the basis of several interrelated variables and through an expanded set of them, as well as using statistical data and the results of surveys (subjective assessments). Each study requires the selection and justification of adequate to the studied community interpretation of socio-economic vulnerability and its indicators, since direct borrowing of previous approaches is not always acceptable due to the socio-cultural specifics of the territory and its population, in particular, to the conditions of Russian society and socio-territorial organization.

In this context, we should pay attention to the importance of the problems of poverty and socio-economic differentiation in Russian society and its regions emphasized in recent works. In modern socio-economic studies, the persistence of poverty and increasing income differentiation of the population are interpreted as key threats to Russia's national or economic security and its stable socio-economic development (Starovoitov, Starovoitov, 2020; Lev, 2021; Ilyin, Morev, 2022). Some of them consider poverty and low income, associated with the deficit or limited material resources, not only as characteristics of social stratification of Russian society and regional communities, but also as indicators of social and socio-economic vulnerability of the population (Alekseenok, Mikhalev, 2020; Gorshkov, 2020; Soboleva, Sobolev, 2021).

In view of the above, we consider it important to clarify the concept of socio-economic vulnerability in relation to regional communities in the framework of our research. In this paper, we propose to understand socio-economic vulnerability as a state of a regional community due to the internal characteristics of its socio-economic sphere, which concentrates social problems that manifest themselves in objective status indicators and their subjective interpretation by people. These problems determine the weaknesses of functioning and dynamics of the socio-territorial community.

At the same time, in sociological discourse, a significant clarification is the belonging of socio-economic vulnerability not to the region as an administrative-territorial unit, but to the regional

community as a socio-territorial community that unites the population living on its territory and is characterized in the socio-economic sphere by the presence of various social structures. The latter are conditioned by material differentiation and social inequality within the community, formed by different criteria, as well as the identification of the population with certain property and social strata.

Recognizing the multidimensionality of socio-economic vulnerability of the regional community, on the basis of rethinking the previous experience of interpreting its content and indicators (see Tab. 1) and the significance of the problems of poverty and inequality of the population for the Russian regions, we consider it possible to identify its three key components, which manifest weak, problematic characteristics of the socio-economic sphere of the region:

1) poverty incidence within a socio-territorial community;

2) high degree of socio-economic differentiation of regional population;

3) downward dynamics of the financial situation of a significant part of the population compared to the previous year.

In modern studies, the assessment of socio-economic vulnerability of territorial communities is carried out on the basis of statistical data on indicators for which systematic statistical accounting is carried out and the processing of which allows the use of the index method of assessment (Bruneckiene et al., 2019; Tanir et al., 2021; Kireyeva et al., 2022). It determines the measurement of only one facet of socio-economic vulnerability, represented by the objective status characteristics of population groups within socio-territorial communities. At the same time, the second facet of the phenomenon under consideration, manifested in subjective assessments by the population of their status position in the socio-economic sphere and structures constructed on the basis of people's socio-economic self-identification (Pasovets, 2019), often remains outside the attention of researchers and, accordingly, beyond the scope of such an assessment.

Only in isolated studies of socio-economic vulnerability of regional and local communities, subjective assessments of this phenomenon are measured through sociological surveys. In such developments within the framework of combined research methodology survey methods are used in combination with other methods of data collection: observation and analysis of statistical data. As shown by the experience of assessing the vulnerability of neighborhoods within an Indian state, carried out by K. Mandal and P. Dey, the use of questionnaires allows realizing the ranking by respondents of a set of parameters of their socio-economic vulnerability, which complements the index assessment of the studied phenomenon made on the basis of statistical data (Mandal, Dey, 2022). Another study by Indian authors (Balasubramani et al., 2021) proves the necessity of combining the data of official statistics (population and household census) with the results of public opinion polls to finally obtain a more reasonable assessment of socio-economic vulnerability of the population at the micro level of territorial organization (villages, hamlets and districts within the state). In this case, the population survey data allow identifying people's perception of their socio-economic conditions as vulnerable to the impact of natural disasters and build a subjective matrix of the probability of such risk (Balasubramani et al., 2021, p. 606–607).

With this in mind, the methodological approach based on the combination of statistical and survey data on relatively comparable indicators is promising for characterizing the socio-economic vulnerability of regional communities. Within each of the three components of this phenomenon that we have identified, it is advisable to record indicators of different nature: objective indicators derived

from state statistics data and subjective indicators measured through the results of sociological surveys. In this case, it becomes possible to combine data in objective and subjective dimensions for each of the socio-economic vulnerability parameters.

Research methodology and materials

The theoretical basis of the work is formed by the conceptual ideas put forward by N.I. Lapin and developed by his followers in the studies of socio-cultural evolution of Russian regions about the region as a socio-territorial and socio-cultural community, as well as about the representation of the regional community by three spheres: anthropo-cultural, socio-economic, institutional and regulatory[1]. When conceptualizing the notion of socio-economic vulnerability of the community, there is an appeal to the idea of the region's socio-economic sphere, its characteristics related to the material situation and socio-economic differentiation of the population, manifesting the weaknesses of the regional community. When determining specific indicators to assess the socio-economic vulnerability of socio-territorial communities, we used the diagnostic capabilities and indicators of the standard program and methodology "Socio-Cultural Portrait of the Russian Region"[2].

As separate indicators of socio-economic vulnerability of regional communities, this paper proposes to use:

– state statistical indicators:

1) share of population with incomes below the subsistence minimum level (SML), in %;

2) Gini coefficient;

3) real money income, in % to the previous year;

– population survey indicators:

4) share of the subjectively "poor", in %;

5) coefficient of socio-economic polarization of the community;

6) share of those who have become worse off compared to the previous year, in %.

If the indicators of state statistics are unified for the Russian statistical system and their interpretation is given in the methodological recommendations in the relevant statistical publications, then the use of the indicated indicators of the population survey from the standard methodology "Socio-Cultural Portrait of the Russian Region" requires clarification.

In the subjective dimension, the understanding of poverty and socio-economic polarization of the community is built on the basis of the idea of socio-economic identification of the population (Pasovets, 2019), measured in the survey through self-identification of the respondent with a certain socio-economic stratum by the level of their consumption. For this purpose, we use the stratification scale proposed by L.A. Belyaeva to assess the material status of an individual by the level of consumption ("beggars", "poor", "unsecured", "secured", "affluent", "rich") and included as one of the indicators in the standard methodology "Socio-Cultural Portrait of the Russian Region"[3].

The share of the subjectively "poor" is measured as a percentage of the total number of respondents and summarizes the shares of the two lowest socio-economic strata – the "beggars" and the "poor". Subjective poverty can be compared with objective poverty, the boundary of which is fixed by official statistics in Russia based on the share of the population with monetary incomes below the Gross Domestic Product (GDP).

We proposed and tested the calculation method adopted for the coefficient of socio-economic polarization of the community in previous works in

[1] Lapin N.I., Belyaeva L.A. (2010). *Program and Standard Tools "Socio-Cultural Portrait of the Russian Region" (Modification – 2010)*. Moscow: INFRA.

[2] Ibidem. Pp. 17–19.

[3] Ibidem. P. 31.

the case of the coefficient of general polarization of public opinion (Pasovets, 2011). In this paper, it is used to identify the nature of the ratio between the total share of the lower strata ("beggars", "poor", "unsecured") and the total share of the middle and higher strata ("secured", "affluent", "rich"), interpreted as an indicator opposite to the coefficient of socio-economic homogeneity of the community.

The coefficient of socio-economic homogeneity of the community is calculated as the modulus of the difference between the shares of lower strata, on the one hand, and middle and higher strata, on the other hand, to the total number of respondents:

$E = |(L - US): 100\%|$,

where L – total share of the lowest strata (%);

US – total share of middle and upper strata (%),

and has a measurement interval from 0 (maximum opposition) to 1 (maximum unity).

In turn, the coefficient of socio-economic polarization of the community is calculated by the formula:

$SEP = 1 - E$

and is measured in the interval from 0 (minimum degree of differentiation) to 1 (maximum degree of differentiation, which is characterized as polarization). With a certain degree of conventionality, such an interval of measurement of this coefficient allows presenting (greater or lesser) the degree of socio-economic differentiation of the community in the subjective dimension, based on the perception, assessment and identification of people with a certain property stratum, while the Gini coefficient gives an idea of the degree of differentiation of the population by income in the objective dimension.

The share of those who have become worse off compared to the previous year is also presented in percentage terms in relation to all respondents. It combines the shares of respondents who noted to a greater or lesser extent the worsening of their lives compared to the previous year. Despite the limitations of direct comparison of such an assessment with the change in the amount of real money incomes, the combination of these indicators allows assessing the dynamics of the material situation of the population compared to the previous year from different angles – based on objective changes and people's perception of them.

The research object is the regions of the Central Black Earth Region as one of the macroregions of Russia: Voronezh, Kursk and Lipetsk oblasts.

The information base of the research is formed by the data of state statistics (Rosstat)[4]. The empirical base of the study is represented by the results of a mass survey, conducted by us in September – October 2020 in Voronezh, Kursk and Lipetsk oblasts (N = 1200 people) on the basis of evenly distributed sampling (400 people were interviewed in each of the regions) and the standard program and methodology "Socio-Cultural Portrait of the Russian Region" (modification – 2015)[5]. The sample population of the work is sufficiently representative of the general population for each of the regions under consideration, the sampling error on one controlled characteristic does not exceed 3%. Surveys were conducted among the adult population (18 years and older) of the regions by semi-formalized (semi-standardized) interview method.

We also applied general scientific research methods and a set of analytical procedures, including in the process of analyzing empirical data: methods of descriptive statistics, statistical data analysis, secondary data analysis, comparative analysis.

[4] Regions of Russia. Socio-economic indicators. 2021: Stat. coll. Rosstat. Moscow, 2021; Regions of Russia. Socio-economic indicators. 2021: Stat. coll. Rosstat. Moscow, 2022.

[5] The sociological survey was conducted within the framework of the RFBR research project no. 18-011-00739.

Analysis of empirical data

The assessment of poverty incidence in the regions of the Central Black Earth Region based on the proportion of the population with incomes below the Gross Domestic Product (GDP) in the overall population structure shows that its scale does not exceed a tenth of regional communities and is somewhat differentiated by specific regions. While in the Kursk Oblast the share of absolute poverty reaches 10%, in the Voronezh and Lipetsk oblasts it is lower – 8.5 and 8.4% respectively. At the same time, the measurement of poverty through the prism of self-identification with socio-economic strata in terms of consumption reveals a significant prevalence of so-called the "subjective poverty" in the Central Black Earth regions, which includes those residents who consider themselves representatives of lower property strata. The scale of the latter is significant: in the Voronezh Oblast the share of the "subjective poor" includes about one fifth of the population, in the Kursk Oblast – one fourth, in the Lipetsk Oblast – one third of the population. The size of the "subjective poverty" exceeds the size of poverty in absolute terms by 2.3, 2.5 and 3.9 times, respectively *(Tab. 2)*.

The assessment of the level of socio-economic stratification of the population of the Central Black Earth regions through the values of the Gini coefficient reveals a low degree of such differentiation in regional communities, if we take into account the range of measurement of the coefficient used from 0 (minimum) to 1 (maximum). In the Kursk and Lipetsk oblasts the differentiation of money incomes turns out to be somewhat lower (0.362 and 0.378) than in the Voronezh Oblast (0.393). Compared to the value of this indicator for Russia as a whole (0.406), its values for the Central Black Earth regions are somewhat lower, although they are within the average level of differentiation, which suggests that the degree of such stratification in these regions is less than in the Russian society as a whole.

The coefficient of socio-economic polarization of the community, proposed as a way to measure the degree of differentiation of regional communities on the basis of subjective assessments, reveals a high

Table 2. Indicators of socio-economic vulnerability of the population in the Central Black Earth regions

Region	Objective indicators	Subjective indicators
	Share of population with incomes below the Gross Domestic Product (GDP), %	Share of the "subjectively poor" ("beggars" and "poor"), %
Voronezh Oblast	8.5	19.8
Kursk Oblast	9.9	25.3
Lipetsk Oblast	8.4	32.5
	Gini coefficient (differentiation of money incomes of the population)	Coefficient of socio-economic polarization of the community
Voronezh Oblast	0.393	0.73
Kursk Oblast	0.362	0.98
Lipetsk Oblast	0.378	0.97
	Real monetary income, % of the previous year	Share of those who have become worse off compared to last year, %
Voronezh Oblast	95.5	27.1
Kursk Oblast	97.8	23.6
Lipetsk Oblast	95.7	34.3

According to: for objective indicators of value for 2020 – Regions of Russia. Socio-economic indicators. 2022: Stat. coll. Rosstat. Moscow, 2022. P. 192, 240; Regions of Russia. Socio-economic indicators. 2021: Stat. coll. Rosstat. Moscow, 2021. P. 232; for subjective indicators values for 2020 – The results of a survey of the Central Black Earth regions using the standard methodology "Socio-cultural Portrait of the Russian Region".

level of socio-economic stratification in the Central Black Earth regions. While in the Voronezh Oblast the degree of subjective socio-economic polarization of the community is above average (0.73), in the Kursk and Lipetsk oblasts it is close to the maximum (0.98 and 0.97, respectively).

In the Voronezh Oblast, such contrast, less pronounced compared to other oblasts, is caused by a smaller share of the lower property strata ("beggars" 7.0% of all respondents in the region, "poor" 12.8%, "unsecured" 16.8%, in the aggregate amounting to 36.5%) relative to the share of middle and higher strata ("secured" 40.5%, "affluent" 18.3%, "rich" 4.8%, in their aggregate amounting to 63.5%) in the population structure. In the Kursk and Lipetsk oblasts, a higher level of socio-economic differentiation in the subjective dimension is determined by an approximately equal ratio between the lowest strata, on the one hand, and the middle and upper strata, on the other. For instance, in the Kursk Oblast, the share of all lower groups ("beggars" 6.3%, "poor" 19.0%, "unsecured" 24.0%) is 49.2% of the total population, while the total share of middle and upper strata ("secured" 30.0%, "affluent" 16.5%, "rich"4.3%) is 50.8%. In the Lipetsk Oblast, this ratio is represented by 51.5%, which is the total share of the lower strata ("beggars" 10.5%, "poor" 22.0%, "unsecured" 19.0%), and 48.5%, which includes the middle and upper strata ("secured" 31.0%, "affluent" 13.5%, "rich" 4.0%).

Changes in the material situation of the population of the Central Black Earth regions in comparison with the previous year are characterized by a reduction in real money incomes, the indicator of which is lower than in the previous year – 95.5–97.8% in some regions. At the same time, among the residents of the macro-region's oblasts there is a significant share of those who, to a greater or lesser extent, note the deterioration of their life, comparing it with the previous year. While in the Voronezh and Kursk oblasts this category accounts for approximately one fourth of the population (27.1 and 23.6%, respectively), in the Lipetsk Oblast it reaches one third of the population (34.3%).

Discussion of the research results

Due to the multifaceted nature of socio-economic vulnerability of the population, its interpretation and methodological approach to its measurement and assessment, proposed in this paper, leave room for discussion and further research in the interpretation of its content and the definition of empirical indicators. Previous works on similar issues also reflect the attempts of a number of researchers to give such a complex phenomenon an adequate definition and to find approaches and indicators for diagnosis. In our opinion, the complexity of the task and the observed variability of its solutions are largely due to the ambiguity of understanding of vulnerability as a phenomenon and the multiplicity of its manifestation in the socio-economic sphere of the regional community.

On the one hand, vulnerability itself can be understood in different ways: as deficiencies, weaknesses of any system, or its insecurity, inability to withstand negative impact, sensitivity, susceptibility to it, or the degree of losses, damages, or the ability to weaken the system, etc. In our proposed interpretation, socio-economic vulnerability is understood as a weakness of internal characteristics of the regional community, caused by social problems that have an objective-subjective nature (in the relationship between objective status indicators and their subjective interpretation by people), in the socio-economic sphere of the region. This interpretation of socio-economic vulnerability allows considering it as a relatively independent phenomenon from sustainability and resilience. At the same time, understanding this vulnerability through the prism of weak, problematic aspects of the regional community does not deny (and even allows concretizing) the recently developed

approach – overcoming vulnerability as a condition for achieving sustainability (Niaz, 2022; Vyalshina, 2022) and resilience (Smorodinskaya, Katukov, 2021). In this interpretation, the leveling of vulnerability is directly related to the reduction of acuteness and solution of social problems that have arisen on objective grounds and have a subjective assessment.

On the other hand, the probability of vulnerability of each of the numerous components of the socio-economic sphere of the regional community determines the limitations for its exhaustive diagnosis within the framework of a particular study and, accordingly, the need to choose a certain set of indicators for its measurement and evaluation.

The multidimensionality of socio-economic vulnerability of the regional community allows identifying its various components in the socio-economic sphere of the region, which can be the subject of further research. However, in our paper the focus of the research was concentrated on the internal characteristics of the region related to the material situation and socio-economic differentiation of the population, as they most clearly manifest the problems through the prism of objective indicators and subjective assessments.

Along with it, for the empirical assessment of socio-economic vulnerability of the Central Black Earth regions, we selected indicators that characterize the problems of both the state of the socio-economic sphere of the regional community (poverty incidence, socio-economic differentiation) and its dynamics (downward dynamics of the financial situation of a significant part of the population compared to the previous year). The inclusion of the latter indicator in the system of indicators, in our opinion, allows using the idea of Hungarian researchers about the relationship between vulnerability and variability (Buzási et al., 2022) and empirically confirm its conclusions using the example of the considered Central Black Earth regions of Russia.

At the same time, the attempt made here to clarify the essence of socio-economic vulnerability of the regional community, to establish the diagnostic capabilities of the model program and the methodology "Socio-Cultural Portrait of the Russian Region" for its empirical measurement are necessary steps in the process of searching for a conceptual framework for new interpretations of empirical material and rethinking the experience accumulated over many years of research under the interregional scientific program "Problems of socio-cultural evolution of Russia and its regions" (Socio-cultural evolution of Russia..., 2022).

As the results of the studies conducted by us and other authors show, the most significant problems determining the socio-economic vulnerability of the population include a significant prevalence of the "subjective poverty" and high subjective socio-economic polarization of communities. For instance, having analyzed empirical data on the perception of income inequality by Russians, G.V. Belekhova notes that the majority of them consider this inequality to be deep, unfair, carrying conflict and social dislike between extreme groups (Belekhova, 2023).

At the same time, previous nationwide and regional studies, including those implemented on the basis of the standard program and methodology "Socio-Cultural Portrait of the Russian Region", reveal the persistence in the assessment of poverty and socio-economic differentiation of the population of a significant gap between the objective status characteristics recorded by state statistics and their subjective assessments by people (Lapin et al., 2009; Slobodenyuk, 2019; Socio-cultural Evolution of Russia..., 2022). The relative stability of such a gap over a long period of time makes us look for its causes not only in the pandemic crisis that began in 2020 and negatively affected the level

of income and financial situation of the population, but also connect it with the mechanism of formation of people's subjective assessment of their socio-economic status and its changes.

The formation of such subjective assessments is carried out through perception, interpretation and identification with a certain status in the socio-economic hierarchy of the community. In this process, one evaluates one's status and available opportunities in comparison with personal ideas about sufficient and desired level of income and consumption, acceptable standard of living, one's own and family material resources, etc. Therefore, the discrepancy between the real and desired socio-economic status can be a key reason for self-identification of people with lower property strata, which leads to a significant gap between the objective and subjective picture of poverty and socio-economic differentiation of the population.

In this regard, it is also necessary to take into account the significant role of non-monetary factors that influence the perception and subjective assessment of one's socio-economic situation both at a certain moment and in the short-term dynamics. As E.D. Slobodenyuk notes on the example of analyzing the causes of deep poverty among Russians, the separation of groups of "objective" and "subjective" poverty is influenced by different factors. If in the first case the key role is played by high dependency burden and employment problems, in the second case – problems with health and accessibility of medical care, difficulties in the family and daily life, low educational level, precarious nature of employment (Slobodenyuk, 2019).

The observed sustainability of such a gap is largely due to the emergence of new living standards and, accordingly, changes in the population's demands, as well as the persistence of socio-economic problems. According to V.D. Milovidov, in modern society, characterized by openness and increased globalization, new criteria and standards of life are constantly being produced, while at the same time people's opportunities to ensure and improve their lives and meet these standards are limited (Milovidov, 2021, p. 71).

Conclusion

To summarize, we can briefly present the results obtained in the course of the work. First, the concept of socio-economic vulnerability of a regional community, practiced as its state conditioned by internal characteristics of the socio-economic sphere, concentrating social problems, which are manifested in objective status indicators and their subjective interpretation by people, has been clarified. Second, we propose a methodological approach to the sociological diagnosis of one of the key aspects of socio-economic vulnerability of socio-territorial community, related to the material situation and socio-economic differentiation of the population, based on the comparison of statistical and survey data, the definition of a number of indicators of the standard program and methodology "Socio-Cultural Portrait of the Russian Region", the development of the coefficient of socio-economic polarization of the community. Third, the indicators selected to assess the socio-economic vulnerability of regional communities allowed us to identify the key "pain points" of the socio-economic sphere of the Central Black Earth regions in modern conditions:

– significant prevalence of poverty in the subjective dimension, associated with self-identification of residents with lower socio-economic strata, and its marked excess (two or more times in some regions) over the scale of poverty in the objective dimension, given by the share of the population with incomes below the Gross Domestic Product (GDP);

– high degree of socio-economic differentiation in the subjective dimension, due to the contrasting ratio between the lower strata, on the

one hand, and the middle and upper strata, on the other hand, identified on the basis of socio-economic identification of residents, and its greater magnitude (2 or more times) compared to the degree of differentiation of money incomes of the population, assessed by means of the Gini coefficient;

– reduction in real monetary incomes of the population as compared to the previous year and significant prevalence among the population of the opinion about the deterioration of life as compared to the previous year (from one fourth to one third of the population in some regions), which indicates the reflection in public opinion of the downward trend in the short-term dynamics of the material situation of a fairly massive share of the population.

The scientific significance of the obtained results is associated with the development of scientific ideas about socio-economic vulnerability of the regional community as a multidimensional and latent phenomenon, the measurement and assessment of which requires its conceptualization and the construction of a system of empirical indicators. In this regard, the research results are important for the expansion of knowledge in the field of economic sociology, theory of social structure and stratification, and regional sociology.

The proposed interpretation of socio-economic vulnerability of communities and a set of its diagnostic indicators can be adjusted taking into account the subsequent clarification of the content of the phenomenon under consideration in the context of new challenges and expanding opportunities for its more detailed characterization, which determines the main directions for further study of this topic. They can also be used and developed in subsequent studies of similar problems on the materials of other Russian regions.

The practical significance of the results of the conducted research lies in the possibilities of their application to identify social problems of the regions, manifested in the construction of significant socio-economic contrasts in the public consciousness, socio-economic polarization of regional communities in the subjective dimension, and the search for effective solutions to these problems, taking into account their objective-subjective nature.

References

Alekseenok A.A., Mikhalev I.V. (2020). Socio-economic situation of the poor population in the conditions of transformation of the social structure of modern Russian society. *Srednerusskii vestnik obshchestvennykh nauk=Central Russian Journal of Social Sciences*, 15(4), 29–45. DOI: 10.22394/2071-2367-2020-15-4-29-45 (in Russian).

Arthurson K., Baum S. (2015). Making space for inclusion in conceptualizing climate change vulnerability. *Local Environment*, 20(1), 1–17. DOI: 10.1080/13549839.2013.818951

Baburin V.L., Badina S.V., Goryachko M.D. et al. (2016). Vulnerability assessment of socio-economic development of the Russian Arctic territories. *Vestnik Moskovskogo universiteta. Seriya 5: Geografiya*, 6, 71–77 (in Russian).

Balasubramani K., Sekar L.G., Kanagarajan A. et al. (2021). Revealing the socio-economic vulnerability and multi-hazard risks at micro-administrative units in the coastal plains of Tamil Nadu, India. *Geomatics, Natural Hazards and Risk*, 12(1), 605–630. DOI: 10.1080/19475705.2021.1886183

Belekhova G.V. (2023). The scale of inequality and the specifics of its perception in modern Russia. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 16(1), 164–185. DOI: 10.15838/esc.2023.1.85.9 (in Russian).

Belyaeva L.A. (2021). Civilizational heterogeneity of Russia. Property in the field of civilizational development. *Vestnik Instituta sotsiologii*, 12(3), 27–53. DOI: 10.19181/vis.2021.12.3.736 (in Russian).

Blackwood L., Cutter S.L. (2023). The application of the social vulnerability index (SoVI) for geo-targeting of post-disaster recovery resources. *International Journal of Disaster Risk Reduction*, 92, 103722. DOI: 10.1016/j.ijdrr.2023.103722

Bruneckiene J., Pekarskiene I., Palekiene O., Simanaviciene Z. (2019). An assessment of socio-economic systems' resilience to economic shocks: The case of Lithuanian regions. *Sustainability (Switzerland)*, 11(3), 566. DOI: 10.3390/su11030566

Buzási A., Jäger B.S., Hortay O. (2022). Mixed approach to assess urban sustainability and resilience – a spatio-temporal perspective. *City and Environment Interactions*, 16, 100088. DOI: 10.1016/j.cacint.2022.100088

Cutter S.L., Barnes L., Berry M. et al. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, 18(4), 598–606. DOI: 10.1016/j.gloenvcha.2008.07.013

Derakhshan S., Emrich C.T., Cutter S.L. (2022). Degree and direction of overlap between social vulnerability and community resilience measurements. *PLoS ONE*, 17(10), e0275975. DOI: 10.1371/journal.pone.0275975

Dutta S., Chatterjee S. (2022). Assessment of socio-economic vulnerability in a forested region: An indicator-based study in Bankura District of West Bengal, India. In: *Geospatial Technology for Environmental Hazards. Advances in Geographic Information Science*. Cham: Springer. DOI: 10.1007/978-3-030-75197-5_21

Emrich C.T. (2005). *Social Vulnerability in US Metropolitan Areas: Improvements in Hazard Vulnerability Assessment*. University of South Carolina.

Gorshkov M.K. (2020). Russian society in measurement. *Vestnik Rossiiskoi akademii nauk*, 90(3), 232–242. DOI: 10.31857/S0869587320030068 (in Russian).

Ikram M., Zhang Q., Sroufe R., Ferasso M. (2020). The social dimensions of corporate sustainability: An integrative framework including COVID-19 insights. *Sustainability (Switzerland)*, 12(20), 1–29, 8747. DOI: 10.3390/su12208747

Ilyin V.A., Morev M.V. (2022). Nationwide poverty – "a threat to steady development and our demographic future". *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast,* 15(1), 9–33. DOI: 10.15838/esc.2022.1.79.1 (in Russian).

Johns R.A., Dixon B., Pontes R. (2020). Tale of two neighbourhoods: Biophysical and socio-economic vulnerability to climate change in Pinellas County, Florida. *Local Environment*, 25(9), 697–724. DOI: 10.1080/13549839.2020.1825356

Kandari P., Bahuguna U., Salgotra A.K. (2021). Socio-economic and demographic determinants of financial inclusion in underdeveloped regions: A case study in India. *Journal of Asian Finance, Economics and Business*, 8(3), 1045–1052. DOI: 10.13106/jafeb.2021.vol8.no3.1045

Kelly M.P., Adger N.W. (2000). Theory and practice in assessing vulnerability to climate change and facilitating adaptation. *Climate Change*, 47(4), 325–352.

Kireyeva A.A., Nurlanova N.K., Kredina A.A. (2022). Assessment of the socio-economic performance of vulnerable and depressed territories in Kazakhstan. *R-Economy*, 8(1), 21–31. DOI: 10.15826/recon.2022.8.1.002

Lapin N.I., Belyaeva L.A., Kogai E.A. et al. (2009). *Regiony v Rossii: sotsiokul'turnye portrety regionov v obshcherossiiskom kontekste* [Regions in Russia: Socio-Cultural Portraits of Regions in the All-Russian Context]. Moscow: Academia.

Lapin N.I., Belyaeva L.A., Shabunova A.A. (Eds.). (2022). *Sotsiokul'turnaya evolyutsiya Rossii: 30 let issledovanii* [Sociocultural Evolution of Russia: 30 Years of Research]. Moscow: Ves' Mir.

Lev M.Yu. (2021). Poverty and subsistence level of the population in providing social and economic security. *Ekonomicheskaya bezopasnost*, 4(3), 549–570. DOI: 10.18334/ecsec.4.3.112403 (in Russian).

Mandal K., Dey P. (2022). Coastal vulnerability analysis and RIDIT scoring of socio-economic vulnerability indicators – a case of Jagatsinghpur, Odisha. *International Journal of Disaster Risk Reduction*, 79, 103143. DOI: 10.1016/j.ijdrr.2022.103143

Marsden T. (2009). Mobilities, vulnerabilities and sustainabilities: Exploring pathways from denial to sustainable rural development. *Sociologia Ruralis*, 49(2), 113–131. DOI: 10.1111/j.1467-9523.2009.00479.x

Milovidov V.D. (2021). Inequality pandemic: New dimensions of social disparity under coronacrisis. *Nauchnye trudy Vol'nogo ekonomicheskogo obshchestva Rossii=The VEO of Russia*, 228(2), 59–81. DOI: 10.38197/2072-2060-2021-228-2-59-81 (in Russian).

Niaz M.U. (2022). Socio-economic development and sustainable development goals: A roadmap from vulnerability to sustainability through financial inclusion. *Economic Research-Ekonomska Istrazivanja*, 35(1), 3243–3275. DOI: 10.1080/1331677X.2021.1989319

Pasovets Yu.M. (2011). The quality of population's life as an integrated index of function region's efficiency. *Vestnik Nizhegorodskogo universiteta im. N. I. Lobachevskogo: Seriya Sotsial'nye nauki=Vestnik of Lobachevsky State University of Nizhni Novgorod. Series: Social Sciences*, 1(21), 66–73 (in Russian).

Pasovets Yu.M. (2019). Socio-economic identification of the population as a factor of structurization of urban space (case study of cities of Kursk Oblast). *Primo Aspectu*, 4(40), 7–14. DOI: 10.35211/2500-2635-2019-4-40-7-14 (in Russian).

Ravichandran V., Kantamaneni K., Periasamy T. et al. (2022). Monitoring of multi-aspect drought severity and socio-economic status in the semi-arid regions of Eastern Tamil Nadu, India. *Water (Switzerland)*, 14(13), 2049. DOI: 10.3390/w14132049

Ren C., Zhai G., Zhou S. et al. (2018). A comprehensive assessment and spatial analysis of vulnerability of China's provincial economies. *Sustainability (Switzerland)*, 10(4), 1261. DOI: 10.3390/su10041261

Rozhkovskaya E.A., Garkavaya V.G. (2022). Risks and sources of vulnerability for regions sustainable development. *Ekonomicheskii byulleten' Nauchno-issledovatel'skogo ekonomicheskogo instituta Ministerstva ekonomiki Respubliki Belarus'*, 7(301), 23–34 (in Russian).

Rygel L., O'Sullivan D., Yarnal B. (2006). A method for constructing a social vulnerability index: An application to hurricane storm surges in a developed country. *Mitigation and Adaptation Strategies for Global Change*, 11(3), 741–764. DOI: 10.1007/s11027-006-0265-6

Shabunova A.A., Gruzdeva M.A. (2016). Development of the regions of the Russian Federation: Integral technique as an evaluation tool. *Regional'naya ekonomika: teoriya i praktika=Regional Economics: Theory and Practice*, 1(424), 100–112 (in Russian).

Shabunova A.A., Kalachikova O.N., Leonidova G.V. et al. (2022). *Sotsial'noe razvitie territorii: aktual'nye trendy i novye vyzovy* [Social Development of Territories: Current Trends and New Challenges]. Vologda: Vologda Research Center of RAS.

Slobodenyuk E.D. (2019). Deep poverty in Russia: The specifics of the objective and subjective poor and their requests for social policy. *Sotsiologicheskaya nauka i sotsial'naya praktika*, 7, 4(28), 26–38. DOI: 10.19181/snsp.2019.7.4.6797 (in Russian).

Smorodinskaya N.V., Katukov D.D. (2021). Resilience of economic systems in the age of globalization and sudden shocks. *Vestnik Instituta ekonomiki Rossiiskoi akademii nauk=Bulletin of the IE RAS*, 5, 93–115. DOI: 10.52180/2073-6487_2021_5_93_115 (in Russian).

Soboleva I.V., Sobolev E.N. (2021). Household income in a pandemic: Shifting vulnerable zones and protection mechanisms. *Ekonomicheskaya bezopasnost'*, 4(3), 531–548. DOI: 10.18334/ecsec.4.3.112448 (in Russian).

Spiliotopoulou M., Roseland M. (2020). Urban sustainability: From theory influences to practical agendas. *Sustainability (Switzerland)*, 12(18), 1–19, 7245. DOI: 10.3390/su12187245

Starovoitov V.G., Starovoitov N.V. (2020). Modern trends of the dynamics of property inequality, poverty, unemployment as sources of threats to the economic and national security of Russia. *Razvitie i bezopasnost'*, 3(7), 105–114. DOI: 10.46960/2713-2633_2020_3_105 (in Russian).

Sun Y., Li Y., Ma R. et al. (2022). Mapping urban socio-economic vulnerability related to heat risk: A grid-based assessment framework by combing the geospatial big Data. *Urban Climate*, 43, 101169. DOI: 10.1016/j.uclim.2022.101169

Tanir T., Sumi S.J., Lima A. D. S. et al. (2021). Multi-scale comparison of urban socio-economic vulnerability in the Washington, DC metropolitan region resulting from compound flooding. *International Journal of Disaster Risk Reduction*, 61, 102362. DOI: 10.1016/j.ijdrr.2021.102362

Turner B.L. (2010). Vulnerability and resilience: Coalescing or paralleling approaches for sustainability science? *Global Environmental Change*, 20(4), 570–576. DOI: 10.1016/j.gloenvcha.2010.07.003

Van Beynen P., Akiwumi F.A., Van Beynen K. (2018). A sustainability index for small island developing states. *International Journal of Sustainable Development and World Ecology*, 25(2), 99–116. DOI: 10.1080/13504509.2017.1317673

Vasil'ev Yu.S., Didenko N.I., Cherenkov V.I. (2019). Some items and prospective drivers for sustainable development of the Arctic zone of Russian Federation. *Sever i rynok: formirovanie ekonomicheskogo poryadka*, 1(63), 4–26. DOI: 10.25702/KSC.2220-802X.1.2019.63.4-26 (in Russian).

Vyal'shina A.A. (2022). Changing priorities of rural development in conditions of increasing global instability. *Regional'nye agrosistemy: ekonomika isotsiologiya=Regional Agrosystems: Economics and Sociology*, 3, 91–99 (in Russian).

Zeng X., Yu Y., Yang S. et al. (2022). Urban resilience for urban sustainability: Concepts, dimensions, and perspectives. *Sustainability (Switzerland)*, 14(5), 2481. DOI: 10.3390/su14052481

Zhikharevich B.S., Klimanov V.V., Maracha V.G. (2020). Resilience of the territory: Concept, measurement, governance. *Regional'nye issledovaniya*, 3, 4–15. DOI: 10.5922/1994-5280-2020-3-1 (in Russian).

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Social Capital of the Russian Region: State and Dynamics

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Abstract. Social capital is the basic characteristic of the system of social relations arising in a territorial community. In the context of ongoing global transformations, manifested both on a national scale and at the regional level, there is a need to analyze the changing social reality. We consider the concept of social capital as a promising explanatory model in the analysis of ongoing social changes. Based on this theoretical approach, the goal was set to analyze the state and dynamics of the social capital of the territorial community. The object of the study is the territorial community of the Vologda Oblast, the subject is the state and dynamics of social capital. The novelty of the work consists in obtaining analytical data by conducting a unique long-term observation, which has become, in fact, monitoring. The study used the author's methodology for determining the level of accumulated social capital based on its integral index calculated for each respondent, which allows us to identify groups of its carriers characterized by different amounts of social resources that can serve as a factor of noneconomic development. The empirical basis of the study is the results of public opinion polls conducted in 2016, 2019, 2020 and 2021 among the population of the Vologda Oblast on a multi-stage, quota-based settlement and demographic characteristics, a random sample at the stage of selecting respondents. In the course of the study, fairly stable groups were identified that maintain their boundaries throughout the observation period. The changes in the social capital index recorded during the observation period serve as an indicator of its dynamism. The influence of environmental factors, for example, the pandemic, which affected the loss of social capital, was revealed. The analysis showed that various local communities differed both in the volume of losses and in the ability to restore social ties. The least losses and faster recovery were observed

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in rural areas. The results of the study can be used in the activities of federal, regional public authorities, local governments, scientific and educational organizations in the analysis of social processes in regional territorial communities, as well as serve as a basis for further research on the subject under consideration.

Key words: social capital, indicator model, integral index, territorial community, dynamics of social capital, territoriality.

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Introduction

At present, a fundamentally new socio-political and economic situation is being formed in Russian society under the influence of a number of global circumstances, which requires understanding and analyzing the resources available in society including social resources, one of which is social capital.

In recent years, social capital has become a rather popular concept in academic theories and research, gaining influence as a basis for policy decisions necessary to shape everyday practices in order to achieve social inclusion. Widely understood in the context of social ties that influence personal interactions, it is also applicable to explain individual and group differences. It has become possible to use this concept to explain a variety of phenomena in virtually all spheres of social activity. At the same time, it cannot be called definitively established, which gives rise to different approaches to the interpretation of the phenomenon itself and leads either to its extended interpretation or to its reduction to one of the components, i.e. to the rejection of the structural approach.

In the world practice, interest in social capital is quite wide. For example, social capital is included as a sub-index in the calculation of the Global Sustainable Competitiveness Index (GSCI)[1], which makes it possible to measure the competitiveness of countries not only through GDP. The United States has developed a social capital atlas[2], which contains data on social capital in every neighborhood, high school and college. Its creators believe that social capital plays an important role in a variety of outcomes, from income to health. The Atlas provides answers to questions related to social mobility. In the UK, data on social capital are collected by the Office for National Statistics[3] on an ongoing basis.

The study of social capital is the research of the forms and nature of existing social ties between subjects. Social capital is a characteristic, first of all, of a territorial community, since its carriers are the inhabitants of a particular territory. The very fact that the concept emerged on the basis of the study of behavioral practices in territorial communities (Putnam, Helliwell, 1995; Callois, Schmitt, 2009; Panebianco, 2013) serves as a confirmation. This characterization of a territorial community provides information about its structural properties, about the availability of social resources and their distribution among different social groups, about the existing practices of its emergence and use, about the influence of the institutional environment, political system, religious, cultural and other factors on its condition.

[1] Social Capital Index: Map of the world. Available at: https://solability.com/the-global-sustainable-competitiveness-index/the-index/social-capital (accessed: March 9, 2023).

[2] Social Capital Atlas. Available at: https://www.socialcapital.org (accessed: March 12, 2023).

[3] Office of National Statistics. Available at: https://www.ons.gov.uk (accessed: March 12, 2023).

Theoretical basis of the research

In the conditions of modernity under the influence of the trends of transition from industrial society to post-industrial society structural characteristics of society are undergoing changes (Chernysh, 2019). Social objects begin being perceived not as things, but as processes, not as existing, but as becoming. According to P. Sztompka, science asserts the position that society is not just a dynamic process, but a continuous process of change. Society, according to the scientist, "is formed rather than existing, and at the same time it is made up of events rather than objects" (Sztompka, 1991).

The development of the concept of social capital was a response to a number of accumulated problems and challenges, first of all, to economic theory. The concept of social capital is clearly manifested in the attitude toward the integration of traditional economic concepts with sociological and political science. Its inclusion in the conceptual arsenal of research can contribute to a more adequate understanding of the nature of socio-economic and political development of Russia along the innovation path (Rozhkov, 2009).

Expanding the use of the category "capital" in sociology became possible largely due to G. Becker's concept of human capital (Becker, 1964). P. Bourdieu's systematic analysis of social capital was also a significant step in the formation of the concept. He defined it form as "an aggregation of actual or potential resources that are associated with inclusion in strong network or more or less institutionalized relations of mutual obligations or recognition" (Bourdieu, 1985). P. Bourdieu's approach can be called instrumental because the scientist emphasized the benefits received by individuals due to constant participation in groups in order to obtain some resource. "The benefit that is accumulated through group membership is the basis of possible solidarities" (Bourdieu, 1985). P. Bourdieu defined social capital as a factor in social behavior. Speaking about the fields of social relations and linking them with forms of capital, he identified economic, cultural, social and symbolic capital, arguing that the distribution of capital in the space of social relations determines the social behavior of people through the formation of appropriate habitus. Habitus, representing an attitude, in relation to social capital is, first of all, trust. In our opinion, this interpretation of trust allows understanding how trust generates practices and perceptions of individuals. Since habitus preserves constancy in change, trust as a habitus is a mechanism of practices of interaction between actors in different structures. Trust enables actors occupying similar social positions to identify each other, interact with each other, build relationships (Guzhavina, 2018). The most important condition for the formation of social capital is considered to be associative activity, the role of which in the life of society was emphasized by A. de Tocqueville (Tocqueville, 1992). Modern researchers compare it to the glue that connects individuals into a single community (Buzgalin, 2011).

At present, there is a number of interpretations of social capital, characterized by methodological diversity. During the formation of the concept, theorists relied on the most significant characteristics of the phenomenon from their point of view. For instance, J. Coleman connects social capital with the organization of society, believing that it is social organization that forms social capital (Coleman, 1993). R. Putnam argues that social capital denotes the functions of social organization (Putnam et al., 1993). It was this approach that allowed him to describe different types of social ties and relations based on them. In addition, the scholar drew attention to specific forms of social organization such as trust, norms, and networks. Emphasizing the importance of networks, R. Putnam wrote that social capital is "the ties

between individuals, social networks and the norms of reciprocity and trust that flow from them" (Putnam et al., 1993).

E. Ostrom connects his interpretation of social capital with the norms and rules of interaction between individuals (Ostrom, 2000). It is these, embedded in repetitive activities, that form collective actions.

Quite often in publicist literature social capital is compared to a lubricant in the mechanism of social interactions. And the authors are not far from the truth because thanks to social capital the interactions between the parties are facilitated. According to the researchers, it happens because personalized mechanisms, such as personalized trust, are activated (Afanasiev et al., 2016).

The diversity of social ties that constitute the very essence of social capital is reflected in the classification of its types. For example, R. Putnam singled out bridging social capital, which is focused on the creation by actors of sufficiently broad ties that expand the boundaries of the group. In this case, people create wide networks of contacts with people of different status positions, which provides them with access to wide resource opportunities. R. Putnam labeled the second type as bonding, oriented to strong group ties, the purpose of which is to strengthen the identity of the group at the expense of its homogeneity (Putnam et al., 1993). The delineation of these types has important semantic significance because each generates very different externalities. F. Pichler and C. Wallace proposed a different structure of types of social capital depending on the source of formation of the latter, distinguishing formal, informal and family types (Pichler, Wallace, 2007).

Another interesting classification was proposed by Russian researchers. When studying social capital, it was typologized as "open" and "closed", or as "Putnam groups" and "Olson groups" (Polishchuk, Menyashev, 2011). All classifications are united by one common feature – the degree of strength and stability of ties. Strong ties create certain barriers to contacts, while weak ties expand such opportunities. It is weak ties that ensure the circulation of information in networks, conditions for collective actions of actors, and their facilitation.

The concept of social capital is based on the idea that social relations and social norms can provide access to valuable resources that improve people's well-being. Nevertheless, the social capital theory is not widely used, in our opinion, as an explanatory model of collective action, despite the fact that an indication of this property of social capital can be found in the works of both J. Coleman and E. Ostrom.

Research methods and methodology

We consider social capital as an integral characteristic of the formed social reality. This category is a concept analytically extracted from the totality of phenomena of people's life activities. Social capital is a set of relations formed on the basis of norms and values, primarily on the basis of trust. Actually, social capital is concentrated in the variety of social ties that an individual possesses (Afanasiev et al., 2016). In our study, social capital is understood as networks of social relations based on trust and characterized by common norms, values and the level of people's involvement in them; external effects and results useful for society, social groups, generated by social interaction within these networks and associations (Guzhavina et al., 2018, p. 35). This approach makes it possible to assess the state and dynamics of the community's social capital using quantitative methods. In the study, we used our methodology for determining the level of accumulated social capital based on its integral index calculated for each respondent, which makes it possible to distinguish groups of its carriers characterized by different amounts of available social resources. We obtained the analytical data in the course of a unique multi-year observation,

which has become, in fact, a monitoring one. We used the results of several surveys carried out on the territory of the Vologda Oblast using a comparable methodology and identical tools[4].

The indicator model of social capital measurement was built to quantitatively assess the phenomenon of social capital (Afanasiev et al., 2016). It allows calculating the integral index of social capital I_{sc}:

$$I_{sc} = (I_{trust} + I_{nets} + I_{values\ and\ attitudes})/3.$$

Based on the indicator model, the integral index of social capital is calculated for each respondent, which allows identifying groups of its carriers and assess the level of accumulated social resources. Respondents who mainly chose the position of the type "I do not trust" / "did not participate" / "I cannot influence in any way", etc., were included in the first group, which was labeled as owners of minimal social capital ($I_{sc} < 2$; conventionally – Type 1). The second group included respondents with a higher index; they were labeled as possessors of low social capital ($I_{sc} >= 2$ and < 2.5; conventionally – Type 2). The third group included respondents with medium-level social capital ($I_{sc} >= 2.5$ and < 3; conventionally – Type 3). The fourth group included carriers of relatively high level of social capital ($I_{sc} >= 3$ and < 3.5; conditionally – Type 4). Respondents with a high level of social capital were categorized in the fifth group (Claim > 3.5; conditionally – Type 5) (Guzhavina et al., 2022).

The distinguished groups include respondents who demonstrate quite close life positions and have similar values and attitudes to a certain extent. The conducted research has shown that the groups are quite stable in their quantitative composition, although they are subject to the influence of external factors. The analysis shows the diversity of socio-demographic characteristics. The carriers of social capital of different levels are people irrespective of their education, age or sex. There is no clear dependence on material status. It is worth noting that the study did not cover the extreme income groups due to the difficulty of their attainability. Thus, we can state that social capital is not strictly linked to socio-demographic and economic characteristics of a respondent.

The novelty of the work consists in obtaining analytical data by conducting a unique multi-year observation, which has become, in fact, a monitoring one. The value of the obtained analytical data lies in the possibility, first, to observe the processes of formation and concentration of social capital among carriers; second, to identify differences in the volume of accumulation of resources, the sources of which are social ties and contacts of an individual; third, to assess the dynamics of these processes under the influence of external factors, in particular, the coronavirus pandemic. Diagnostics of the state of social capital in the territorial community allowed assessing the nature of its distribution among the population. Taking into account the recorded fluctuations, we assume that the targeted management impact will positively influence the process of restoration and accumulation of social capital, which may have certain social effects in the form of increased trust in the community both between individuals and in relation to the governing structures, activation of civil society structures, in particular, through the activation of various forms of civic participation.

[4] The 2016 survey conducted under the RSF-RFBR grant no. 16-03-00188-OGN "Regional social capital in the conditions of socio-economic crisis", sample size – 1,500 people; the survey conducted in 2019 under the RFBR grant no. 19-011-00724 "Barriers to civic participation and mechanisms for overcoming them at the regional level", sample size – 1,900 people; the surveys conducted in 2020 and 2021 within the framework of the RFBR grant no. 20-011-00326 "Collective actions and social capital in the Russian society", sample volume 2020 – 1900 people, 2021 – 1,550 people. The sample is multistage, quota, random at the stage of respondent selection. Sampling error does not exceed 3%.

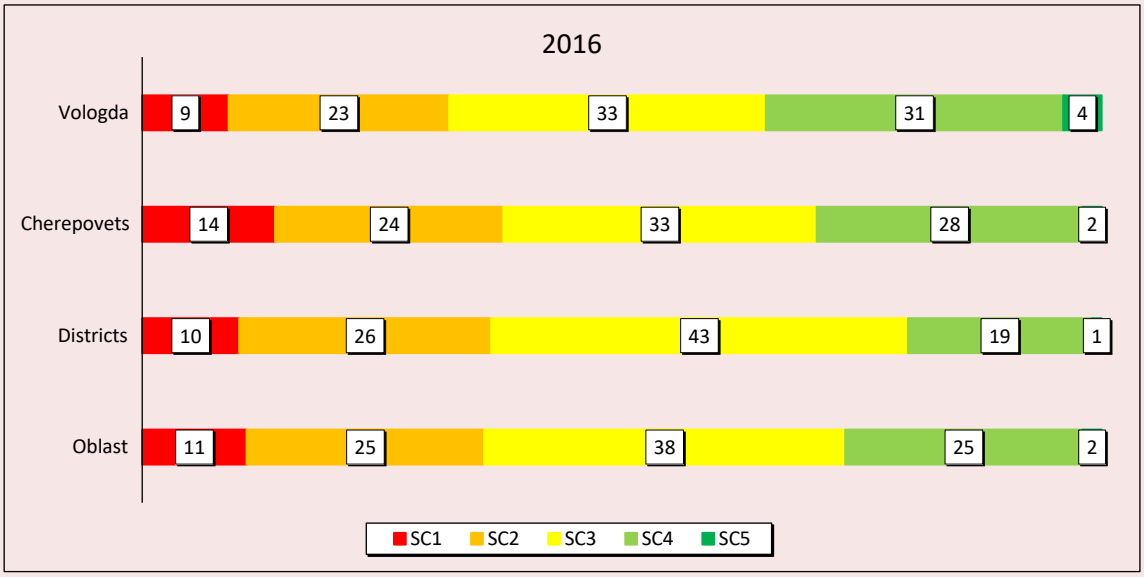
Results and discussion

The Vologda Oblast is considered to be one of the most developed among the regions of the Northwestern Federal District[5]. To fully assess the situation in the regional community, it is important to have an idea not only about economic indicators, but also about intangible resources, which include social capital (Guzhavina, 2016). In order to study the social capital of the Vologda Oblast population, let us turn to the five-year observation experience, during which the level of accumulated social capital of respondents was regularly calculated. Taking into account the research model, we analyze the distribution of social capital depending on the territorial affiliation of its carriers (within the region).

Territoriality as a characteristic of social capital is based on the fact that people as physical beings, for the most part, have a certain attachment to the territory of residence and place of work. Each locality is a local community. It is in such local communities, where individuals undergo their socialization, are included in the existing systems of contacts and ties, enrich them with new ones or get rid of the unclaimed ones, that the formation of social capital takes place.

The research conducted for the first time in 2016 revealed relatively high indicators of social capital. In large cities of the Vologda Oblast (Vologda and Cherepovets), about one third of respondents possessed social capital of high or above average level, but in rural areas this category includes about one fifth of residents, due to which the average share of people with social capital of high or above average level in the Oblast amounted to only a quarter of the population. The total number of owners of social capital of the minimum and below average level is approximately the same in all districts of the Vologda Oblast (*Fig. 1*). The situation is somewhat worse in the large industrial

Figure 1. Distribution of respondents by level of accumulated social capital in the Vologda Oblast in 2016, % of respondents



Source: VolRC RAS survey data, 2016, N = 1500.

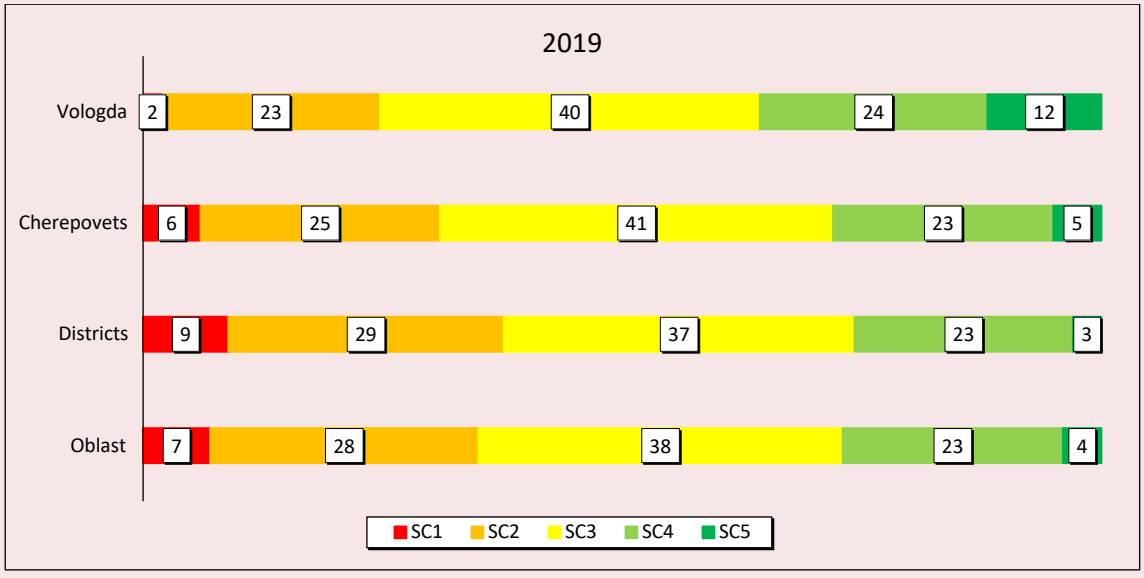
[5] Rating of socio-economic situation of the regions. Available at: https://riarating.ru/infografika/20200602/630170513.html

center – in Cherepovets. The share of its residents with minimal social capital amounted to 14%, which exceeded the values of this indicator typical for other territorial communities of the region.

The 2019 measurements revealed a positive trend toward an increase in the share of carriers of social capital of high and relatively high level. In the Vologda Oblast, the share of carriers of social capital of the first (lowest) level decreased by 4%, while the number of holders of social capital of the fifth (high) level became more by 2% (*Fig. 2*). Consequently, the region has the potential to further improve the situation. Positive changes have also occurred in Cherepovets, where the share of respondents belonging to the group with minimal social capital has significantly decreased.

As in 2016, in 2019 Vologda demonstrated the best indicators describing the state of social capital. One of the reasons for this, in our opinion, lies in the opportunities existing in the city for the formation of new connections and relations, which act as a kind of environment for the formation of social capital. Vologda, being an administrative, cultural, educational center of the region, creates more opportunities for the formation of a wide network of relations. Here are concentrated management centers of regional, city and district levels, headquarters of political parties and public organizations, such as trade unions, the regional branch of the Red Cross, the Regional Organization of the All-Russian Society of the Disabled, etc. In addition to the regional headquarters of such structures, there are their city branches in the city. For example, we note that in Vologda there are almost three times more organizations registered in the register of SNPOs than in Cherepovets[6].

Figure 2. Distribution of respondents by level of accumulated social capital in the Vologda Oblast in 2019, % of respondents



Source: VoRC RAS survey data, 2019, N = 1900.

[6] Vologdastat. Register of SNPOs. Available at: https://vologda-oblast.ru/vlast/pravitelstvo_oblasti/strukturnye_podrazdeleniya_pravitelstva/ (accessed: June 23, 2023).

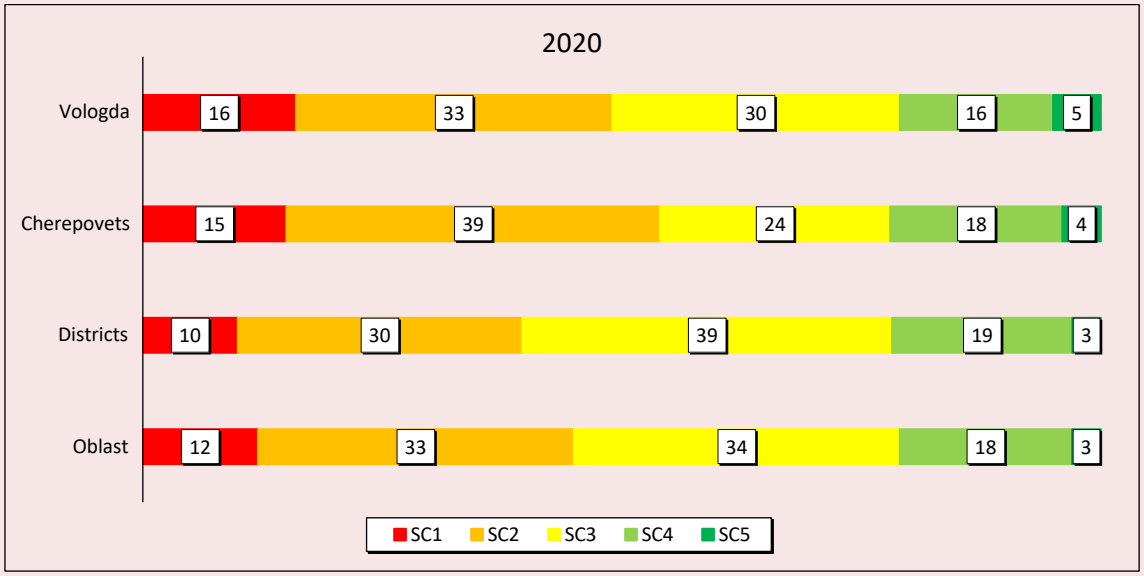
Cherepovets, as an industrial center, does not require from its residents such a high level of activity and does not provide such opportunities for it. Residents of small towns and rural areas have fewer opportunities for social activity. In addition, informal contacts and kinship ties are more important for rural areas. It is through these channels that information flows, many issues are solved within the framework of established practices that are traditionally informal in nature.

The study reveals such a distinctive feature of social capital as its uneven distribution among its holders. We emphasize the territory of residence and the scale of settlement as influence factors in this case.

In 2020, the analysis recorded a slight drop in the level of social capital of the Vologda Oblast population compared to the pre-coronavirus 2019. First of all, there was a decrease in the share of carriers of relatively high (group 4) and maximum (group 5) level of social capital. Accordingly, the shares of carriers of low and minimal levels of social capital increased including almost half of the respondents (45%). It is obvious that the pandemic year has caused serious damage to social capital. Self-isolation, contact restrictions, and distancing led to tangible losses in social relationships. Wariness, psychological tension increased, which was reflected in a significant increase in negative judgments (*Fig. 3*).

The obtained data allow drawing another conclusion characterizing social capital. The restriction of connections and contacts leads to a significant drop in the level of social capital and demonstrates the role of social connections and relationships for its production. The pandemic helped provide strong evidence of the social nature of social capital.

Figure 3. Distribution of respondents by level of accumulated social capital in the Vologda Oblast in 2020, % of respondents



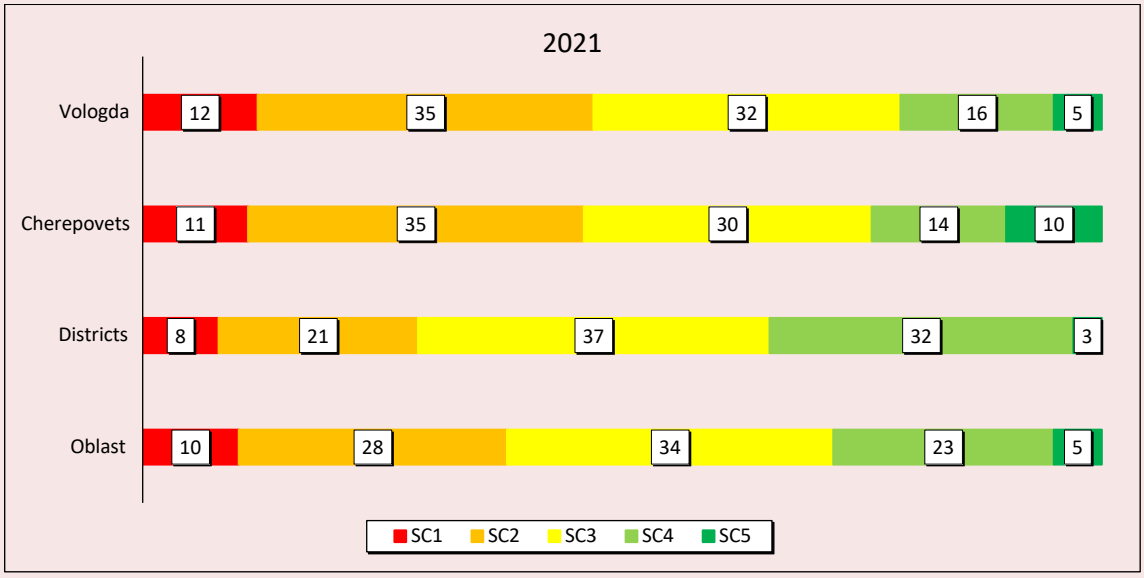
Source: VoRC RAS survey data, 2020, N = 1918.

In 2021, a trend toward the recovery of social capital was recorded, but the "pre-pandemic" level was not reached. The number of carriers of social capital of the minimum and low level, although significantly reduced, still exceeded the indicators of 2019 (*Fig. 4*). Almost a tenth of the Vologda Oblast residents had a minimum level of social capital. In the answers of respondents in this category, the choice of alternatives containing negation prevailed, i.e. statements that they cannot trust anyone (neither people nor institutions), cannot turn anywhere for help, are not ready to unite with other people, do not consider themselves capable of influencing their own lives on a significant scale, etc. Slightly more than a quarter of respondents demonstrated possession of high and relatively high level of social capital. Representatives of this category are characterized by a fairly high readiness to unite, confidence in the ability to influence their lives, positive experience in the issue of interpersonal and institutional trust.

The positive dynamics in comparison with the crisis year 2020 allowed making an optimistic forecast about the future social capital of the region's residents. Having survived the first year of the pandemic, in 2021 the Vologda Oblast population began gradually restoring the lost ties, but at the time of the new study it was not yet able to reach the pre-pandemic indicators. We should note that this fact applies to a greater extent to the residents of large cities.

In the districts, on the contrary, the situation has changed for the better due to both a lower level of social capital decline during the pandemic (compared to large cities) and higher rates of its recovery in the post-ovoid period. In 2021, residents of the Vologda Oblast districts were able to improve their social capital indicators, surpassing even the pre-pandemic 2019 level (see Fig. 4).

Figure 4. Distribution of respondents by level of accumulated social capital in the Vologda Oblast in 2021, % of respondents



Source: VoRC RAS survey data, 2021, N = 1550.

The possibility of restoring relationships with the end of the lockdown situation led to an increase in social capital (see Fig. 3). As it turned out, investments in the form of support for personal connections and relationships matter and cannot be completely replaced by contacts through information channels. The positive dynamics revealed in the indicators for 2021 compared to the crisis year 2020 allows making optimistic forecasts about the future state of social capital possessed by the region's residents.

Conclusions

The results obtained make it possible to draw several conclusions regarding both the research methodology and its outcomes. First of all, it is worth saying that the social capital concept has a significant heuristic potential and helps to build explanatory models. The authors' methodology of constructing the integral index, which is the basis for its measurement, has been repeatedly tested in the course of a number of studies and confirmed its validity. The integral index of social capital reveals wide opportunities not only to measure social capital as a latent variable, but also to identify its interrelations with other objects of the social continuum. It is important to understand that in addition to the interpretation of the obtained index value, its changes over time and fluctuations depending on the socio-political and economic events taking place in society are analyzed. This opens up the possibility of making various forecasts, which is one of the most important functions of science.

The analytical data obtained on the basis of the integral index construction methodology allow assessing the state of social capital of the regional community, and determining its characteristic features. Such characteristics as territoriality, uneven distribution and dependence on the type of settlement are fully manifested. Each settlement is a local community, and it is in such local communities, where social capital in the form of ties and relations is first formed and then realized, that differences in the structure of the population by the level of accumulation of social capital are found. This is largely due to the opportunities available in the place of residence for the inclusion of actors in networks of relations, as well as in the activities of various public organizations, i.e. with the development of civil society structures in a particular territory.

The data collected during the observation period lead to the conclusion that there are quite stable groups in the territorial community, differed in the level of accumulated social capital. This indicates the formation of a certain structural organization of the local community. Differences between groups with various amounts of social capital are, first of all, differences in the available ties and relations that allow an individual to turn to the group's resources to solve their own or the group's tasks or to become a source of resources for the participants of their network. We see variations in access to benefits, but social capital is not a private good, it is classified as a public good, which makes it a rather flexible criterion.

The structural characteristic of the territorial community, revealed on the basis of the social capital index, is a dynamic formation. The boundaries of the identified groups are poorly structured and subject to change under the influence of environmental factors. Nevertheless, the observation covering the period from 2016 to 2020 shows the presence of quite stable groups of social capital holders in terms of the share of respondents included in them. The fixed changes do not lead to the disappearance of the group as such. Fluctuations take place both in the direction of increasing the number of identified groups and in the direction of their decrease, while maintaining

a certain number of members. The dynamism was particularly pronounced during the pandemic. The observed dynamics serves as evidence of both a certain stability of groups and their variability under the influence of significant external factors. The very factor of the dynamics of indicators allows talking about a possible managerial impact on the process of formation of social capital.

References

Afanasiev D.V., Guzhavina T.A., Mekhova A.A. (2016). Social capital in a region: Revisiting the measurement and building of an indicator model. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 6, 110–125. DOI: 10.15838/esc/2016.6.48.6 (in Russian).

Becker G.S. (1964). *Human Capital*. New York: Columbia University Press.

Bourdieu P. (1985). The forms of capital. In: Richardson J.G. (Ed.). *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood.

Buzgalin A.V. (2011). The social capital: Glue of geksogen of the late capitalism? *Obshchestvennye nauki i sovremennost'=Social Sciences and Contemporary World*, 3, 147–161 (in Russian).

Callois J.-M., Schmitt B. (2009). The role of social capital components on local eco-nomic growth: Local cohesion and openness in French rural areas. *Review of Agricultural and Environmental Studies*, 90(3), 257–286.

Chernysh M.F. (2019). Problematization of the social: Social structure research and Russian sociology. *Rossiya reformiruyushchayasya*, 17, 48–60 (in Russian).

Coleman J. (1993). *The Foundations of Social Theory. Cambridge, MA: Belknap of Harvard UP.*

Guzhavina T.A. (2016). Regional social capital as a modernization factor. *Problemy razvitiya territorii=Problems of Territory's Development,* 1(81), 130–144 (in Russian).

Guzhavina T.A. (2018). Habitus of confidence and identity. *Vestnik Erevanskogo universiteta. Sotsiologiya, ekonomika=Bulletin of Yerevan University. Sociology, Economics*, 1(25), 39–46 (in Russian).

Guzhavina T.A., Afanasiev D.V., Kosygina K.E. et al. (2022). *Kollektivnye deistviya i sotsial'nyi kapital v rossiiskom obshchestve: monografiya* [Collective Action and Social Capital in Russian Society: Monograph]. Vologda: Vologda Research Center of RAS.

Guzhavina T.A., Afanasiev D.V., Vorob'eva I.N. et al. (2018). *Regional'nyi sotsial'nyi kapital v usloviyakh krizisa: monografiya* [Regional Social Capital in Crisis Conditions: Monograph]. Cherepovets: ChGU.

Ostrom E. (2000). Social capital: Fad or a fundamental concept? In: Dasgupta P., Serageldin I. (Eds.). *Social Capital, a Multifaceted Perspective*. Washington, DC: The World Bank.

Panebianco S. (2013). The impact of social capital on regional economic development. In: *ACSP Congress – Lovanio*. Germany: Universität Kassel Publ.

Pichler F., Wallace C. (2007). Patterns of formal and informal social capital in Europe. *European Sociological Review,* 23(4), 423–435.

Polishchuk L., Menyashev R. (2011). Economic significance of social capital. *Voprosy ekonomiki*, 12, 46–65 (in Russian).

Putnam R., Helliwell J. (1995). Economic growth and social capital in Italy. *Eastern Economic Journal,* 21(3), 295–307.

Putnam R.D., Leonardi R., Nanetti R.Y. (1993). *Making Democracy Work: Civic Tradition in Modern Italy*. Princeton: Princeton University Press.

Rozhkov G.V. (2009). *Genezis innovatsionnoi ekonomiki v Rossii* [Genesis of Innovation Economy in Russia]. Moscow: MAKS Press.

Sztompka P. (1991). *Society and Action: The Theory of Social Becoming.* Cambridge: Polity Press.

Tocqueville A. de (1992). *Demokratiya v Amerike* [Democracy in America]. Moscow: Progress.

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Current Problems of Cooperation between Russian and Belarusian Enterprises: Region's View

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Abstract. Under the unfavorable geopolitical situation, strengthening bilateral cooperation between Russia and the Republic of Belarus is of particular relevance. Currently, Russia is Belarus' key trade partner. Despite serious challenges, sanctions and restrictions, Russian and Belarusian enterprises continue developing cooperation in almost all sectors of the national economy and achieving results. According to the results of the first 11 months of 2022, the historically maximum volume of mutual turnover of goods and services – 45 billion U.S. dollars – has been achieved. Analytical data and expert assessments show that the current environment makes it possible to intensify bilateral cooperation between enterprises of the two countries and bring it to a new level. On the other hand, as experts note, the existing situation may become a source of problems that hinder the potential of such cooperation. This condition determines the topic relevance and the purpose of the work. The research aims to identify the barriers to cooperation between the enterprises of Russia and the Republic of Belarus and develop proposals for their elimination. In order to achieve this goal, we have developed a toolkit, which was used to conduct an expert survey (in-depth interview method) of managers of enterprises of Russia's region (the Vologda Oblast), cooperating with counterparties from the Republic of Belarus. We carried out the selection of the expert group by means of the documentary method. The heads of six enterprises of the region, whose activities correlate with the structure of the volume of foreign trade turnover between the Vologda Oblast and the Republic of Belarus, took part in the survey. Approbation of the developed toolkit allows identifying certain problems arising in the course of bilateral cooperation: the problem of value added tax refund in the framework of foreign trade operations, the presence of customs restrictions, including on special-purpose products, the negative effects of economic sanctions and others.

Key words: Russia, Belarus, entrepreneurial sector, enterprise, problems, prospects, development, innovations, scientific and technological potential, interview.

Introduction

Since the collapse of the Soviet Union, its former constituent republics began searching for various forms of partnership on mutually beneficial terms. This made it possible to establish the Commonwealth of Independent States (CIS), a free trade zone. In addition, work was launched on the creation of integration projects in the socio-economic sphere[1].

Relations between Russia and Belarus began occupying a special place among the interactions in the CIS format. The most important event in the framework of strengthening bilateral partnership was the signing of the Treaty on the Establishment of the Union State (December 8, 1999)[2]. The main objectives of the creation of the Union State were to ensure democratic development, strengthen friendship, and improve the quality of life. Moreover, there is a need to create a single economic space based on the integration of the material and intellectual potentials of the participating countries[3].

The development of scientific and industrial relations is becoming one of the most significant components of the strategic partnership between

[1] The Union State: History of joint development. Available at: https://xn--c1anggbdpdf.xn--p1ai/history/20years_of_union_state/page726227.html (accessed: March 27, 2023).

[2] Belarus and Russia: Building the future together. Available at: http://www.loevkraj.by/ (accessed: March 27, 2023).

[3] The Union State: History of joint development. Available at: https://xn--c1anggbdpdf.xn--p1ai/history/20years_of_union_state/page726227.html (accessed: March 27, 2023).

Russia and the Republic of Belarus (RB). The basis for the formation of the common scientific and technological space of the Union State is the Union Programs (UP)[4] (Vityaz, 2017).

The first UPs were developed more than twenty years ago. Regulated by a number of agreements between Russia and Belarus, they appeared even before the formation of the Union State as such[5] (Vaganova, 2017; Dugova, 2017; Davydenko, Litvinyuk, 2022; Sotnikov, 2022). As relations developed within the framework of supranational formation, new programs were created (Shurubovich, 2019; Rauter et al., 2019). Since 2000, 57 programs of the Union State have been implemented to develop new technologies and create innovative products. In addition, in the fall of 2021, 28 UPs were published concerning the further deepening of integration processes[6].

The issues and directions of economic integration of Russia and the Republic of Belarus are not limited to the Union Programs alone. Tatiana Runets, Chairman of the Standing Committee of the Council of the Republic on Economy, Budget and Finance, noted: "Under the conditions of sanctions pressure, the key prerequisite for the integration of our countries is the expansion of industrial cooperation and the implementation of joint projects in the real sector of the economy. Trade cooperation is sometimes vulnerable, and joint business will make the integration process irreversible"[7].

Along with the creation of the Union State, the most important instruments for strengthening integration processes that stimulate cooperation between Belarusian and Russian economic entities were the Customs Union and the Eurasian Economic Union[8]. The development of integration processes in various formats has led to a significant increase in the volume of mutual trade, the indicators of which have more than tripled over the past 20 years. According to the National Statistical Committee of the Republic of Belarus (Belstat), the trade turnover of the two countries in 2021 increased by about 35% compared to the previous year. According to the results of 11 months of 2022, the historically maximum volume of mutual turnover of goods and services in the amount of 45 billion U.S. dollars has been reached[9].

Against the background of changing geopolitical conditions, Russia and Belarus are joining efforts to resist the existing restrictions and are actively working to minimize their consequences. Bilateral projects are being implemented in the field of import substitution, ensuring the smooth operation of financial and commodity markets, and the formation of new production chains[10].

Since enterprises and organizations are key actors in the framework of international economic cooperation, this study is aimed at identifying current problems and determining prospects arising in the course of cooperation between enterprises of the Russian Federation and the Republic of Belarus. To achieve this goal, it is necessary to solve a number of tasks.

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[4] Meeting of the Bureau of the Inter-Academic Council of RAS and NAS of Belarus. Available at: https://www.youtube.com/watch?v=VoYK79D64X0

[5] Joint Statement by the Prime Minister of the Russian Federation and the Prime Minister of the Republic of Belarus on the current development and further steps to deepen integration processes within the union state. Available at: http://government.ru/news/43234/ (accessed: March 27, 2023).

[6] Ibidem.

[7] Tatiana Runets: Time requires prompt decisions to strengthen the economy of the Union State. Available at: https://rg.ru/2022/05/04/tatiana-runec-vremia-trebuet-operativnyh-reshenij-dlia-ukrepleniia-ekonomiki-soiuznogo-gosudarstva.html (accessed: January 30, 2023).

[8] Bordachev T.V., Vishnevskii K.O., Glazatova M.K. et al. (2019). Eurasian economic integration: Development prospects and strategic challenges for Russia: In: *Report to the 20th April International Scientific Conference on the Problems of Development of Economy and Society, Moscow, 9–12 April 2019.* Moscow: Izd. dom Vysshei shkoly ekonomiki.

[9] Belarus has for the first time reached a trade surplus with Russia. Available at: https://www.interfax.ru/business/880473 (accessed: January 30, 2023).

[10] Import substitution in Belarus at the expense of the Russian loan will start in 2022. Available at: https://tass.ru/ekonomika/16498395 (accessed: January 30, 2023).

1. To characterize the drivers, methods and instruments of foreign trade; to highlight the features of their implementation within the framework of bilateral cooperation between Russia and Belarus.

2. To analyze the dynamics of statistical indicators characterizing trade and economic cooperation between the Russian Federation and the Republic of Belarus.

3. To develop tools to identify problems of interaction between Russian and Belarusian enterprises.

4. To test the developed tools (using the example of the Vologda Oblast enterprises interacting with contractors from Belarus).

5. To propose solutions to the identified problems, taking into account the positions of heads of enterprises.

The scientific novelty of the research consists in the development and testing of tools that allow identifying problems and prospects of bilateral cooperation between enterprises of Russia and the Republic of Belarus at the regional level. The practical significance lies in the fact that the results obtained (identified problems of bilateral cooperation and ways to solve them) can be useful not only to representatives of federal, regional and local authorities whose competence includes issues of international cooperation, but also to heads of enterprises that interact (or plan to start interacting) with partners within the framework of their activities from Belarus.

Literature review

The history of the development of Russian-Belarusian state relations is the subject of a number of scientific papers. For example, the study (Nemensky, 2016) touches on the aspect of economic relations between the two countries and domestic political discussions in Belarus on foreign policy in the eastern direction. Special attention is paid to the project of the Union State, the problems of the participation of the Republic of Belarus in integration projects with Russia.

The analysis of the formation of Russian-Belarusian cooperation demonstrates that both countries have always benefited from the partnership and mutual benefit, and "the integration process, which has already been extended to the economic sphere, can be considered natural" (Kurakina, Barshova, 2020).

F. Yusupov (Yusupov, 2013) believes that at the regional level, economic partnership is organized in the format of international integration blocks. In the CIS space, taking into account the development of international economic cooperation processes, subregional blocks have also begun forming. A good example of this is the Union State.

According to S.V. Moleva (Moleva, 2012), one of the most important areas of economic cooperation within the framework of the Union State can be considered the development of cooperation between Russia and Belarus in the trade and economic sphere. Within the framework of the study (Koloda et al., 2019), issues related to the foreign economic relations of the two states are analyzed in more detail. It was noted that Belarus is a strategic trading partner of the Russian Federation.

To date, the Union State has a complex of joint organizations and enterprises, economic and scientific and technical programs are being implemented (Kurakina, Barshova, 2020). Nevertheless, foreign trade is considered to be the most developed form of economic relations between Russia and Belarus.

According to some estimates, trade accounts for about 80% of the total volume of international economic relations (IER). International trade defines most types of international cooperation[11] (Bems et al., 2013; Boddewyn, 2016; Evenett, 2019; Gumbrell-McCormick, 2013; Mutz et al., 2017).

[11] International trade and its benefits. Available at: https://www.bibliofond.ru/view.aspx?id=512277 (accessed: June 1, 2023).

We should note that a unified approach to the essence of international trade and economic activity has not been formed at the moment in both foreign and Russian economic literature. Most researchers define such activities at the country level, and their characteristics are united by the general trend of implementing IER across state borders. International trade and economic activity at the regional level represents the economic relations of economic entities of a particular region of the country with economic entities of other regions of the world (Xu, 2021).

Success in achieving the guidelines of interaction largely depends on the effectiveness of the use of the theoretical foundations and world practice of international trade and economic cooperation (factors that determine its development, conditions, forms and methods). Both Russian (Malakhova, 2021; Rodygina, Bessonova, 2018; Umgaev et al., 2019) and foreign scientists (Gumbrell-McCormick, 2013) devoted their works to the study of factors promoting international trade and economic cooperation.

S. Xu (Xu, 2021) identifies the following factors promoting the development of international trade and economic cooperation: scientific and technological progress, global problems (for example, food, environmental, etc.), as well as the heterogeneity of the development of regions of the world. As the author rightly notes, the improvement of production technologies stimulates the exchange of resources, and the presence of global problems is almost always concentrated within the international environment.

At the same time, in addition to the factors contributing to the development of international trade and economic cooperation, it is necessary to highlight the negative factors of inhibition of this process: economic and political conflicts between countries and regions of the world, underdevelopment of market infrastructure in individual countries, etc. (Malakhova, 2021; Xu, 2021).

Factors promoting international trade and economic cooperation determine the forms and methods of international trade (Evenett, 2019; Efimenko, 2020). Among the key forms of international trade, it is possible to specify trade in finished products, trade in commodities, trade in intellectual property, counter and exchange trading. The characteristics of each form of the IER will reveal their specifics and subspecies (*Tab. 1*).

Thus, there are various forms of international trade. They mainly depend on the subject and nature of foreign trade operations. Most often they are classified according to two criteria: the subject of trade and the way of organizing relationships between partners. When analyzing the forms of international trade, it is possible to describe in detail the volume and structure of trade of an individual country or group of countries, as well as the world as a whole. Since each of them has its advantages and disadvantages, it is possible to identify which of them is most beneficial for the importer or exporter in certain trade relationships.

To date, there are various methods of international trade. Their main goal remains unchanged – the exchange of goods on mutually beneficial terms. The most well-known methods of international trade are export-import operations (Mutz, 2017; Kovaleva, 2020).

The theoretical foundations and world practice of international trade and economic cooperation in the context of this study will be considered taking into account the needs and capabilities of the Russian Federation and the Republic of Belarus.

Apart from political and economic factors, geographical, linguistic and cultural factors had a special impact on the development of trade and economic cooperation between Russia and Belarus. Russia and Belarus are border countries. Moreover, they are united by a commonality of traditions, culture, language, and mutually oriented economy (Kovaleva, 2020).

Table 1. Characteristics of international trade forms

International trade form	Characteristic/Description
Final products trading	It is carried out directly between exporters and importers, as well as through intermediaries: consignees, distributors, etc. It is important to emphasize that the final products are intended for ultimate consumption. Final products include a part of the nomenclature of machine-building production, electronics, electricity, etc. The higher the degree of processing of final products, the higher its competitive qualities.
Raw commodities trading	It is considered a traditional form of international trade and accounts for more than 20% of the commodity structure of world exports. At the same time, mineral raw materials account for more than 12%, and agricultural raw materials and food – almost 9%. We should note that there is a significant gap between producers and consumers, which determines the increasing role of world markets in the redistribution of resources.
Intellectual property trading	In this case, intellectual property objects in the form of patents, trademarks, know-how, etc. will act as goods, and the rights to use them will be the subject of international transactions. The results of intellectual activity are equated to the number of expensive assets in commercial transactions. The price of some famous brands can reach several billion dollars. For example, in 2017, the top ten best and most expensive brands included Apple – 184.154 billion U.S. dollars, Google – 141.703 billion U.S. dollars, Microsoft – 79.999 billion U.S. dollars, Samsung – 56.249 billion U.S. dollars, IBM – 46.829 billion U.S. dollars, and Microsoft – 12.829 billion U.S. dollars.
Countertrade	It implies transactions in which one party supplies products or services to the other, and the counterparty, in turn, sells its products or technologies to the partner. Thus, there is a mutual linking of the movement of goods in both directions.
Exchange trade	It presents organized trade in commodities, currency, securities, etc. through the intermediation of exchanges. Transactions on the exchange are executed without preliminary inspection, usually on lots of goods of a certain (basic) grade. In exchange trading, only about 10% of the traded goods are real goods, the remaining 90% are futures.

Source: own compilation using the method of content analysis by: Regulation of international trade in commodities. Available at: https://interaffairs.ru/jauthor/material/546 (accessed: March 29, 2023); International trade in intellectual property. Available at: https://science-forum.ru/2018/article/2018007416#:~:text (accessed: March 29, 2023); Counter trade and its features. Available at: https://vvs-info.ru/helpful_information/poleznaya-informatsiya/vstrechnaya-torgovlya/ (accessed: March 29, 2023); What is stock trading? Description and definition of the concept. Available at: https://biznes-prost.ru/birzhevaya-torgovlya.html (accessed: March 29, 2023).

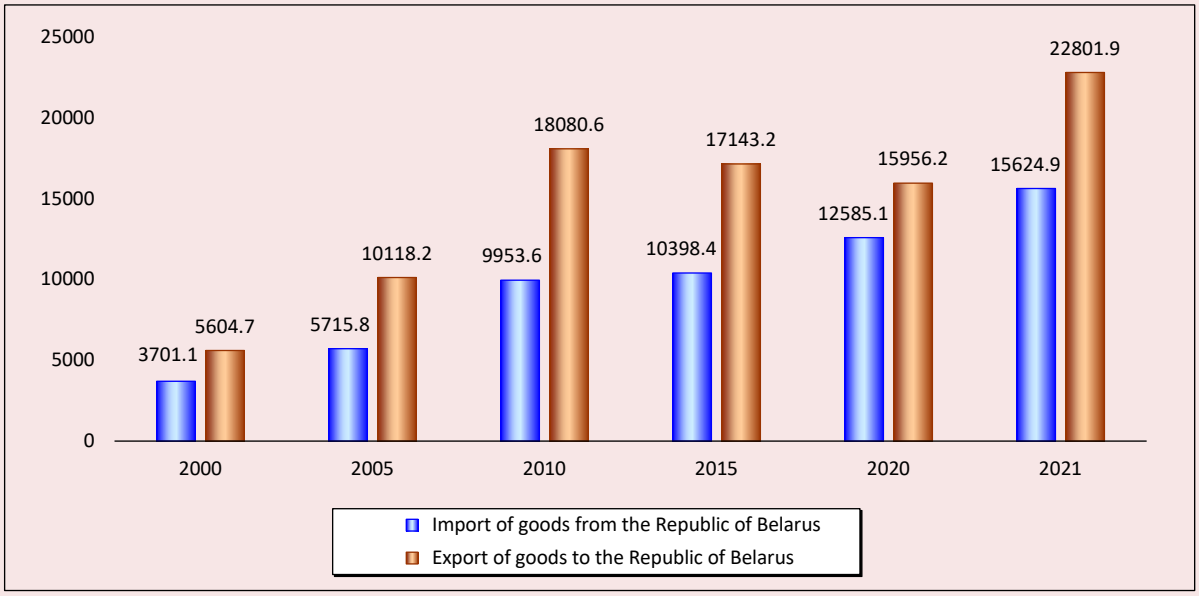
It is important to note that in the framework of the Union State all the forms of international trade discussed above are developed, but there are territorial specifics: when exporting from Russia to the Republic of Belarus the most common form is trade in raw materials, while when importing from Belarus to Russia it is trade in finished products and disassembled products. The "privileged" trade regime allows the Russian Federation to receive the necessary goods from the Republic of Belarus at reasonable prices: trucks, agricultural machinery (including tractors), household appliances, etc. The opportunity to buy Russian energy carriers (primarily natural gas) at preferential prices is of great importance for Belarus[12].

It is also worth noting that within the framework of cooperation between Russia and Belarus, the main methods of international trade (export-import operations) are being implemented. Traditionally, the Russian Federation is the main trading partner of the Republic of Belarus, as well as the largest export market for Belarusian producers (Ibraeva, Dzhunusheva, 2020; Filkevich, 2018). Russia's share in Belarus' trade turnover is consistently about 50%. The Republic of Belarus remains an important trading partner of the Russian Federation, ranking 4th in terms of trade turnover between Russia and the countries of the world and 1st in the CIS. This makes it necessary to maintain a close relationship and cooperation between the two strategic partners[13].

[12] Regional cooperation between Russia and Belarus within the EAEU framework. Available at: https://russiancouncil.ru/analytics-and-comments/analytics/regionalnoe-sotrudnichestvo-rossii-i-belorussii-v-ramkakh-eaes/ (accessed: April 13, 2023).

[13] Russia – Belarus 2022. Economy: What will be tomorrow? Available at: https://corp.wtcmoscow.ru/services/international-partnership/analitycs/rossiya-belorussiya-2022-ekonomika-chto-zavtra/ (accessed: March 29, 2023).

Figure 1. Dynamics of foreign trade turnover of the Russian Federation and the Republic of Belarus for the period from 2000 to 2020, million U.S. dollars



Source: Foreign trade of the Republic of Belarus – 2021: Statistical collection. Available at: https://www.belstat.gov.by/upload/iblock/c4c/n6k9xzdx6umpg61f8whfybttkcvl4t5t.pdf (accessed: January 25, 2023); Foreign trade of the Republic of Belarus – 2018: Statistical compendium. Available at: https://www.belstat.gov.by/upload/iblock/b5e/b5eeb063dcad3c19ec3f27d642270471.pdf (accessed: January 25, 2023); Customs statistics 2020, 2021. Available at: http://stat.customs.gov.ru/analysis (accessed: January 25, 2023).

Since the formation of the Union State, the foreign trade turnover of the Russian Federation and the Republic of Belarus has been characterized by growth (*Fig. 1*). The export of Russian goods to Belarus over the period from 2010 to 2021 increased by more than four times. Throughout the entire observation period, there has also been a steady increase in imports of goods from the Republic of Belarus to Russia. The value of the trade balance for each year of observation presented has positive values: in 2021 it amounted to 7,177 million U.S. dollars, which is 73.5% more than in 2000.

Separately, we would like to focus on the indicators of foreign trade between Russia and Belarus in 2021 and 2022. It is especially important from the perspective of unfavorable economic conditions and high geopolitical risks caused by the consequences of the COVID-19 pandemic, as well as the introduction of economic sanctions by a number of foreign countries.

According to official data of the Federal Customs Service of the Russian Federation, in 2021 the import of Belarusian goods to the Russian market amounted to 15624.9 million U.S. dollars, which is almost 20% higher than in the previous year[14]. Moreover, according to the Ministry of Foreign Affairs of the Republic of Belarus, in 2021, 31 new commodity items in the amount of 0.6 million U.S. dollars appeared in the structure of imports of goods, for which no deliveries to Russia were carried out in 2020[15].

[14] Customs statistics 2020, 2021. Available at: http://stat.customs.gov.ru/analysis (accessed: January 25, 2023).

[15] On the results of Belarus' foreign trade with Russia in 2021. Available at: https://russia.mfa.gov.by/ru/bilateral_relations/trade/ (accessed: January 25, 2023).

Probably, the growth of foreign trade turnover in 2021 within the framework of the Union State is ensured by the fact that enterprises of Russia and Belarus have successfully cooperated in the implementation of projects to combat the COVID-19 pandemic[16].

It is also important to note that against the background of the imposed sanctions, Russia and Belarus are joining efforts to minimize their effects. In January – February 2022, the countries managed to maintain positive dynamics in the field of trade and economic cooperation. Bilateral trade increased by 29.2% and reached 6500 million U.S. dollars. Russian exports amounted to 3900 million U.S. dollars, Belarusian imports – 2600 million U.S. dollars[17].

Nevertheless, with all the indisputable achievements in the development of the Union State, there are serious shortcomings. As noted in the text of the analytical report "Russian-Belarusian cooperation: Time for strategic decisions", prepared by experts of the A.A. Gromyko Association for Foreign Policy Studies in 2021, modernization of economic and political institutions is required to increase the stability and competitiveness of the Union State, strengthen Russian-Belarusian ties. The Union State is in dire need of a common industrial strategy and industrial policy[18].

In addition, the most important problem of the Union State is the lack of a single legal space (Zaitov, 2021). According to the researcher, it is necessary to pay special attention to the formation of a unified legal field and unification of legislation.

These and some other problems may cause barriers to the development of cooperation between enterprises of Russia and the Republic of Belarus.

Research methodology

The paper uses the methodology of system analysis using quantitative and qualitative methods of socio-economic research. Separately, we would like to note the use of the sociological method (interviewing). With its help, a survey was conducted of the heads of the Vologda Oblast enterprises cooperating with partners from the Republic of Belarus.

The information base includes scientific articles, monographs, regulatory documents, as well as information and analytical materials published on Internet resources. In order to substantiate the relevance and more complete disclosure of the research issues, information from the following organizations was used as information sources: the Russian Export Center, the Federal Customs Service, Rosstat, Belstat.

Characteristics of the research tools. In order to identify the features and problems within the framework of bilateral cooperation, an expert interview was conducted with representatives of organizations of the Vologda Oblast that cooperate with partners from the Republic of Belarus. A guide was developed for interviewing. Conventionally, all the questions included in the guide can be divided into three blocks (*Tab. 2*):

– certain aspects of cooperation between Russian enterprises and organizations from the Republic of Belarus: features, directions, advantages, plans, etc. (questions 1–5, 7, 8, 10);

– cooperation in the implementation of innovative projects (question 9);

– problems of cooperation (questions 6, 11).

[16] Joint Statement by the Ministers of Foreign Affairs of Belarus and Russia on the occasion of the 30th anniversary of diplomatic relations between the two countries. Available at: https://mfa.gov.by/press/news_mfa/b4996791161153f5.html (accessed: January 25, 2023).

[17] Russia – Belarus 2022. Economy: What will be tomorrow? Available at: https://corp.wtcmoscow.ru/services/international-partnership/analitycs/rossiya-belorussiya-2022-ekonomika-chto-zavtra/ (accessed: January 25, 2023).

[18] Russian-Belarusian Cooperation: Time for strategic decisions: Analytical report. A.A. Gromyko Association for Foreign Policy Studies. Available at: https://www.instituteofeurope.ru/images/news/092021/gromyko2021-2.pdf (accessed: January 27, 2023).

Table 2. List of questions included in the guide

No.	Question wording
1	Since what year does your company cooperate with Belarusian partners?
2	In what areas do you cooperate with colleagues from the Republic of Belarus?
3	What was the reason you started working with them?
4	What are the main features of cooperation with Belarusian enterprises?
5	What advantages does this cooperation bring to you?
6	What are the challenges of cooperation? What are they related to?
7	How have the conditions of cooperation changed over the last 3 years (improved, worsened, not changed)?
8	What are your future plans for cooperation with Belarusian partners? What projects would you like to implement?
9	Are you ready to develop cooperation with the Republic of Belarus in the field of innovation? What will you need for this and what opportunities do you have for this?
10	Can you tell us how many years (1–3–5) ahead you see your company's development prospects? What are your main advantages that can help you realize your strategic objectives for the indicated period of time?
11	Would you name three major problems for your business personally, the solution to which would allow significantly improving efficiency and depends on: - local authorities; - regional authorities; - federal authorities.

Table 3. List of the Vologda Oblast enterprises for conducting interviews

Name of organization	Main type of activity (in accordance with the Russian National Classifier of Types of Economic Activity, OKVED)	City, address	Name of expert
AO Cherepovets Casting and Mechanical Plant	Manufacture of machinery and equipment for metallurgy (28.91)	Cherepovets, Stroyindustriya Street, 12	Vladimir N. Boglaev
AO Vologda Optical and Mechanical Plant	Manufacture of arms and ammunition (25.40)	Vologda, Maltsev Street, 54	Aleksei V.Grigor'ev
AO Cherepovetsles	Activities of holding companies (64.20)	Cherepovets, Lenin Street, 80	Valerii N. Pisarev
OOO Voltri	Production of folk arts and crafts (32.99.8)	Vologda, Kozlenskaya Street, 45A	Ol'ga V.Chashnikova
AO Russkii biskvit	Manufacture of breadcrumbs, cookies and other dry bakery products, manufacture of flour confectionery products, cakes, pies, pastries and cookies intended for long-term storage (10.72)	Cherepovets, K. Marx Street, 25	Andrei Yu. Gubarev
OOO Trading House Russkii chai	Manufacture of tea and coffee (10.83)	Cherepovets, Belinsky Street, 4, building 3	Igor' O. Bogdanov
Source: Cloud-based system for business process automation "SBIS". Available at: https://sbis.ru/ (accessed: November 1, 2022).			

We carried out the selection of the expert group using the documentary method in accordance with the structure of the export of goods produced in the Vologda Oblast to the Republic of Belarus, as well as the import of goods from Belarus to the Vologda Oblast.

Table 3 gives a more detailed description of the enterprises.

Results and discussion

A special place in foreign trade with the Republic of Belarus is occupied by the regions that are part of the Northwestern Federal District (NWFD). This is partly due to their economic and geographical location (the presence of a common border). In addition, the specifics and economic purpose of the goods supplied from the

Northwestern Federal District to the Republic of Belarus are important from the position of strengthening foreign economic relations.

The regions of the Northwestern Federal District are the most important suppliers to the Republic of Belarus of alloy steel and products made from it (Vologda Oblast), as well as passenger cars, which are assembled at the enterprises Avtotor (Kaliningrad Oblast), Hyundai Motor Manufacturing Rus (Saint Petersburg) and a number of others. In addition, bearings and optical equipment (Vologda Oblast, Saint Petersburg), textiles (Vologda, Pskov, Novgorod oblasts), phosphorus and nitrogen fertilizers (Vologda Oblast), oil and petroleum products (Komi Republic), etc. are exported.

Dairy products, meat, fish, sugar, tractors and long-haul trucks, trucks, passenger cars, automobile tires, furniture, refrigerators, freezers, gas and electric stoves predominate among the import positions of the NWFD regions from Belarus.

Table 4. Dynamics of exports and imports of goods between the regions of the Northwestern Federal District and the Republic of Belarus for the period from 2000 to 2021

Import of goods from the Republic of Belarus to the regions of the Northwestern Federal District (million U.S. dollars)							
	2000	2005	2010	2015	2020	2021	2021/ 2000 (times)
Russian Federation	3701.1	5715.8	9953.6	10398.4	12585.07	15624.92	4.22
NWFD	433.7	804.3	1289.2	1442.1	1474.96	1870.37	4.31
Arkhangelsk Oblast	4.5	12.2	26.1	26.7	10.83	8.08	1.80
Vologda Oblast	9.9	72.9	56	104.7	87.27	123.42	12.47
Saint Petersburg	258.6	470.5	828.2	854.5	825.65	1025.19	3.96
Kaliningrad Oblast	58.2	71.0	75.5	93.1	342.78	474.35	8.15
Leningrad Oblast	25.1	54.4	134.7	195.5	95.01	128.85	5.13
Murmansk Oblast	17.4	9.9	32.8	19.3	5.59	4.73	0.27
Novgorod Oblast	13	49.6	45.1	56.2	23.66	21.43	1.65
Pskov Oblast	16.9	35.2	60.6	66	64.44	38.98	2.31
Republic of Karelia	9	16.8	19.8	15.8	17.78	40.98	4.55
Komi Republic	21.1	11.8	10.4	10.3	1.96	4.36	0.21
Export of goods to the Republic of Belarus from the NWFD regions (million U.S. dollars)							
	2000	2005	2010	2015	2020	2021	2021/ 2000 (times)
Russian Federation	5604.7	10118.2	18080.6	17143.2	15956.22	22801.93	4.07
NWFD	390.4	766.7	1571.5	1336.8	1909.95	2679.64	6.86
Arkhangelsk Oblast	8.6	6.5	64.9	20.9	17.46	24.60	2.86
Vologda Oblast	36.7	184.9	323.9	165.2	280.38	402.42	10.97
Saint Petersburg	192.4	266	440.8	546.6	1130.08	1555.35	8.08
Kaliningrad Oblast	44.1	56.7	40.5	117.5	146.18	259.03	5.87
Leningrad Oblast	24	100.7	188	235.5	193.82	270.28	11.26
Murmansk Oblast	24	30.8	97.4	35.4	0.60	0.73	0.03
Novgorod Oblast	19.7	39.2	65	41.2	33.45	40.77	2.07
Pskov Oblast	21.1	29.3	73.1	35.9	88.41	89.83	4.26
Republic of Karelia	5.6	10.9	13.5	4.6	5.01	19.24	3.44
Komi Republic	14.2	41.7	264.4	134	14.56	17.39	1.22

Source: Foreign trade of the Republic of Belarus – 2021: Statistical collection. Available at: https://www.belstat.gov.by/upload/iblock/c4c/n6k9xzdx6umpg61f8whfybttkcvl4t5t.pdf (accessed: April 25, 2023); Foreign trade of the Republic of Belarus – 2018: Statistical collection. Available at: https://www.belstat.gov.by/upload/iblock/b5e/b5eeb063dcad3c19ec3f27d642270471.pdf (accessed: April 25, 2023); Customs statistics 2020, 2021. Available at: http://stat.customs.gov.ru/analysis (accessed: May 1, 2023); Trade between Russia and Belarus in 2021. Russia's foreign trade. Available at: https://russian-trade.com/reports-and-reviews/2022-02/torgovlya-mezhdu-rossiey-i-belarusyu-v-2021-g/ (accessed: May 1, 2023); Trade between Russia and Belarus in 2020. Available at: https://russian-trade.com/reports-and-reviews/2021-02/torgovlya-mezhdu-rossiey-i-belarusyu-v-2020-g/ (accessed: April 25, 2023).

The dynamics of indicators characterizing the foreign trade turnover of the regions of the Northwestern Federal District and the Republic of Belarus for the period from 2000 to 2021 shows a significant increase (imports of goods from the Republic of Belarus to the regions of the Northwestern Federal District increased 4.2 times, and exports of goods to the Republic of Belarus from the regions of the Northwestern Federal District – almost 4.1 times; *Tab. 4*). However, we should pay attention that for most of the years under consideration, the trade balance for the NWFD as a whole is negative. Obviously, this is due to the "raw material" specifics of exports from the Northwestern Federal District to Belarus (mainly the so-called "first processing" products are transported). At the same time, products with high added value are imported from Belarus to the Russian Federation.

Let us analyze in more detail the development of cooperation between economic entities with counterparties from the Republic of Belarus on the example of the Vologda Oblast. The joint work of the Vologda Oblast and the Republic of Belarus on foreign trade issues is carried out within the framework of the Agreement between the Government of the Vologda Oblast and the Government of the Republic of Belarus on trade, economic, scientific, technical and cultural cooperation of 2006[19].

The Vologda Oblast and the Republic of Belarus are similar in the structure of industrial production. Both in the Vologda Oblast and in Belarus, ferrous metallurgy, chemical production (primarily mineral fertilizers), animal husbandry, forestry, etc. are developed. And this indicates that the problems resulting from the activities of industrial enterprises can be considered common for the Vologda Oblast and the Republic of Belarus.

Among the Vologda Oblast enterprises that actively supply their products to Belarus, it is possible to mention PAO Severstal, AO Apatit, AO ChLMZ, AO VBF, AO VOMZ and others. At the same time, the main suppliers from Belarus to the Vologda Oblast are the enterprises MAZ, MTZ.

Figure 2 presents the dynamics exports structure from the Vologda Oblast to the Republic of Belarus and imports.

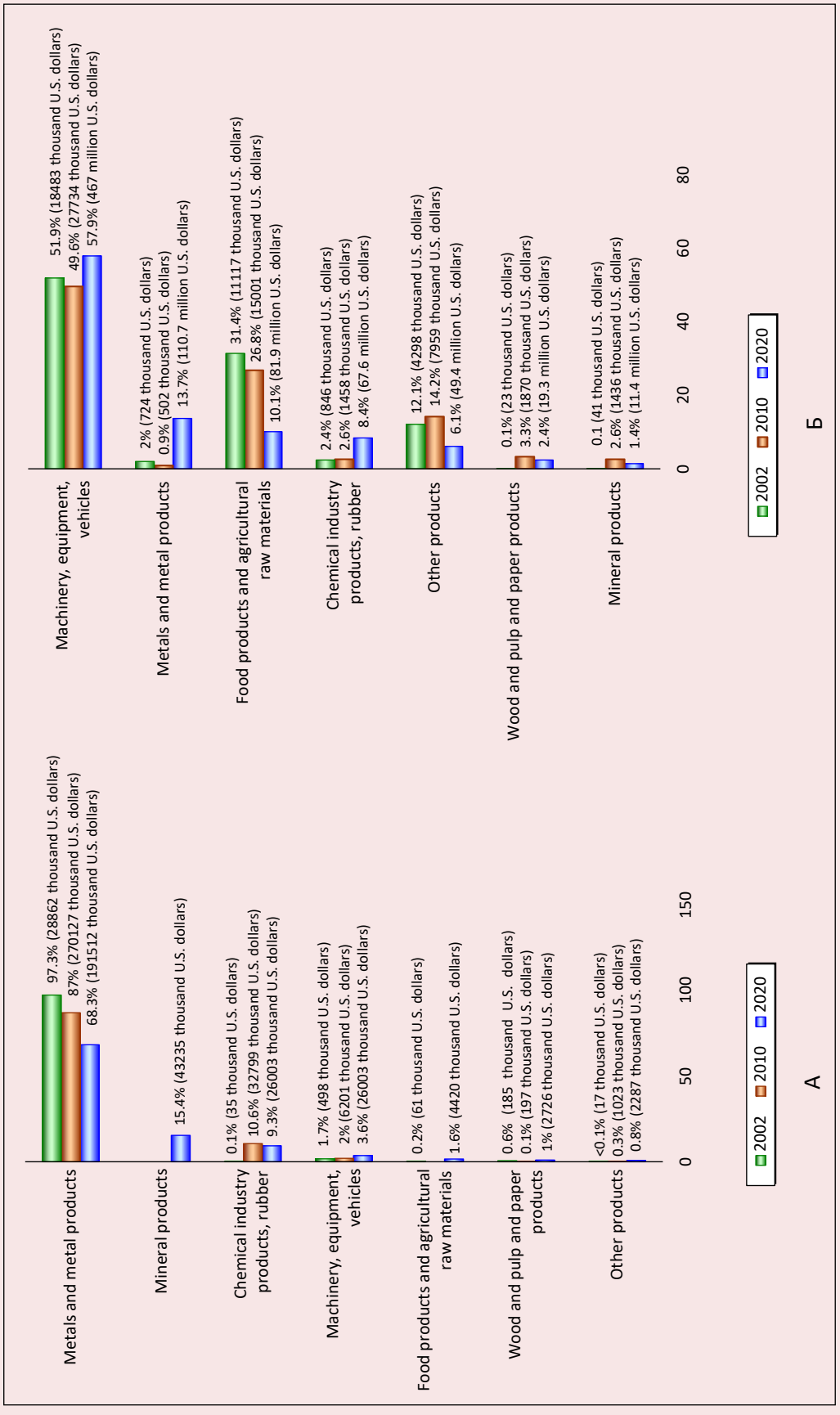
The volume of foreign trade turnover of the Vologda Oblast with the Republic of Belarus has increased by 40.5% since the beginning of 2021. In addition, the import of Belarusian products to the Vologda Oblast showed an increase of 53.4%. The Republic of Belarus ranks first according to the results of the Vologda Oblast's foreign trade in 2020 and third according to the results of the third quarter of 2021. Moreover, the parties have done a lot of work to coordinate the Program for the development of cooperation between the Government of the Vologda Oblast and the Government of the Republic of Belarus for 2021–2025[20]. Within the framework of the program, considerable attention is paid to creating favorable conditions for cooperation between enterprises of Russia and the Republic of Belarus.

At the same time, we should note that the enterprises of the region produce mainly products of the first stages for export to the Republic of Belarus. However, the most promising direction for export should be the products of the upper processing, which Belarus is not fully provided with. This, in turn, will require increasing the innovative potential of enterprises, increasing their level of innovation activity, as well as removing barriers that hinder bilateral cooperation in the field of innovation development.

[19] The Vologda Oblast intends to strengthen trade and economic ties with the Republic of Belarus. Available at: https://www.krassever.ru/news/vologodskaya-oblast-namerena-ukreplyat-torgovo-ekonomicheskiye-svyazi-s-respublikoy-belarus (accessed: January 27, 2023).

[20] The volume of foreign trade turnover of the Vologda Oblast with the Republic of Belarus has increased by 40.5% since the beginning of 2021. Available at: https://vologda-oblast.ru/novosti/novosti_organov_vlasti/obemy_vneshnetorgovogo_oborota_vologodskoy_oblasti_s_respublikoy_belarus_uvelichilis_s_nachala_2021_goda_na_40_5/ (accessed: November 23, 2022).

Figure 2. A – Dynamics of the structure of exports of goods from the Vologda Oblast to the Republic of Belarus (2002–2020);
B – Dynamics of the structure of imports of goods to the Vologda Oblast from the Republic of Belarus (2002–2020)



Source: Development of foreign economic activity in the Vologda Oblast. Vologdastat. Available at: https://vologdastat.gks.ru/ (accessed: January 25, 2023).

To study the prospects, directions and problems of interaction between enterprises of the Vologda Oblast and organizations from the Republic of Belarus, we conducted an in-depth interview with the heads of the region's enterprises.

The period of cooperation of the organizations whose heads took part in the expert interview with partners from the Republic of Belarus is significant. Most of the enterprises have been carrying out bilateral cooperation for more than 10 years (AO Timber Industry Holding Cherepovetsles, OOO Voltri, AO Russkii biskvit, AO Cherepovets Casting and Mechanical Plant, AO VOMZ). At the same time, the general director of OOO Trading House Russkii chai, I.O. Bogdanov, noted that his company had started cooperating with Belarusian colleagues since 2020. The reason probably lies in the fact that this company has been operating on the market only since 2015.

The reasons for starting cooperation are different in each case. For example, as noted by the General Director of AO ChLMZ, V.N. Boglaev, the main reason for cooperation with Belarus was the need for specialists with the necessary knowledge and competencies. For some enterprises, the reason for cooperation was the need for materials and raw materials for the needs of their own enterprise (OOO Voltri, AO Timber Industry Holding Cherepovetsles). The request from Belarusian counterparties for the products of the regionэs enterprises can also be cited as a reason for cooperation (AO Russlii biskvit, OOO Trading House Russkii chai).

The range of areas of cooperation between organizations of the Vologda oblast and the Republic of Belarus is wide and is determined by the specifics of a particular enterprise. Among the areas in which bilateral cooperation is carried out, it is possible to indicate the joint production of products (AO Vologda Optical and Mechanical Plant, AO Cherepovets casting and mechanical plant), the exchange of technical solutions (AO Vologda Optical and Mechanical Plant), as well as the export (import) of products and raw materials (AO Timber Industry Holding Cherepovetsles, OOO Voltri, AO Russkii biskvit, AO Cherepovets casting and mechanical plant, OOO Trading House Russkii chai).

The heads of the surveyed enterprises note: an important feature in the interaction is that the Belarusian partners pay special attention to the quality of products (OOO Voltri, AO Russkii biskvit). For example, according to the sales director of AO Russkii biskvit, A.Yu. Gubarev, only high-quality products from Russian suppliers can be sold to the Belarusian consumer.

However, there are other features: according to the general director of AO ChLMZ V.N. Boglaev, the business rules established in Russia are often incorrectly perceived by the Belarusian side due to the different socio-political structure of the state and a completely different attitude to ownership of the means of production.

In general, the interviewed managers note that Belarusian partners in the framework of bilateral cooperation have such qualities as honesty, punctuality, responsibility (AO Timber Industry Holding Cherepovetsles, AO VOMZ, OOO Trading House Russkii chai).

It is important to emphasize that for most enterprises, cooperation with Belarusian partners provides advantages both in technical and technological terms and in terms of staffing (AO ChLMZ, AO VOMZ, OOO Voltri). Director for science and innovation of AO VOMZ, A.V. Grigoriev, noted that bilateral cooperation makes it possible to borrow part of the Belarusian engineering school, which has retained the same "Soviet" look". Moreover, such cooperation provides an opportunity to expand the horizon of export supplies and thereby expand the markets for their own products (AO Russkii biskvit, AO Timber Industry Holding Cherepovetsles, OOO Trading House Russkii chai).

The change in the terms of cooperation of companies with counterparties from the Republic of Belarus over the previous three years has occurred in different ways. In relation to some enterprises, the terms of interaction have not undergone any changes (AO ChLMZ, AO VOMZ). OOO Voltri, AO Timber Industry Holding Cherepovetsles, and AO Russkii biskvit have worsened the terms of cooperation with Belarusian partners for various reasons, both related to the impact of international economic sanctions against the Union State and purely economic. According to the sales director of AO Russkii biskvit, A.Yu. Gubareva, the volume of exports to the Republic of Belarus decreased from 40% (in 2019) to 30% (in 2022) due to the pandemic and international economic sanctions. However, the relations of OOO Trading House Russkii chai with Belarusian partners have improved over the previous three years, due to the fact that the popularity of the company's products on the Belarusian market has increased: new counterparties and ordinary consumers learn about it.

As for future plans for cooperation with Belarusian partners, all the interviewed heads of enterprises are ready to increase the potential of bilateral cooperation. For example, O.V. Chashnikova (OOO Voltri) noted: "We plan to continue cooperation with the Orsha Plant and we want to do it directly, since we do not observe alternatives to their products". A.Yu. Gubarev and I.O. Bogdanov plan increasing the volume of trade turnover between their companies and Belarusian counterparties. The need for Amkodor products for the needs of AO Timber Industry Holding Cherepovetsles is a reason to expand the range of imported products. AO "VOMZ" plans expanding cooperation in the field of civil products and innovations. As for the projects that can be implemented jointly with the Belarusian side, the specifics of the company's activities play a special role here. V.N. Boglaev (AO ChLMZ) noted on this occasion: "There are quite a lot of promising projects: starting from the production of forestry equipment and ending with an enterprise with a volume of cast iron casting up to 300–400 thousand tons and 100–150 thousand tons of steel casting, which should cover the need for body casting of the entire machine-building complex of Belarus and Russia".

Of particular importance is the issue of bilateral cooperation of enterprises in the field of innovation. "We are always ready to develop cooperation in the field of innovation! At the moment, we are already implementing innovations in the field of hydrocarbon processing. We have a competitive advantage: we are the only company in Russia and Belarus that has critical technologies of organ synthesis and pyrolysis. The market for such products in the Russian Federation alone is about 7 billion U.S. dollars. Although we are not the only player in this market, we are one of its most important elements" (V.N. Boglaev, AO ChLMZ). "Our company is innovative. It manufactures high-tech science-driven products. We want to develop innovations in the field of optical production for civilian needs (sights, binoculars, telescopes)" (A.V. Grigoriev, AO VOMZ). It is worth noting that every company whose managers took part in the survey is ready to develop cooperation with partners from Belarus in the field of innovation.

The current geopolitical situation is making its own adjustments regarding the vision of prospects for bilateral cooperation. Most entrepreneurs note that the planning horizon of companies has significantly decreased. However, the director for science and innovation of AO VOMZ, A.V. Grigoriev states that the current situation against the background of a special military operation did not have a negative impact on the company's activities and, accordingly, on the prospects for planning its bilateral cooperation with partners from the Republic of Belarus. According to the expert, this is facilitated by the joint production of products within the framework of the state defense order. In the current situation, joint coordination of efforts

is particularly important, since economic sanctions have an impact not only on Russia, but also on the entire Union State.

The competitive advantages of most companies that can help implement strategic objectives for a specified period include the professionalism of employees, first-class equipment and many years of experience. However, "young" enterprises also have comparative advantages. The director of OOO Trading House Russkii chai, I.O. Bogdanov noted: "We see the prospects for the development of the enterprise for five years ahead. Our main advantage is high vertical integration in the company (from the procurement of raw materials to the production of finished products). Moreover, automation of production has significantly reduced the cost of production (the wage fund has been reduced). Thus, for the previous four years we have not raised prices for our products".

However, bilateral cooperation between Russian and Belarusian enterprises is not without some problems. "The main problem is that Russia and Belarus have different technical regulations. Moreover, I would also like to note that the preferences (subsidies) that apply to Russian enterprises on the territory of the Russian Federation do not apply to Belarusian enterprises (and vice versa). In addition, many Russian enterprises had (and still have) problems with receiving payments from Belarus for previously delivered products" (V.N. Boglaev, AO ChLMZ). "The main problem is related to customs duties and registration of permits. I would like to abolish excessive bureaucracy: to cancel permits for the movement of goods, people, etc." (A.V. Grigoriev, AO VOMZ). Another important problem is the refund of value added tax in the implementation of foreign trade operations (AO Timber Industry Holding Cherepovetsles, OOO Trading House Russkii chai). It is also impossible to ignore the problem of international economic sanctions, which has had a significant impact on bilateral cooperation between enterprises of the Russian Federation and the Republic of Belarus. For example, the sales director of AO Russkii biskvit, A.Yu. Gubarev notes: "The main problem is related to the impact of international economic sanctions that caused an increase in sugar prices in March 2022. The privilege extended to food enterprises of the Republic of Belarus, according to which they have the opportunity to compensate 50% of the cost of purchased sugar, does not apply to Russian enterprises that export their products to Belarus. Consequently, the products of Russian manufacturers in the Belarusian market have become more expensive and, as a result, less competitive (the price increase was about 30%)".

Solving the identified problems can significantly increase the effectiveness of bilateral cooperation. However, it will require the help of representatives of regional and federal authorities. According to A.V. Grigoriev, in order to increase the potential of cooperation, including in the field of civil engineering, it will be necessary to remove customs restrictions on special-purpose products, as well as bring the legislation (including financial) of the two countries to a "common denominator" (a unified reporting system is needed). I.O. Bogdanov noted that the assistance of state authorities in solving the problem of VAT refund and affordable loans are important, since programs cannot be effective for everyone. V.N. Boglaev and O.V. Chashnikova added that they need personnel of appropriate qualifications.

Conclusion

Summing up the results of expert interviews with the heads of the surveyed enterprises, it is possible to highlight the features, problems and prospects of bilateral cooperation.

It is worth noting that the range of areas of cooperation between enterprises of the Vologda Oblast and the Republic of Belarus is extensive and is determined by the specifics of a particular company.

For most enterprises in the region, cooperation with Belarusian partners provides advantages both in technical and technological terms and in terms of staffing. Moreover, it helps to expand the horizon of export supplies and, thereby, the markets for its own products.

Of particular importance is the issue concerning the bilateral cooperation of enterprises in the field of innovation. It is worth saying that all the Vologda Oblast companies whose representatives took part in the survey are ready to develop cooperative ties with partners from Belarus in this area.

However, bilateral cooperation is not without problems: the fragmentation of the regulatory framework, including technical regulations, the "divergence" of preferences (subsidies), which, acting, for example, for Russian enterprises in the territory of the Russian Federation, do not apply to Belarusian enterprises (and vice versa). In addition, many Russian enterprises had (and still have) problems with receiving payments from Belarus for previously delivered products. Another important problem is the refund of value added tax in the implementation of foreign trade operations. It is also impossible to ignore the problem of international economic sanctions, which has had a significant impact on bilateral cooperation between enterprises of the Russian Federation and the Republic of Belarus.

Thus, according to the functional orientation, the main barriers to the development of cooperation between enterprises of Russia and the Republic of Belarus, including in the innovation sphere, can be systematized into the following groups: organizational, economic, institutional and technical. Organizational and economic barriers include the problem of international economic sanctions, bureaucracy in the preparation of permits, insufficient investment. Institutional ones include the "divergence" of preferences (subsidies), the fragmentation of the regulatory framework. Among the technical barriers, a special place is occupied by problems with obtaining payment from Belarus for previously delivered products, as well as with the refund of value added tax in the implementation of foreign trade operations.

The results of the interview revealed that the systematic nature is more characteristic of institutional barriers. In particular, experts V.N. Boglaev and A.Yu. Gubarev noted that the benefits and preferences that apply to Belarusian producers in Belarus are not related to Russian contractors who directly cooperate with them.

At the same time, the presence of organizational and economic barriers is determined by the foreign policy situation and a number of other factors, for example, global "challenges", one of which was the coronavirus pandemic. Technical barriers are less systematic in nature: despite their frequent manifestation, they usually arise due to imperfections of technological equipment, means of communication and data transmission, problems with the Internet, electronic document management, etc. Thus, when making management decisions, it is important to take into account the specifics of each group of barriers to the development of cooperation with counterparties.

Another feature of the bilateral cooperation of enterprises is due to the nomenclature of the countries' trade: the structure of foreign trade demonstrates that the Vologda Oblast is a "supplier" to Belarus of products of the first processing. At the same time, promising niches for production in Russia in the context of the development of trade with neighboring countries will be goods not even of medium, but of upper processing (with which Belarus is not fully provided). Thus, the development of foreign trade in an innovative direction is a priority within the Union State.

It is important to emphasize that regional enterprises have a certain potential to implement this task. For example, a number of enterprises are conducting research and development (AO Russkii biskvit, AO Timber Industry Holding Cherepovetsles, AO VOMZ, etc.). In addition, it is possible to develop joint production of innovative products, in particular using Russian production funds.

Taking into account the opinions of experts identified during the interview, we formulated proposals aimed at overcoming barriers to cooperation between enterprises of Russia and the Republic of Belarus, including in the innovation sphere:

1) the abolition of excessive bureaucracy when issuing permits for the movement of goods, people, etc., which is of particular importance in the new economic conditions caused by the introduction of sanctions;

2) creation of conditions in the regions for attracting investors, ensuring the work of the innovation infrastructure for packaging innovative projects to present them to investors;

3) elimination of contradictions within the framework of legislative acts regulating innovation activities within the Union State;

4) the solution to the problem associated with the refund of value added tax in the implementation of export-import operations; in particular, experts propose to abolish the procedure for registering contracts and make them free (free purchases without conversion from currency to currency).

The practical implementation of the developed directions should not only assist in improving the quality of the policy pursued within the framework of bilateral cooperation, but also have a positive impact on solving problems arising from the interaction of enterprises of Russia and the Republic of Belarus.

References

Bems R., Johnson R.C., Yi K.M. (2013). The great trade collapse. *Annual Review of Economics,* 5, 375–400. DOI: https://doi.org/10.1146/annurev-economics-082912-110201

Boddewyn J. (2016). International business-government relations research 1945–2015: Concepts, typologies, theories and methodologies. *Journal of World Business*, 51(1), 10–22. DOI: https://doi.org/10.1016/j.jwb.2015.08.009

Buckley P.J., Doh J.P., Benischke M.H. (2017). Towards a renaissance in international business research? Big questions, grand challenges, and the future of IB scholarship. *Journal of International Business Studies*, 48, 1045–1064.

Davydenko L.N., Litvinyuk A.I. (2022). Belarusian-Russian cross-border cooperation: Experience and development outlook in the scope of union programs. *Ekonomika, modelirovanie, prognozirovanie*, 16, 14–25 (in Russian).

Dugova I.V. (2017). Innovative programs of the Union State. In: *Ekonomika i regional'noe upravlenie: sbornik statei mezhdunarodnoi nauchno-prakticheskoi konferentsii* [Economics and Regional Management: Collection of Articles of International Scientific and Practical Conference] (in Russian).

Efimenko S.V. (2020). Scientific and technical cooperation between Belarus and Russia. In: *Integratsiya i razvitie nauchno-tekhnicheskogo i obrazovatel'nogo sotrudnichestva – vzglyad v budushchee: sbornik statei II Mezhdunarodnoi nauchno-tekhnicheskoi konferentsii "Minskie nauchnye chteniya – 2019". V 3-kh tomakh. T. 1.* [Integration and Development of Scientific, Technical and Educational Cooperation – Look into the Future: Collection of Articles of the 2nd International Scientific and Technical Conference "Minsk Scientific Readings – 2019". In 3 Volumes. Volume 1] (in Russian).

Evenett S.J. (2019). Protectionism, state discrimination, and international business since the onset of the Global Financial Crisis. *Journal of International Business Policy*, 2, 9–36. DOI: https://doi.org/10.1057/s42214-019-00021-0

Fil'kevich I.A. (2018). Development of new models of cooperation within the framework of the EAEU and the SCO based on the creation of trade and economic cooperation zones. In: *Bol'shaya Evraziya: Razvitie, bezopasnost', sotrudnichestvo* [Greater Eurasia: Development, Security, Cooperation] (in Russian).

Gumbrell-McCormick R. (2013). The international trade union confederation: From two (or more?) identities to one. *British Journal of Industrial Relations*, 51(2), 240–263. DOI: https://doi.org/10.1111/j.1467-8543.2012.00897.x

Ibraeva V.Sh., Dzhunusheva Zh.B. (2020). Trade and economic cooperation of the EAEU member states. *Ekonomicheskii vestnik=Economic Bulletin*, 1(2), 48–55 (in Russian).

Koloda S.A., Epshteyn V.A., Vilchinskii A.S. (2019). Bilateral relations between Russia and Belarus at the current stage. *Mir russkogovoryashchikh stran=World of Russian-Speaking Countries*, 2(2), 44–53 (in Russian).

Kovaleva E.N. (2020). Export development in Russia and Belarus: Structural features and implementation of infrastructure support opportunities. *Nauchnyi zhurnal NIU ITMO. Seriya: Ekonomika i ekologicheskii menedzhment=Scientific Journal NRU ITMO. Series "Economics and Environmental Management"*, 1, 11–18 (in Russian).

Kurakina S.I., Barshova O.A. (2020). On the occasion of the 20th anniversary of the union state of Russia and Belarus: Results, problems and prospects. *Vestnik Permskogo universiteta. Yuridicheskie nauki=Perm University Herald. Juridical Sciences*, 47, 137–159. DOI: 10.17072/1995-4190-2020-47-137-159 (in Russian).

Malakhova T.S. (2021). Foreign trade and economic relations between Russia and Belarus in the context of external challenges and threats. *Vestnik nauchnykh konferentsii*, 1-2(65), 98–99 (in Russian).

Moleva S.V. (2012). The development of trade and economic cooperation between Belarus and Russia is an important component of the successful functioning of the Union State. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 6(24), 60–66 (in Russian).

Mutz D., Mansfield E.D., Kim E. (2017). The racialization of international trade. *Political Psyhology*, 42(4), 555–573.

Nemensky O.B. (2016). "The las ally": Russian-Belarusian relations at the present stage. *Kontury global'nykh transformatsii=Outlines of Global Transformations: Politics, Economics, Law*, 9(5), 24–40 (in Russian).

Rauter R., Globocnik D., Perl-Vorbach E., Baumgartner R.J. (2019). Open innovation and its effects on economic and sustainability innovation performance. *Journal of Innovation & Knowledge*, 4(4), 226–233. DOI: https://doi.org/10.1016/j.jik.2018.03.004

Rodygina N.Yu., Bessonova D.K. (2018). Trade, economic and investment cooperation between Russia and France during the period of international sanctions. *Ekonomika i predprinimatel'stvo*, 3(92), 203–208 (in Russian).

Shurubovich A.V. (2019). Byelorussia in the EAEU: Trends, problems, prospects. *Rossiya i sovremennyi mir=Russia and the Contemporary World*, 4(105), 91–110. DOI: 10.31249/rsm/2019.04.06 (in Russian).

Sotnikov A.V. (2022). Union state programs: A new comprehensive step towards integration. *Rossiiskii vneshneekonomicheskii vestnik=Russian Foreign Economic Journal*, 3, 33–37 (in Russian).

Umgaev S.A., Tsakuginova G.A., Yusupov T.S. (2019). Russian-Chinese international trade and economic cooperation. *Nauchnaya mysl' Kavkaza=Scientific Thought of Caucasus*, 4(100), 48–51 (in Russian).

Vaganova O.E. (2017). Efficiency audit during the implementation of priority programs of the Union State. *Faktory uspekha*, 2(9), 9–13 (in Russian).

Vityaz P.A. (2017). Fight against Russophobia – actual task of the Russian bas associations. *Ekonomika. Pravo. Obshchestvo=Economics. Law. Society*, 2(10), 6–10 (in Russian).

Xu S. (2021). Concept and factors of the development of trade and economic cooperation. In: *Tendentsii ekonomicheskogo razvitiya v XXI veke: materialy III Mezhdunarodnoi nauchnoi konferentsii* [Economic Development Trends in the 21st Century: Proceedings of the 3rd International Scientific Conference]. Minsk (in Russian).

Yusubov F. (2013). Bilateral interstate economic cooperation: Concept, forms and essence. *Zhurnal mezhdunarodnogo prava i mezhdunarodnykh otnoshenii=Journal of International Law and International Relations*, 1, 81–87 (in Russian).

Zaitov F.R. (2021). Problems of development of the Union State of Belarus and Russia. In: *Aktual'nye problemy istoricheskikh issledovanii: vzglyad molodykh uchenykh. Novosibirsk, 23–25 sentyabrya 2021 g.* [Actual Problems of Historical Research: View of Young Scientists. Novosibirsk, September 23–25, 2021]. Novosibirsk (in Russian).

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Analysis of Deindustrialization Trends in Türkiye from an International Comparative Perspective

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Abstract. In this study, deindustrialization was examined within the international political economy approach, and comparative analyzes were made to explain the deindustrialization trends in selected countries, especially in Türkiye. According to the results, deindustrialization, as a developed country phenomenon that started to decline at the peak of industrial productivity and caused an increase in the service sector, spread to developing countries mainly after the 1990s, with the global restructuring of labor through the neoliberalizm. It has created an effect of industrialization in some of the developing economies and deindustrialization in others. It can be argued that the global effects of deindustrialization in developing countries are closely related to the economic policies of the nations before they entered the deindustrialization process. For example, Türkiye's main distinguishing aspect is the rapid transition from import substitution policies to a free market economy, while industrial development is still ongoing. As a result, it can be argued that Türkiye entered the process of premature deindustrialization in employment

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in terms of a direct transition from agriculture to the service sector and the inability of the service sector to absorb the labor force emerging from agriculture and industry, but this is a non-structural phase that can be overcome with alternative socioeconomic and spatial planning.

Key words: deindustrialization, globalization, political economy, comparative analyzes.

Introduction

The aim of the study is to analyze the regional character of deindustrialization and to reveal international political economy causality, different forms of deindustrialization in the global context and deindustrialization trends in Türkiye. The study emerged from a scientific curiosity about the dynamics behind the phenomenon of deindustrialization, which we observe concretely in the urban area and which can often be understood as an urban transformation activity. What are the political economic conditions of deindustrialization, which is mostly measured in a particular unit, region or sector? It is expected that a holistic study including theoretical and empirical research, will form a ground on which measures can be developed against deindustrialization. For this purpose, a literature review was carried out in the second part, and the conceptual framework formed. In the third section, a comparative analysis of employment and, accordingly, the changes in GDP and unemployment indicators in selected countries is made, and the results are given in the fourth section.

The study is expected to contribute to the literature and, to upper-scale socioeconomic and spatial planning especially in developing countries, and to form a basis for alternative development models.

Deindustrialization is not only a phenomenon that expresses the transformation of labor force from industry to services in certain units, but means the global restructuring of the labor across regions. In this restructuring, this study reveals the advantageous and disadvantageous aspects of the regions, and defines the main disadvantage as facing free market economy and international competition while the industrialization process of the countries continues. The original comparison study carried out in the study confirms this definition. The contribution of the study at the empirical level is to create an international sample, analyze it on employment and income indicators, classify the countries and explain the results with political economy causality by establishing a relationship with the literature.

In the study, social and regional science disciplines were used and deindustrialization was investigated with theoretical and empirical analysis. A combined qualitative and quantitative research methodology was employed. Qualitative data-based methods (theoretical analyses) include literature research, analytical approach, analysis of the information and data. Quantitative methods (empirical analysis) include creating an international sample and comparing, classifying and visualizing data on sectoral employment and income.

In the literature, some studies examine the issue of deindustrialization through various indicators and scales. To begin with though, a holistic study is required to understand the historical and international political economic conditions of deindustrialization and to explain the specific aspects of Türkiye compared to other countries.

When deindustrialization is defined within the framework of the classical view that sees this process as a positive process related to productivity, it turns into an inevitable phenomenon. This view reflects the modernization approach, which is based on the premise that all societies will follow the same-linear development line and inequalities will be balanced later. Against this approach, critical theory has revealed capitalist development is dependent on the relation between the center-periphery and defined the possibilities of independent economic development.

There are continuities covering long historical periods under the changes of the historical process (Braudel, 2017 [1949]). The core-periphery theory of the Dependency School's studies (Prebisch, 1950; Amin, 2018 [1988], Amin, 1991; Frank, 2010 [1998]), which was the main scientific development in the 1960s is overlooked in the face of technological developments and diversity in today's radically globalized world. In the face of the complexity of work and labor, scientific paradigms tend to diverge from basic structural dynamics and context at the phenomenological level. In this context, the main concern of the study is to explain deindustrialization in the context of center-periphery relationality, which is a historical continuity, and to create an alternative basis for development.

As the study underlines and argues, deindustrialization is not an usual development process but a politically regulated global economic transformation. This process has meant abandoning their dynamic advantages for most developing countries. On the other hand, it is debatable that deindustrialization mean a development and the next advanced business organization also for developed-Western economies (Ryazanov, 2018).

In this study, the industrial sector is considered as a dynamic sector, as in (Kaldor, 1966) approach among early studies. Among the studies after the 1980s, Krugman's (Krugman, 1991) views that he opened the center-periphery relationality to the discussion by questioning "why industrial development concentrated in a few regions and left others relatively behind"; Şenses's views on "the interruption of industrial development in Türkiye" (Şenses, 2004); and Ryazanov's views (Ryazanov, 2018) that defines as "post-industrial nihilism" the delusion that the increasingly complex structure of modern industrial society will replace industrial production with the service sector, were accepted.

Empirically, the studies (Lorenzi, Berrebi, 2016) and (Ryazanov, 2018) which research industrial development in developed and developing countries, are taken as a reference. Additionally, the works (Dasgupta, Singh, 2006) and (Rodrik, 2016) on "premature deindustrialization" in developing countries, (Bakir et al., 2019) on the trends in Türkiye and the study (Doğruel, Doğruel, 2019) evaluating the changes in economic policies after 1990 are taken into account.

The results of international comparisons, in line with the literature, reveal the relationship of deindustrialization with the global restructuring of production and labor. In addition, as a periodical solution produced through new regionalism and the transformation of cities, it also gives clues to domestic capital mobility. For this reason, the arguments put forward in (Baycan-Levent, 2005), (Keyder, 2014), (Doğruel, Doğruel, 2018) on the transformation of the industry from the center to the periphery within the framework of the global city vision for Istanbul have been discussed as the subject of the following study.

Conceptual framework

The definitions of deindustrialization are based on early studies that reflect neoclassical economic thought and explain deindustrialization as a usual development process. According to the three sectors or Clark-Ficher model, which is based on the arguments of Clark and Fischer (Clark, 1940; Fischer, 1939), structural change and development in the economy are explained by expansion from the primary sector (agriculture) to the secondary (industry) and tertiary (services) sectors. In this context, with its most basic definition; deindustrialization means a severe decrease in the industrial sector workforce and, in turn, a rapid increase in the service sector workforce.

The authors of the 1960s also examined deindustrialization within the scope of economic growth. In comparison, some authors shared the pioneering views of the 1940s and described it as a usual process (Rostow, 1959; Kuznets, 1973). On the other hand, even though industrial production was the main factor in economic development and the growth in the service sector, there have been opinions that the decrease in production will slow down economic development (Kaldor, 1966).

In the rapid globalization phase after the 1980s, with the appear the negative consequences of

deindustrialization in developed countries and the spread of the deindustrialization of developing countries, the scope of studies in the literature has changed. Therefore, the relationship of deindustrialization with international trade and capital mobility, its regional character, and positive and negative aspects have begun to be emphasized (Bluestone, 1984; Krugman, 1988, Krugman, 1991; Rowthorn, Ramaswamy, 1997; Kollmeyer, 2009a; Kollmeyer, 2009b; Lorenzi, Berrebi, 2016; Alderson, 1999; Rowthorn, Wells, 1987; Dasgupta, Singh, 2006; Rodrik, 2016; Ryazanov, 2018; Kornev, 2022).

In Türkiye, significant studies in the field of political economy have focused on the neoliberal economic policies behind deindustrialization, its internationally differentiated form, and its impact on the economy (Kepenek, 1999; Şenses, 2004; Yeldan, 2006, Yeldan, 2011; Kolsuz, Yeldan, 2014; Yeldan, Yıldırım, 2015; Doğruel, Doğruel, 2019).

Studies on deindustrialization trends focused on sectoral and periodic changes according to economic indicators. While some of these studies claimed that premature deindustrialization started in Türkiye (Bakır et al., 2019; Köse, Dineri, 2020), some other studies argued that there is a tendency to deindustrialization but that premature deindustrialization cannot be mentioned (Şıklar, Tonus, 2007; Öz, 2018; Yanıkkaya et al., 2019).

Studies investigating deindustrialization trends at the regional level have focused on the changing characteristics of deindustrialization according to regions and periods (Doğruel, Doğruel, 2018; Meçik, Aytun, 2018). In spatial studies at the theoretical level, the transformation of cities and deindustrialization are considered as parallel processes (Keyder, 2014). Studies examining deindustrialization in specific units have focused on the mobility of industrial facilities on an urban scale (Yücebaş, 2014; Kurşuncu, 2016; Ayik, 2018; Ayik, Avcı, 2018).

As a result of the literature research, the primary references for this study are outlined below.

According to the results of Kaldor's analysis by comparing the slowdown in the economic growth rate in England with other developed countries, there is a positive relationship between the growth rate in industrial production and the growth rate of national products. With this, there is a positive relationship between growth in production and productivity in manufacturing and other sectors. For this reason, Kaldor defined the industrial sector as the locomotive of economic growth. Kaldor argues that England has the problem of "premature maturity" compared to other developed economies and that the industrial sector has reached the highest level. Therefore economic growth has slowed down (Kaldor, 1966). Kaldor classically explained deindustrialization with the productivity in industrial production, but he argued that unlike Clark and his followers, the industrial sector continues to be a dynamic sector.

Among the post-1980 studies, Krugman, who won the Nobel Prize in economic sciences for his work on commercial models and the locality of economic activity, offers a new perspective on the causes of concentration (agglomeration) of industrial activity based on neoclassical economics and mainly the work (Marshall, 1890). Krugman reopened the center-periphery relationship by arguing that the development in some regions left others behind (Krugman, 1991).

Şenses, responsible for one of the main studies in Turkiye, underlines that the most acute effects of neoliberal globalization in underdeveloped countries are the gradual weakening of the understanding of the welfare state and the falling of industrialization from the agenda. Şenses argues that the forms of deindustrialization differ between the core and peripheral countries. The deindustrialization of developing countries and developed economies are a specious analogy. In addition, he draws attention to the unique situation in which industrialized East Asian countries develop with government regulations instead of free markets (Şenses, 2004).

In their studies on international deindustrialization trends, Lorenzi and Berrebi have drawn attention to the effects of the offshoring mechanism from developed to developing countries and

revealed that in the second globalization period, after the 1990s, industrial activity shifted to certain regions in a much more specific way than in the 1970s. According to the results, the industrial value added of the country has rapidly shifted between developed and developing countries in connection with the world industrial value added. A sharp change in world industrial value was added between 1995 and 2005. According to Lorenzi and Berrebi, the change in industrial activity in the 1990s is exceptional. All Western countries have been affected by international activity transfer in terms of developing countries. The whole world has been affected, including the countries where the transfer of activity has never occurred, although China is centered (Lorenzi, Berrebi, 2016).

The form and effects of deindustrialization differ in developed and developing economies. In this context, the main explanation defining deindustrialization in developing countries is the "premature deindustrialization" thesis.

Dasgupta and Singh conducted a Kaldorian analysis of premature deindustrialization and identified several long-term structural trends in developing countries. According to this, in some developing countries, deindustrialization started at a deficient level of per capita income compared to developed countries. In addition, both slow (e.g., Latin America) and fast-growth economies (e.g., India) are experiencing the phenomenon of "jobless growth" in the formal manufacturing sector, that is, growth that does not create jobs. According to their findings, Dasgupta and Singh argue that, as an exceptional example, the service sector in the Indian economy can develop into a dynamic industry in economic growth, especially in information and communication technologies (ICT) and related fields. In other developing countries, industrial production continues to be the dominant sector in development, so deindustrialization is a negative situation in these countries (Dasgupta, Singh, 2006).

Another researcher on premature deindustrialization, Rodrik, defines deindustrialization in developing countries as "premature". It is unlike historical norms, occurs before industrial production and income reach a sufficient, high level. While industrialization has positive effects, such as producing technology and absorbing the workforce, premature deindustrialization adversely affects economic growth. According to Rodrik, while increasing productivity is effective for industrialization-deindustrialization patterns of developed economies, the effect of globalization is more pronounced in developing countries. According to two important conclusions suggested by Rodrik; 1) there is a significant displacement of manufacturing from the richer countries of the world (mainly the USA and Europe) to Asia, especially China; 2) the share of production in the gross domestic product has changed differently in various regions. Moreover, according to Rodrik, despite the positive characteristics of deindustrialization in developed economies, these countries (e.g., America) develop policies to protect themselves from the decline in the industrial sector. On the other hand, the deterioration in industrial policies and deindustrialization with all its negative features continue in underdeveloped (e.g., Sub-Saharan Africa) and developing (e.g., Latin America) countries (Rodrik, 2016).

Among the studies on deindustrialization trends in Türkiye, Bakır et al., in their study covering the 1998–2014 period, argues that Türkiye has entered the process of deindustrialization and that the contraction in the textile and clothing sectors is the main sectoral factor. The research draws attention to both the triggering and accelerating effects of domestic value added decreases, which occur with Türkiye's rapid integration into global value added chains, on deindustrialization. In this process, the dependence of production and exports on imports is increasing rapidly. This dependency also affects the decrease in domestic value added rates, requiring effective measures. Bakır et al. draw attention to the fact that, in this case, deindustrialization for Türkiye, besides being "premature", may deepen. Deindustrialization in Türkiye is explained by its rapid and early participation in the international "new" division of labor (Bakır et al., 2019).

Concerning periodic changes, Doğruel and Doğruel have included post-1990 economic policies and post-2008 paradigm shift in their studies. Accordingly, while deindustrialization expressed structural changes due to internal factors in developed countries before, the effect of globalization started to come to the fore (in the diffusion) after the 1990s. The financial crisis that occurred at the advanced stage of this has led to a paradigm shift in the economic policies of the countries after 2008 towards protectionism in foreign trade and has made deindustrialization an uncertain process for both developed and developing countries today (Doğruel, Dogruel, 2019).

In this study, which examines industrial transformation at the international level, the literature and analysis results also give clues to the dynamics of this process at the country level. It can be argued that deindustrialization, which occurs at the national and international levels, and the emergence of global cities, regional clusters, and city-regions are parallel processes.

For example, in the case of Istanbul, Baycan-Levent emphasized that while competing with other global cities, metropolises create the conditions in which the global economy can function, and in this process, they redefine the development conditions and processes of the peripheral regions (Baycan-Levent, 2005). Similarly, Keyder draws attention to the relationship between global cities and deindustrialization and emphasizes that using the concept of global city-region may require going beyond provincial borders. Keyder shows as an example that "when Istanbul entered the deindustrialization process in the 1980s, the manufacturing was not only moved within the borders of the province, but also went to Çorlu, Gebze, Izmit and even Bursa (to regions outside the provincial borders)" (Keyder, 2014).

In this context, according to Doğruel and Doğruel, who drew attention to deindustrialization and periodically differentiated industrial policies in Istanbul, policies focused on the decentralization of industry from the urban area before 2000 and then on growth in the finance and real estate sectors in the city (Doğruel, Doğruel, 2018).

Another topic in the literature is reindustrialization. Krugman (Krugman, 1988; Krugman, 1991) emphasizes capital mobility in reindustrialization and the change of technology in this process, technology-intensive new business branches that rise instead of old industries. However, he states that the new industries and the service sector are not at a sufficient level to absorb the workforce that has emerged with deindustrialization. Kornev (Kornev, 2022), in the case of Russia, argues the view that new industries should be supported by state subsidies in the face of deindustrialization that emerged with the transition to open economy after the Soviet era.

Ryazanov primarily criticizes the view that the industry will be replaced by the service sector. Reminding the historical conditions, he argues that the service sector will not replace the industry, just as industry has not replaced agriculture but developed it. According to Ryazanov, deindustrialization is a negative situation not only for non-Western economies but also for Western capitalist economies. Because, after the decrease in the textile and clothing sector in the beginning, employment in technology production started to decrease gradually in the advanced stages of deindustrialization. Ryazanov argues that dynamic potentials should be mobilized for reindustrialization. Specialization and technology development will depend on the development of the industrial sector for all countries and their involvement with new industries in the international division of labor (Ryazanov, 2018).

As the literature research shows, deindustrialization is closely related to globalization, international capital mobility, and the global restructuring of labor in this process. The deindustrialization process and its dynamics differ between international regions. While deindustrialization is a process related to productivity in developed countries, the effect of globalization comes to the fore in developing countries. The international transfer of industrial activity, one of the central dynamics of deindustrialization, causes deindustrialization in developed countries. This process leads to industrialization in some developing

countries and deindustrialization in others (with a specious similarity to developed countries). Therefore, deindustrialization is a process that needs to be examined regionally at the international level and shows different trends according to the regions.

International comparative analysis of deindustrialization trends in Türkiye

According to the information obtained from the literature research, it can be seen that deindustrialization is a phase in modern industrial production, its relationship with capital mobility, and international trade. In this process, production and labor are restructured internationally and at the country level regionally. In this context, a comparative analysis of sectoral changes was made in selected countries to determine international deindustrialization trends.

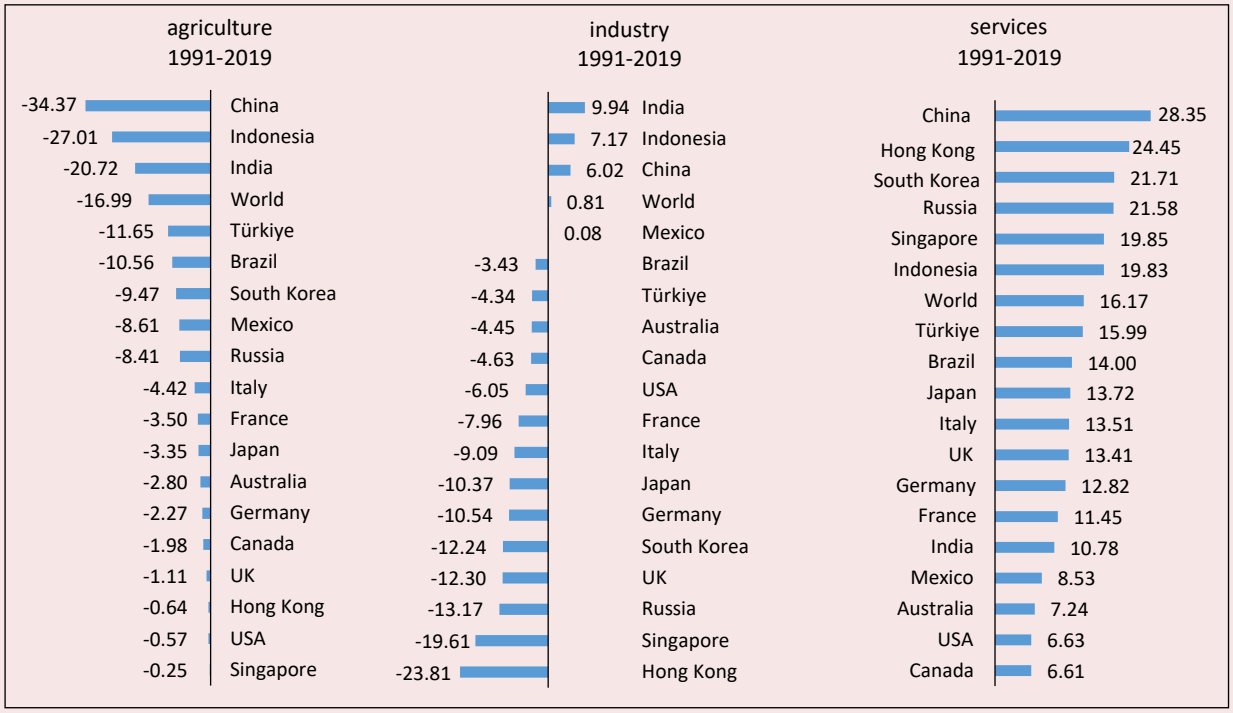
Regarding the studies (Lorenzi, Berrebi, 2016; Ryazanov, 2018; Doğruel, Doğruel, 2019), the analysis is based on the post-1990 period when radical changes began to be seen in developing countries. The timeframe is limited to pre-pandemic 2019. First of all, employment and, accordingly, changes in GDP and unemployment data were examined.

In the comparison study, countries were selected regarding the studies (Lorenzi, Berrebi, 2016) and (Ryazanov, 2018), Türkiye and some others included in the Asia-Pacific Economic Cooperation were added. Accordingly, the 18 countries within the scope of the research are as follows: 7 countries in the developed countries category: United States, Japan, France, Germany, United Kingdom, Canada, Italy, and 11 countries in the developing countries: China, India, Brazil, South Korea, Mexico, Indonesia, Australia, Türkiye, Hong Kong, Singapore and Russia.

Sectoral employment

According to the changes in sectoral employment between 1991 and 2019 in the selected countries (*Fig. 1*), the agricultural sector's shares decreased in all countries, and the shares of the service sector increased. The employment share of

Figure 1. Changes in sectoral employment shares between 1991–2019



Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

the industrial sector varies according to the regions. This situation is remarkable in terms of showing the regional character of deindustrialization. Another issue that needs to be emphasized is that although the share of employment in the agricultural sector is decreasing in all countries, the most affected are the countries that had an agricultural society at the start of deindustrialization and still continued the industrialization process.

In the category of developed countries, there has been no radical change since the 1990s. During this period, industrial employment in these countries gradually declined from the 35–25% band to the 25–20% band. The agricultural sector is low and the industrial workforce is absorbed mainly by the service sector. As a developed country phenomenon, it can be said that deindustrialization is a structural transformation depending on capitalist economic policies and international activity transfer in these countries.

According to the analyzes within the scope of this study, Three types of trends can be mentioned in developing countries. (1) China, Indonesia and India, which are in the first category, are the main parties of international trade and the transfer of activities from the West to the East, and their industrialization processes are increasingly continuing. (2) Countries in the second category, consisting of South Korea, Russia, Hong Kong, Singapore and Australia, show a tendency towards deindustrialization. While these countries, with a specious analogy to developed countries in terms of global impact rather than internal-structural factors, were showing a certain industrial development they entered the stage of deindustrialization; agriculture is declining less than industry and there is a sectoral transition from industry to services. (3) Third, in the group consisting of Türkiye, Brazil and Mexico, there is a serious decrease in the agricultural sector and a slight decrease, which can be called a stagnation, in the employment of the industrial sector. While these countries were agricultural societies and their industrialization processes continued, they faced deindustrialization. Therefore, the service sector has to directly absorb the workforce released from agriculture. Again, in these countries, with a specious analogy with developed countries, there is no radical decrease in industrial employment. The reason for this is that they entered the process of deindustrialization as a global impact while their industrial development was at a low level.

The countries where the substantial change from the West to the East occurred are the Asian countries that industrialized in this process. In India, Indonesia, and China, three developing countries where deindustrialization in the world has an industrialization effect, this effect is seen mainly in the 2000–2012 period (*Tab. 1*).

Among these countries, China is a remarkable example. In 2012, the share of industry and service employment in China approached each other in the 30% band. After this date, industrial employment began to lose momentum, and service employment began to increase rapidly. The reasons for this in China can be seen as the decreasing foreign demand since 2012, the increase in workers' wages in the domestic market, and the slowdown in economic growth due to inflation. It is an important factor that high industrial added value leads to expansion in the service sector by increasing specialization investments. It can be argued that its historical and

Table 1. Group 1 countries industrial employment share, %

Year	India			Indonesia			China		
	A	I	S	A	I	S	A	I	S
1991	63.32	15.18	21.50	55.51	15.19	29.31	59.70	21.40	18.90
2000	59.65	**16.32**	24.04	45.28	**17.44**	37.29	50.01	**22.50**	27.49
2012	47.00	**24.36**	28.64	35.93	**21.07**	43.00	33.60	**30.30**	36.10
2019	42.60	25.12	32.28	28.50	22.36	49.14	25.33	27.42	47.25

Note: A – agriculture, I – industry, S – service sector.
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

Table 2. Group 2 countries industrial employment share, %

Year	South Korea			Russia			Hong Kong			Singapore			Australia		
	A	I	S	A	I	S	A	I	S	A	I	S	A	I	S
1991	14.61	**36.82**	48.57	14.24	**39.96**	45.80	0.81	**34.89**	64.30	0.28	**35.16**	64.56	5.36	**23.51**	71.14
2000	10.60	**28.15**	61.25	14.49	**29.24**	56.27	0.29	**20.33**	79.38	0.16	**27.95**	71.89	4.86	**21.62**	73.53
2012	6.13	24.58	69.29	7.33	27.81	64.86	0.21	12.36	87.43	0.10	20.54	79.36	2.80	20.71	76.49
2019	5.14	24.58	70.28	5.83	26.79	67.38	0.17	11.08	88.75	0.03	15.55	84.41	2.56	19.06	78.38

Note: A – agriculture, I – industry, S – service sector.
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

political character is the most important factor that differentiates China from other countries in its category during this transformation phase.

The second category includes South Korea, Russia, Hong Kong, Singapore and Australia, which have been deindustrialized. In these countries, overall, there has been a sharp decline in industrial employment. When these countries begin to deindustrialize, their industries are generally developed and agricultural employment is low. Therefore, sectoral transition is transforming from industry to services. In this category, Industrial employment shares decreased significantly especially in 1990–2000 (*Tab. 2*).

The island countries Hong Kong and Singapore, which rapidly industrialized in the 1960s and called "Asian Tigers", and another island country Australia, started to rise as the global financial and transportation centers of the Asia-Pacific since the 1990s. These countries have historical and political similar characteristics. The industrialization-deindustrialization processes in these regions, which have long been in intense relations with Western-developed economies, took place in this direction.

After the Second World War, South Korea rapidly industrialized through the export-led growth model. The change of management in 1987 and the 1997 Asian Crisis led South Korea increasingly from planned development to short-term programs.

Russia is a special example in this category. Industrial development in the country, which differs from its category with its historical and political character. After the disintegration of the Soviet regime in 1991, Russia, which tried free market-oriented and centralized development models, stabilized after the great financial crisis in 1998 and became the leading country in raw material exports after the 2000s. At this stage, China-Russia cooperation (Zuenko, 2020) has gained more importance than ever before. The cooperation they developed as a result of the historical and political characters of the two countries, their border neighborhood, supply-demand relationship in raw materials and manufactured products has been the main dynamic of the non-Western pole in their geography.

In the third category, there are countries with a gradual decline in industrial production, but with a large employment loss in agriculture. The agricultural workforce is mostly absorbed by the service sector. There are no significant changes between 1991 and 2019 in these countries, where agriculture and industry gradually decreased and the service sector increased *(Tab. 3)*.

Table 3. Group 3 countries industrial employment share, %

Year	Türkiye			Brazil			Mexico		
	A	I	S	A	I	S	A	I	S
1991	29.76	29.66	40.58	19.64	23.42	56.94	21.09	25.47	53.44
2000	27.30	27.62	45.08	16.49	21.84	61.68	17.41	27.07	55.53
2012	23.56	26.03	50.42	11.47	23.02	65.51	13.72	24.06	62.22
2019	18.11	25.32	56.57	9.08	19.99	70.94	12.48	25.55	61.97

Note: A – agriculture, I – industry, S – service sector.
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

The relatively low decline in industrial employment in these countries is similar to the slow decline in Western-developed economies, but this is a specious similarity. Countries in this category have entered the stage of deindustrialization while not yet sufficiently industrialized. The common features of these countries are being an agricultural society that has not yet completed its industrial development and providing industrial development with import substitution policies before deindustrialization; rapid transition to a free market economy and implementation of the programs of international monetary institutions in this process. In these countries, there has been a decline in industry and a relative increase in the service sector since 1990, while the agricultural sector has regressed radically. The result of this is, firstly, the problem of direct transition from agriculture to services, and secondly, the lack of sufficient increase due to the fact that the development in the service sector depends on the productivity in industry (the gap between the labor force released from agriculture and that absorbed by the service sector, that is, the increase in unemployment).

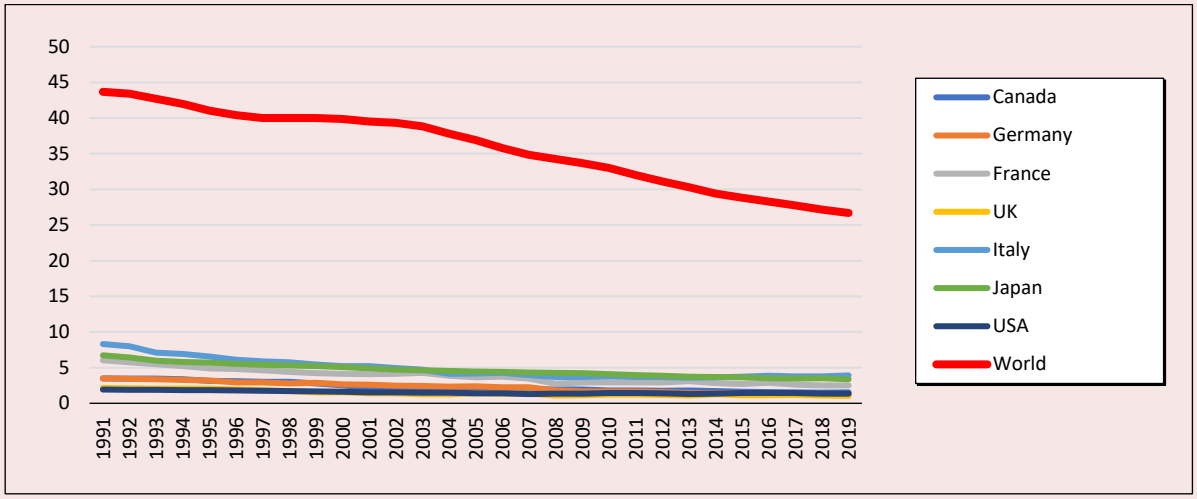
Regarding the global changes in employment, it is seen that there has been a severe transfer of labor and specialization from the developed countries of the North to the developing economies in Asia since the 1990s. It can be argued that countries such as Türkiye and Latin America countries, which are outside of this two-polar development, are deindustrialized as an effect of the process of global restructuring of the labor.

In this group, Türkiye differs historically and politically from other countries in its group. Türkiye had development experience with import substitution economic policies before deindustrialization. While it was still in the industrialization stage, with a series of regulations known as the January 24 decisions, it made a rapid and sudden transition to the free market economy in 1980, and industrial production began to decline in the face of international competition.

As a result, the period 1991–2019 can be mentioned as radical deindustrialization phase. In this phase industrialization-deindustrialization interaction can be mentioned in the first and second group countries, while in the third category, there is stagnation in industrial development rather than deindustrialization. Therefore, there is no single form of deindustrialization; deindustrialization shows different cause and effect relationships regionally, takes different forms, takes place within the scope of development plans and can therefore transform. It can be argued that factors such as the historical conditions of the countries and the economic policies they implemented before deindustrialization were influential in the forms of deindustrialization.

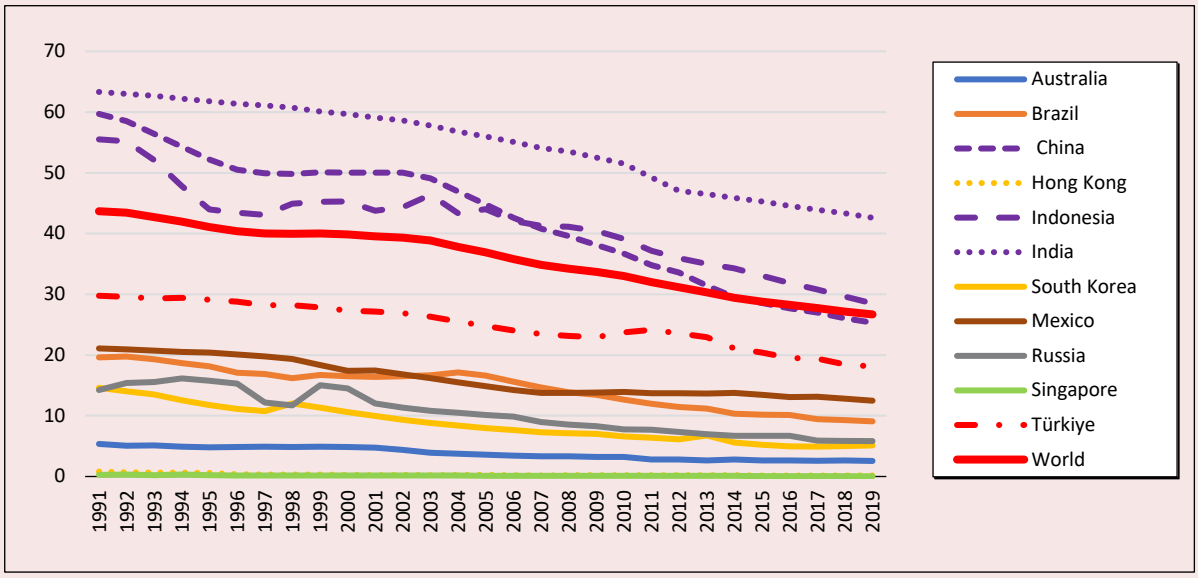
Based on the literature, the analysis period of the study was determined as 2019 after 1990, when radical changes were seen, and before the pandemic (*Fig. 2–7*).

Figure 2. Agriculture employment shares in developed countries



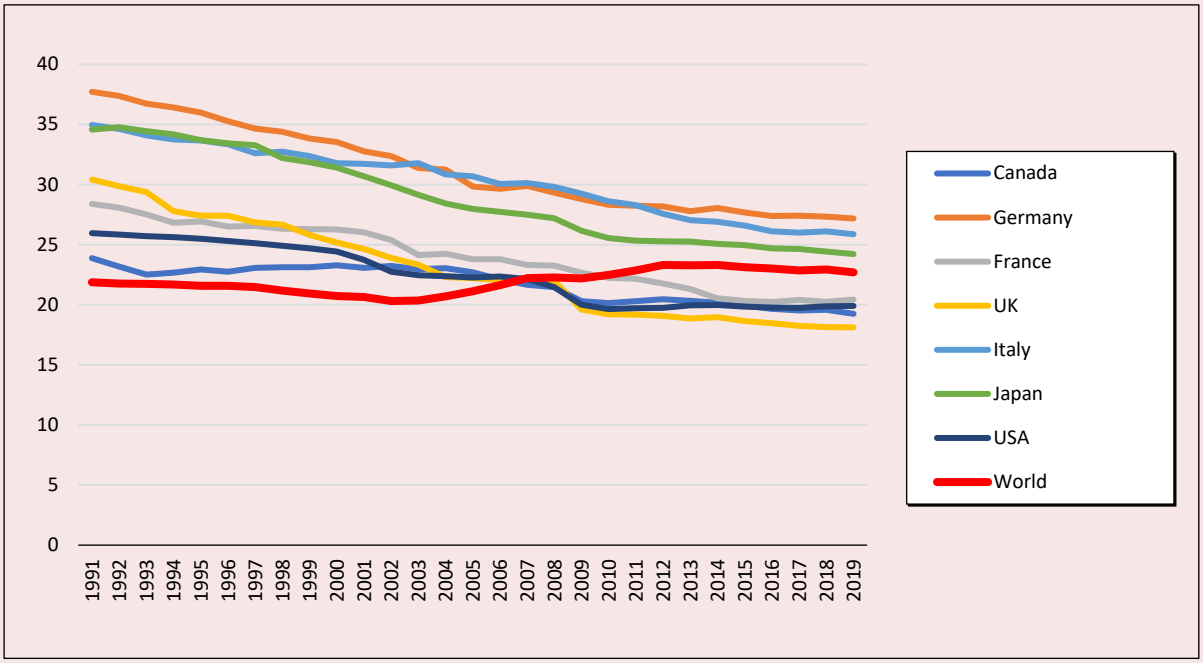
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

Figure 3. Agriculture employment shares in developing countries



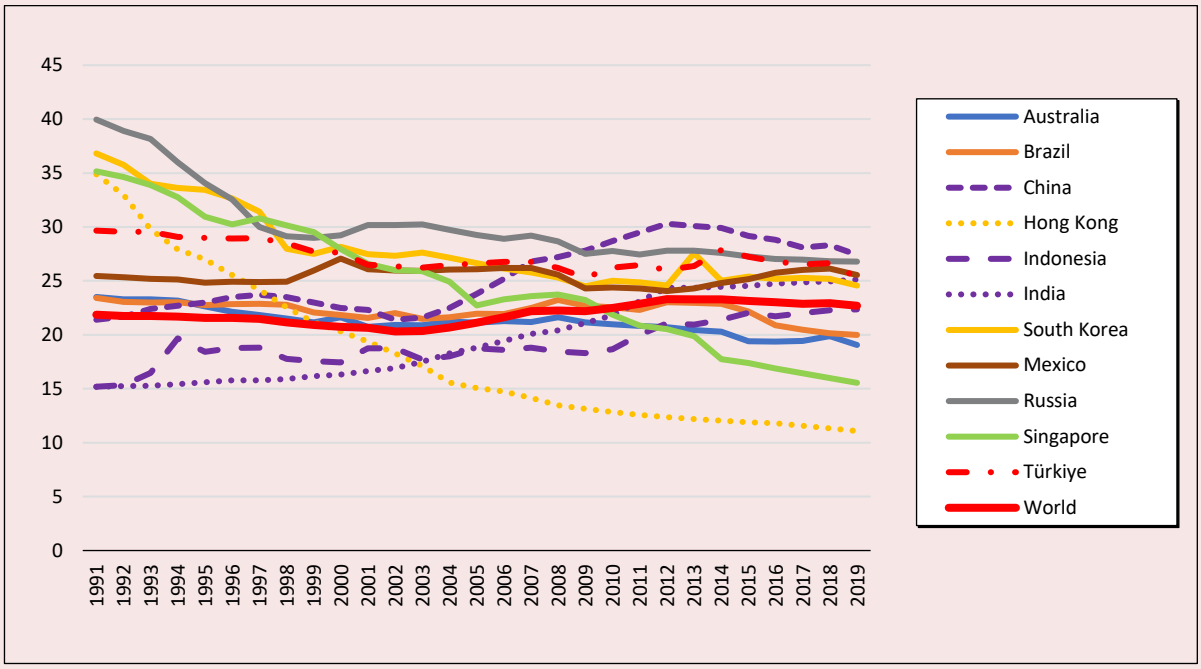
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

Figure 4. Industry employment shares in developed countries



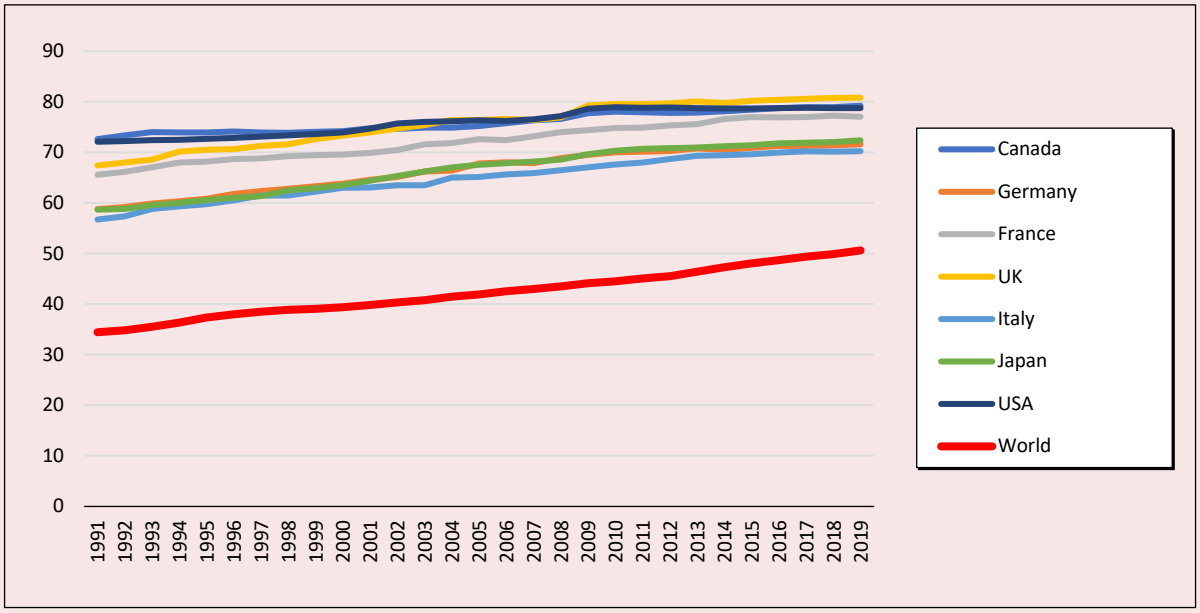
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

Figure 5. Industry employment shares in developing countries



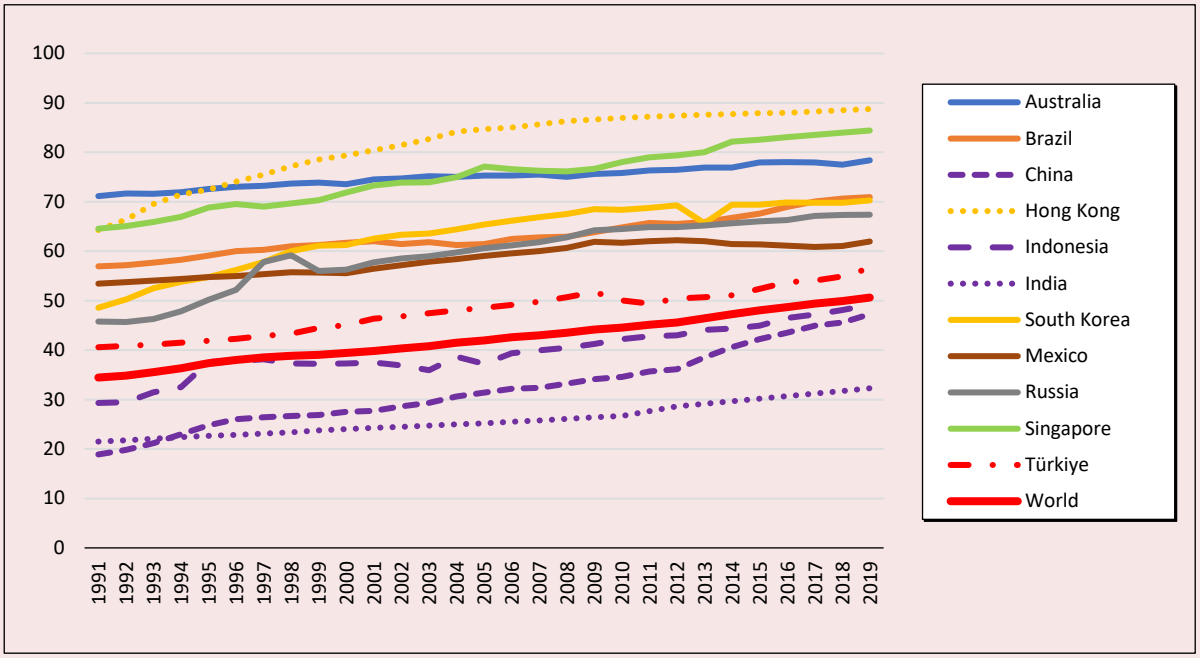
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

Figure 6. Service employment shares in developed countries



Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

Figure 7. Service employment shares in developing countries



Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

GDP

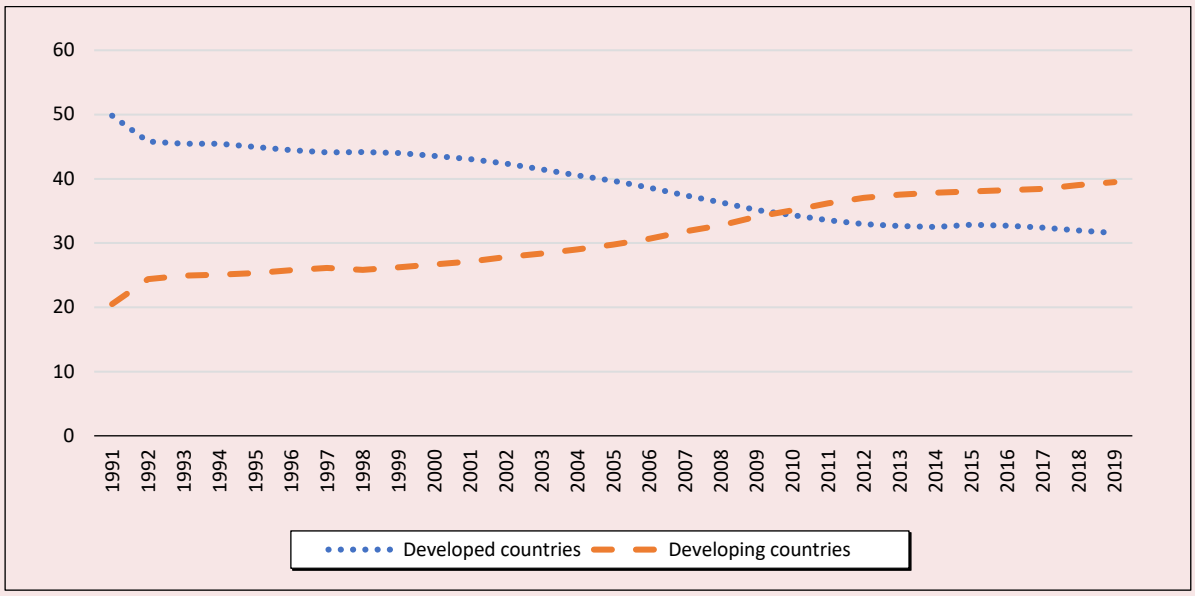
In order to strengthen sectoral employment comparisons, which is the main indicator of the study, GDP and unemployment indicators were also compared. According to the analysis in this study, the shares in the world's total GDP have changed between developed and developing economies since 2010 (*Fig. 8*). This result is in line with (Lorenzi, Berrebi, 2016) that the radical change in employment occurred between 1995 and 2005. Continuing the changes in Industrial Employment, the shares of total GDP also shifted. It is interesting that the industry income started to change in the 90s and shifted in 2010. The transfer of activity to the economies of China, Indonesia and India and the rapid industrialization of these countries are effective in this result in the category of developing countries. This result is compatible with the view of Lorenzi and Berrebi in Kaldorian analysis that industry is still a dynamic sector in developing countries.

According to the sectoral changes, it is observed that the transition between sectors in the GDP shares of developed countries occurred until the 1990s. In comparison, there were significant changes in developing countries after the 1990s (*Fig. 9–14*).

In all developed and deindustrialized countries, the share of agriculture GDP is below the world average, while the share of services GDP is average and above. While Germany showed stability in the world average in industrial GDP, the industrial income in Japan and Canada, which remained above the average until the 2010s, started to decline in these years. It can be said that Japan is avoiding a decrease in its industrial income while it continues to fall in Canada. In other developed economies where industrial income was below the world average, it continued to decline steadily: USA, England, Italy, and France.

In developing countries, the share of agricultural GDP in total income fell sharply between 1991 and 2000 in industrializing nations and continued to decline. While declining steadily in China, agricultural income in India and Indonesia slowed down after the 2000s. In these countries, after 2008,

Figure 8. World GDP shares



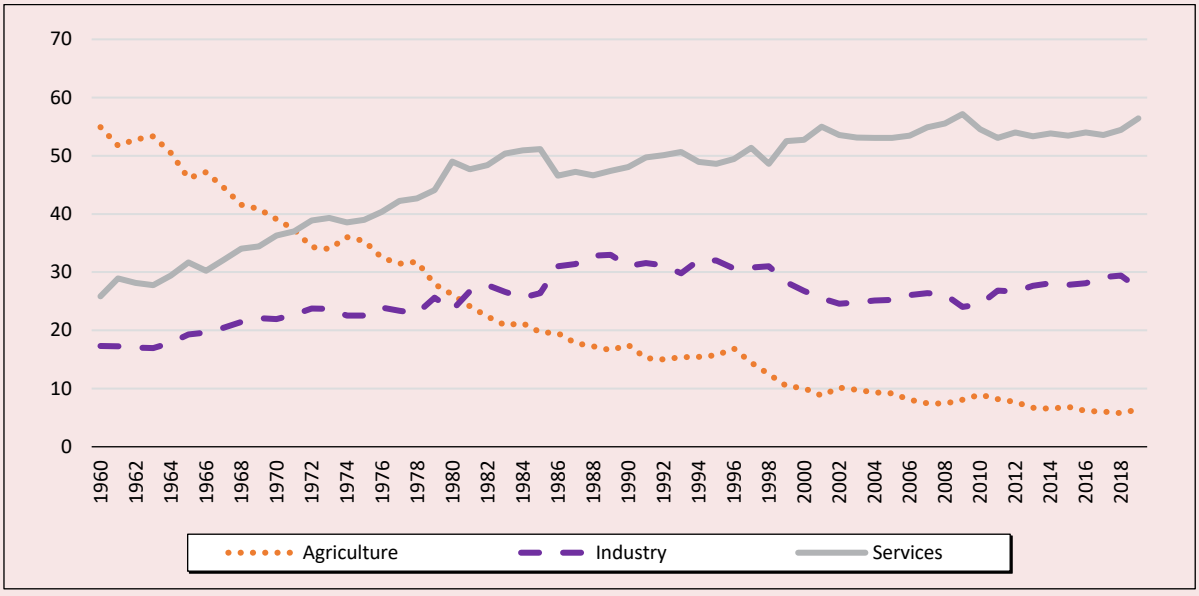
Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

there was a stagnation in industry income and an increase in the service sector. However, among the selected countries, these are the countries with the highest share of industry GDP above the world average and the lowest share of services GDP.

While Russia had the highest share of industrial income among non-Western deindustrialized countries, with 45.86% in 1991, this ratio decreased sharply in the period after the disintegration of Soviet Russia and fell to 34.53% in 1995. The second sharp decline in Russia occurred in the late 90s and early 2000s during the period known as the Russian economic crisis or the Ruble crisis. Brazil caught a growth trend in its industrial income between 1991–1994 and experienced a severe decrease between 1994–1995. The share of industry income was 35.42% in 1994, was 23.38% in 1995. Industry income, which remained relatively stable at 20% until 2014, showed a decreasing trend after this date. While the share of service sector revenue in Brazil reached its highest level at 73.33% in 1993, it fell abruptly to 56.89% in 1994. After Brazil opened its economy to the world markets in 1989, it faced hyperinflation. Although it got rid of this bottleneck for a while with its local monetary policies, it could not maintain these policies due to the Asian crisis and the Ruble crisis in Russia and started to implement the IMF program in 1999.

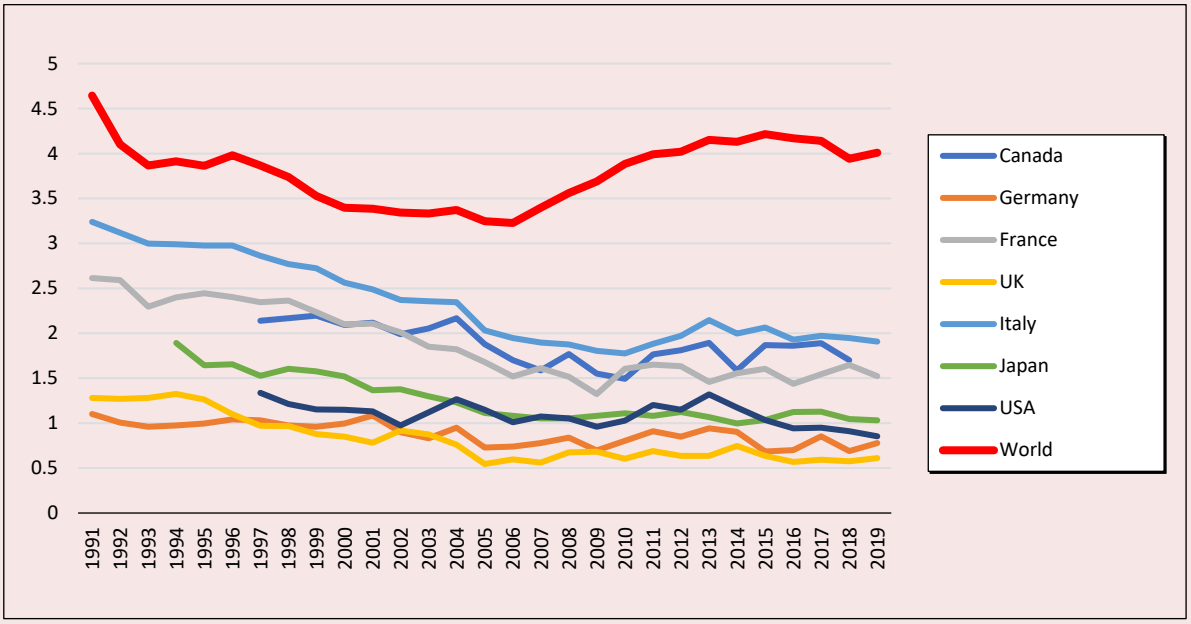
Türkiye's industry has reached the highest share in GDP since 1960, with 32.97% in 1989. The industry income, around 30% in 1986–1998, decreased to 28.28% in 1999 and stabilized in the 28–26% band since 2000. It can be argued that Türkiye's implementation of the IMF program in 1999 and development policies based on the transformation of industry in the urban area are non-structural protections implemented against crises. A more dramatic reduction than the share of industrial income occurred in the agricultural sector. While the percentage of agricultural GDP in the total was 54.91% in 1960, it decreased to 26.14% between 1960 and 1980. Another significant decrease was observed in the 1996–2000 period, with agricultural GDP falling from 16.85% to 10.03%, reaching 6.4% in 2019 (*Fig. 15*).

Figure 9. Türkiye GDP sectoral shares



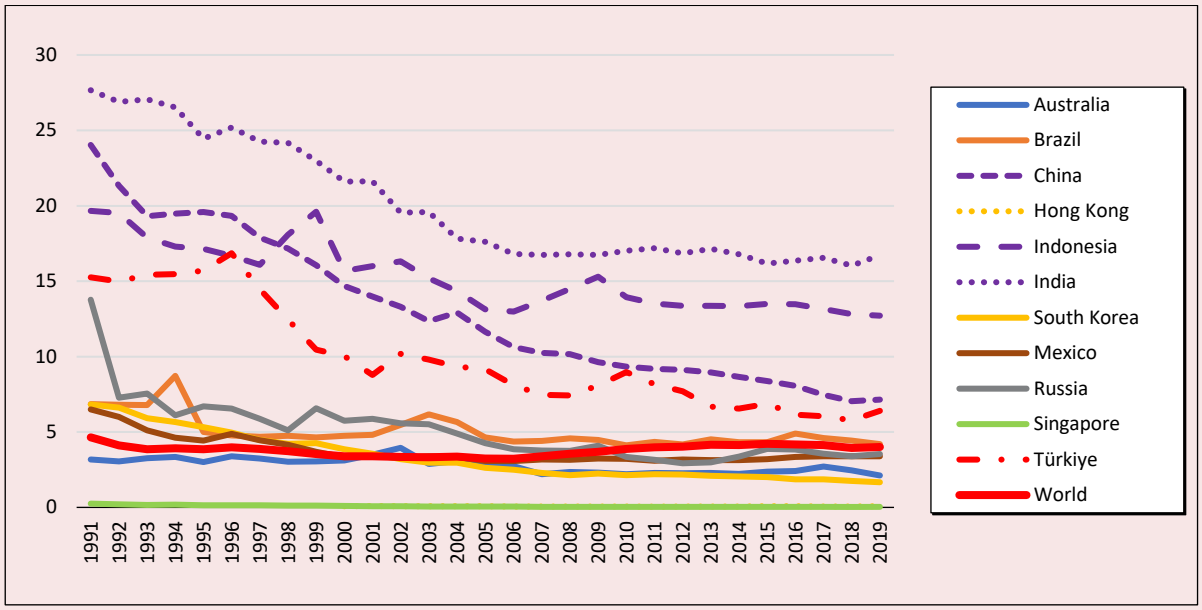
Own elaboration according to: TURKSTAT (https://data.tuik.gov.tr/); World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

Figure 10. Developed countries' agriculture GDP shares



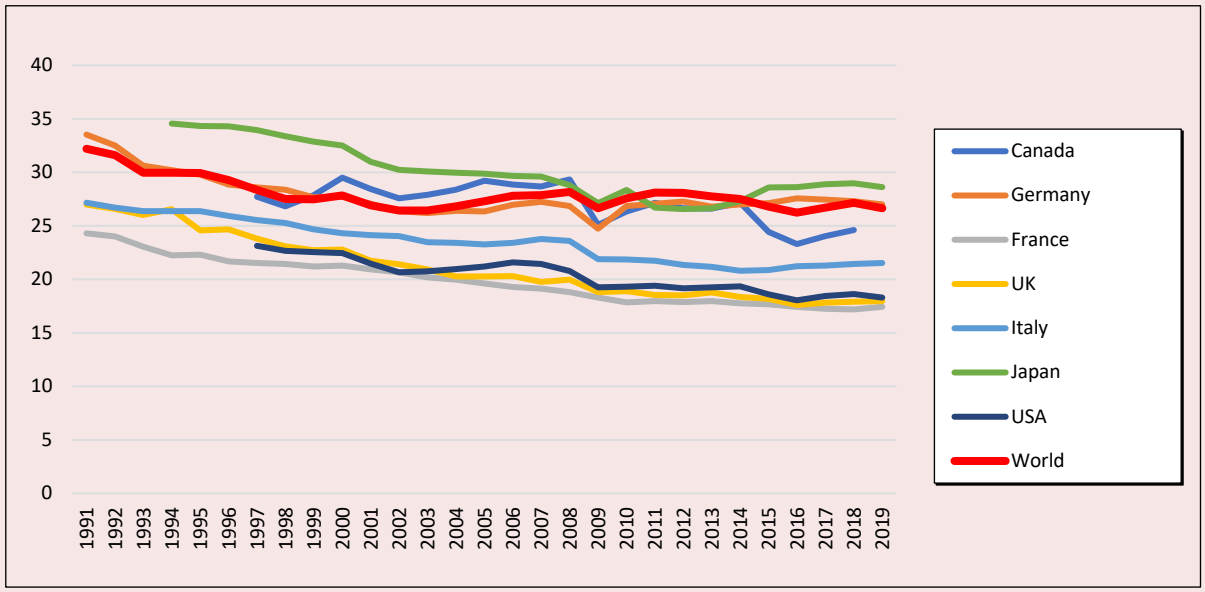
Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

Figure 11. Developing countries' agriculture GDP shares



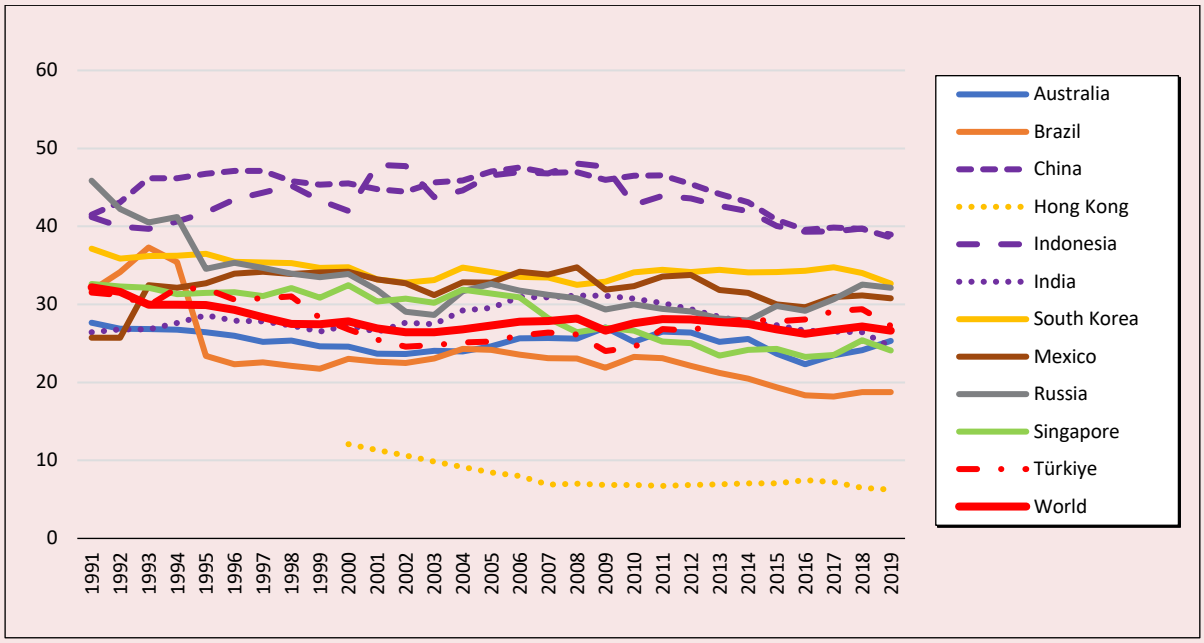
Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

Figure 12. Developed countries' industry GDP shares



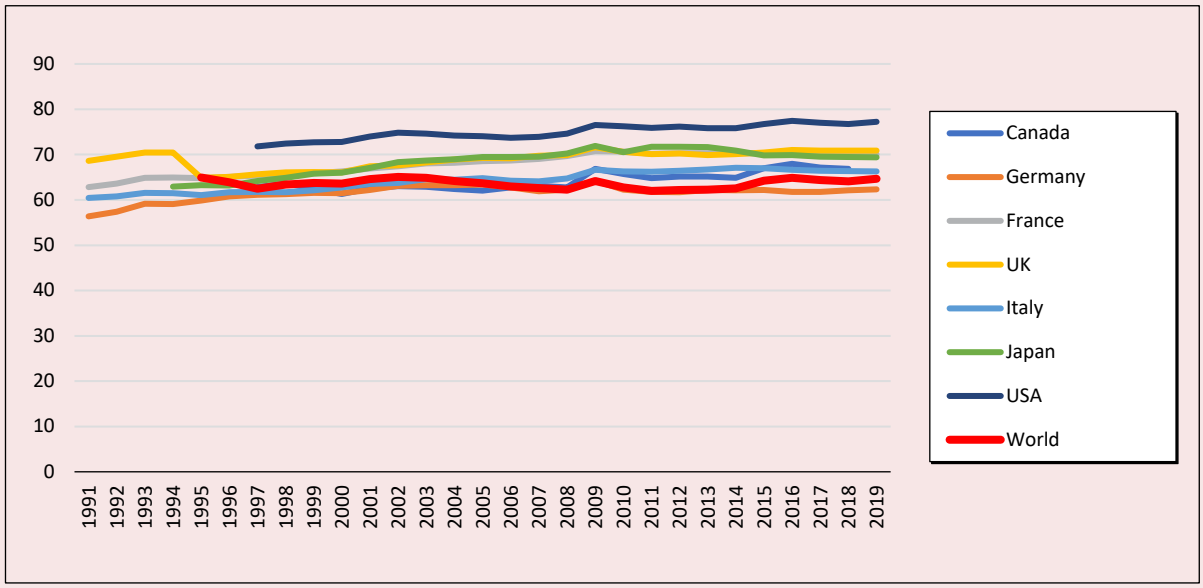
Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

Figure 13. Developing countries' industry GDP shares



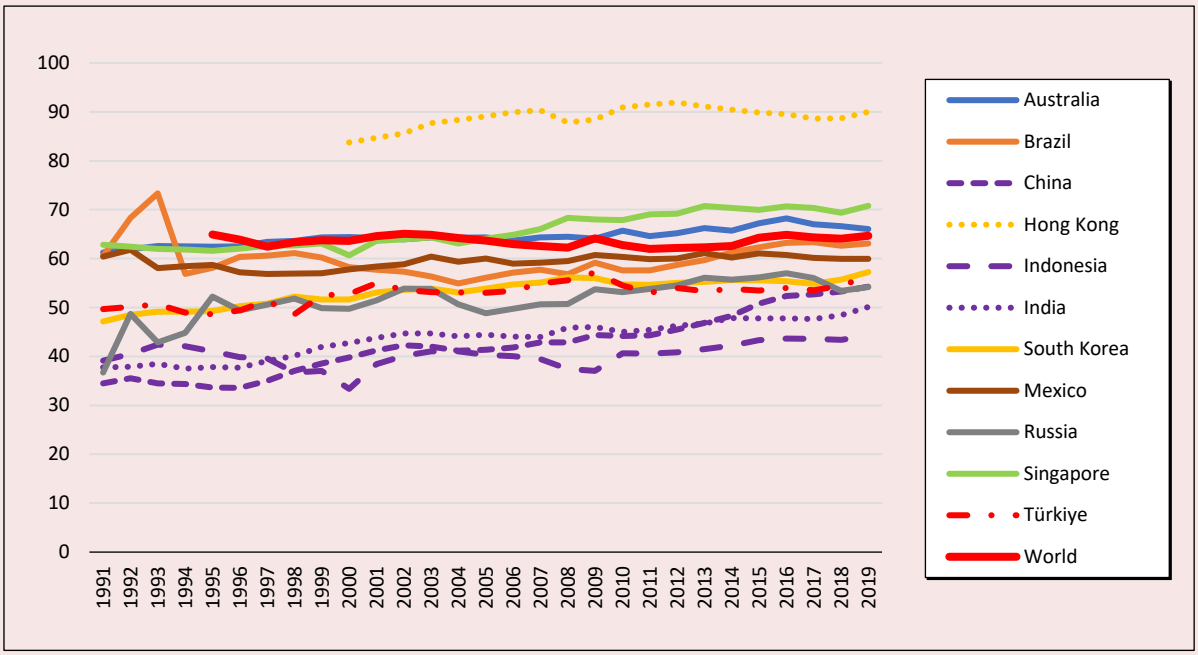
Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

Figure 14. Developed countries' service GDP shares



Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

Figure 15. Developing countries' service GDP shares



Own elaboration according to: World Bank (https://data.worldbank.org/); OECD (https://data.oecd.org/gdp/gross-domestic-product-gdp.htm); 2023 data.

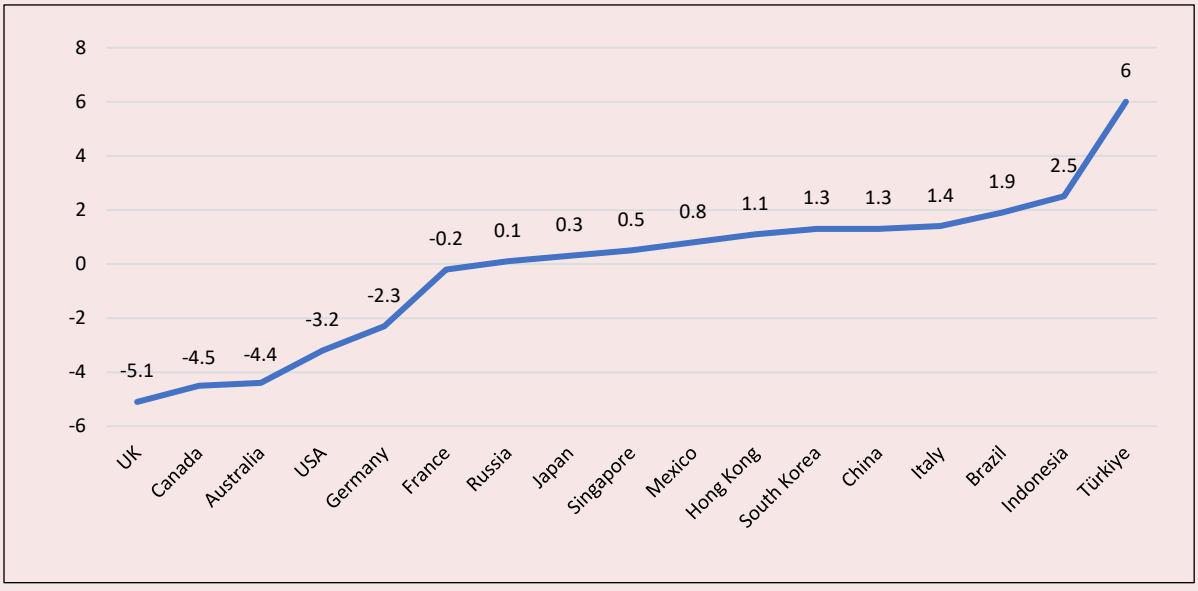
Therefore, deindustrialization in employment can be mentioned in Türkiye, but this situation can be expressed as stagnation in terms of industrial incomes. The factor causing the negative results is the radical decline in the agricultural sector and the shift of the workforce emerging from agriculture to the services sector.

Unemployment

According to the selected countries' unemployment rates, Türkiye's unemployment increased by 6 points from 7.7% to 13.7% in the 1991-2019 period (See Figure 16). According to the general trends in the world, it is seen that unemployment rates increased from 1991 to 1999 and stabilized after the 2000s. As an exception to this, unemployment rates in Türkiye started to grow from this date (*Fig. 17, 18*).

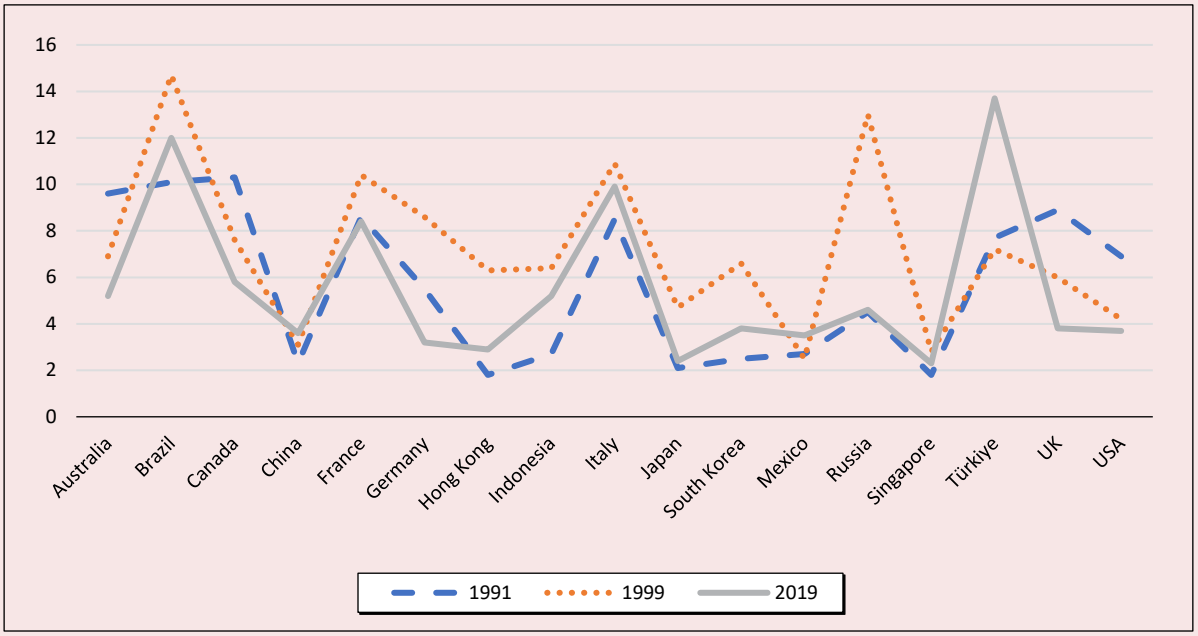
It can be argued that deindustrialization in Türkiye is premature and unfavorable in terms of the significant decrease in agricultural employment, the decline in industrial employment despite this, the stagnation in industrial income and the direct transition from agriculture to services. This has had not only economic but also serious social and urban consequences. It can be argued that the conditions for this were formed in the 1960s, during the industrialization period. Two major waves of migration from village to city took place in Türkiye in the 1960s and 1990s. Although the 1960s was already a period of industrialization, industrial production could not provide sufficient employment for the population that had to migrate to the cities by breaking the fence in the countryside. While only a part of the migrating population is employed in the factories, the majority of them are scattered in the service sector jobs, small production, tradesmen or informal sector, which are diversified in the production geography. While the service sector share was 25.84% in 1960, it reached 50% in the early 1980s and was 56.40% by 2019. By the 1980s, the service sector was already approaching the 2019 rate. Therefore, in the post-2000 deindustrialization period, there has not been a service expansion to the extent that the labor force emerging from agriculture and industry can be absorbed. Therefore, unemployment after 2000 has become higher and more chronic than unemployment in the 1960s and 1980s.

Figure 16. Unemployment rates change in selected countries 1991 and 2019



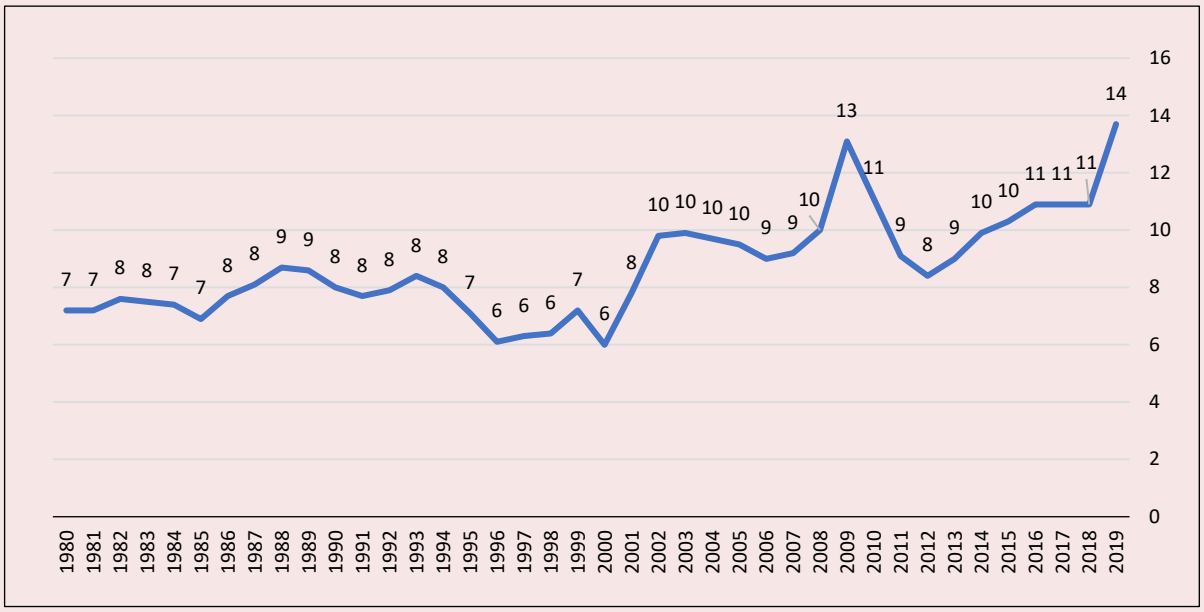
Own elaboration according to: ILO (https://ilostat.ilo.org/); IMF (https://www.imf.org/); 2023 data.

Figure 17. Unemployment rates periodical changes



Own elaboration according to: ILO (https://ilostat.ilo.org/); IMF (https://www.imf.org/); 2023 data.

Figure 18. Türkiye unemployment rates



Own elaboration according to: TURKSTAT (https://data.tuik.gov.tr/); ILO (https://ilostat.ilo.org/); IMF (https://www.imf.org/); 2023 data.

Conclusion

According to international comparisons, it can be argued that deindustrialization shows different trends depending on the political economy and geopolitical-geoeconomic conditions of the countries. In this study, deindustrialization trends, which are discussed in terms of their regional character within the scope of the global restructuring of production, did not change radically between the analysis period 1991–2019 in developed countries, while three different trends are classified in developing countries.

In the first group, India, Indonesia, and China have rapidly industrialized as major parties in the transfer of activities from the West to the East. The second group is deindustrialized when industrial development was at a high level; Russia, South Korea and the island economies of Hong Kong, Singapore and Australia are in this group. The third group includes Türkiye, Brazil and Mexico, which have begun to deindustrialize while their industrial development is still in progress.

The primary trend distinguishing Türkiye and similar Latin countries from other developing-deindustrialized countries is that they have entered the deindustrialization process as agricultural societies. In these countries, deindustrialization trends began to be seen while the transition from the agricultural sector to the industrial sector was still in progress. In other words, industrial production was interrupted. This situation can be associated with premature deindustrialization and negative deindustrialization theses in the literature. Classically, it can be said that Türkiye and Brazil show similar trends in sectoral transitions. The similarity of deindustrialization trends in these two countries, whose historical political economy, international relations, and geopolitical positions are different, is based on the similarity of the import substitution industrialization model and the international monetary policies implemented after it.

Since the 1970s, under the leadership of the Reagan-Thatcher regimes, developed countries have turned to a new capital accumulation strategy in underdeveloped-developing countries over the neoliberal ideology against the crisis. This situation has led to severe economic and political concerns and the interruption of industrialization in Türkiye and similar countries, where the search for a social state and democratization continues. Subsequently, the liberalization and privatization process started rapidly in the foreign trade and finance field, including the programs of international monetary institutions (Şenses, 2004).

It can be argued that the conditions of deindustrialization in Türkiye formed in the 1960s until 1998, but the economic policies after 2000 were decisive at the onset of deindustrialization. Under global trade pressure and economic growth policies based on the transformation of cities as short-term, centralized solutions at the local level, there is a risk that deindustrialization will become a permanent, structural problem.

The stagnation of industrial added value before reaching the high level that developed economies have reached and started to develop technology, also prevents the emergence of new industries and products with high added value. Here, it is necessary to underline that innovation, creativity, technology development and the knowledge and expertise required for all these can develop depending on production. This vicious circle was tried to be overcome with short-term solutions in the process that started in the 1990s and radicalized after 2000. At the beginning of these are the transformation of cities, the increase in added value in the construction and related sectors. On the other hand, serious investments were made in the defense industry in the following periods and progress was made in product development. However, the relative increases are of a periodic character under the health conditions during the pandemic and the international political conditions after it. In the long run, a real-structural economic development in Türkiye can only be achieved with economic policies that will realize the existing dynamic advantages that spread to Anatolia in agricultural and industrial production areas with high potential.

References

Alderson A.S. (1999). Explaining deindustrialization: Globalization, failure, or success? *American Sociological Review,* 64(5), 701–721. Available at: https://www.jstor.org/stable/pdf/2657372.pdf?refreqid=excelsior%3A6b172838fd63edcb812f558ef104b761

Amin S. (1991). The ancient world-systems versus the modern capitalist world-system, *Review (Fernand Braudel Center),* 14(3), 349–385. Available at: https://www.jstor.org/stable/40241188?seq=5#metadata_info_tab_contents

Amin S. (2018 [1988]). *Avrupa-Merkezcilik, Bir İdeolojinin Eleştirisi.* Yordam Kitap, İstanbul. İlk basım: 1988, Paris.

Ayik U. (2018). *Ekonomi politikalarının Bir Yansıması Olarak Sanayisizleşme ve Mekânsal Değişim.* Doktora Tezi. İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü, Coğrafya Anabilim Dalı, Tez Danışmanı: Prof.Dr. Sedat Avcı. Available at: https://www.researchgate.net/publication/332268649

Ayik U., Avcı S. (2018). Ekonomik ve Mekânsal Boyutlarıyla Sanayisizleşme, *TÜCAUM 30. Yıl Uluslararası Coğrafya Sempozyumu Kitabı,* 1276–1288. Available at: https://www.researchgate.net/publication/330688312

Bakır E., Özçelik E., Özmen E., Taşıran A.C. (2019). Türkiye'de Erken Sanayisizleşme. *Geçmişten Geleceğe Türkiye Ekonomisi; Fikret Şenses'e Armağan* içinde, Derleyenler: Murat Koyuncu, Hakan Mıhcı, A. Erinç Yeldan, İletişim Yayınları, İstanbul. İlk basım.

Baycan-Levent T. (2005). Globalization and development strategies for Istanbul: Regional policies and great urban transformation projects. In: la Greca P. (Ed.). *Planning in a More Globalized and Competitive World.* ISOCARP.

Bluestone B. (1984). Is deindustrialization a myth? Capital mobility versus absorptive capacity in the U.S. economy. *The Annals of the American Academy of Political and Social Science, Deindustrialization: Restructuring the Economy*, 475, 39–51. Available at: https://www.jstor.org/stable/pdf/1043546.pdf?refreqid=excelsior%3A0e6ef85328737ab66d75fdebc8d03b75

Braudel F. (2017[1949]). *AKDENİZ; II. Felipe Döneminde Akdeniz ve Akdeniz Dünyası I. Ç*eviren: Mehmet Ali Kılıçbay, Doğubatı Yayınları, 2017 Ankara. İlk basım 1949, Paris.

Clark C. (1940). *The Conditions of Economic Progress.* London: Macmillan. Available at: https://archive.org/details/in.ernet.dli.2015.223779

Dasgupta S., Singh A. (2006). *Manufacturing, Services and Premature Deindustrialization in Developing Countries; A Kaldorian Analysis*. Available at: https://www.wider.unu.edu/sites/default/files/rp2006-49.pdf

Doğruel A.S, Doğruel F. (2018). Two phases of deindustrialization policies in Istanbul "İstanbul'da Sanayisizleşme Politikalarının İki Safhası", Marmara İktisat Dergisi. *Journal of Research in Economics*, 2(2), 186–201. Available at: https://dergipark.org.tr/tr/download/article-file/594432

Doğruel A.S., Doğruel F. (2019). Küreselleşme, Unutulan Sanayi Politikaları ve Sanayisizleşme. *Çalışma ve Toplum Dergisi,* 1, 209–230. Available at: https://www.calismatoplum.org/makale/kuresellesme-unutulan-sanayi-politikalarive-sanayisizlesme

Ficher A.G.B. (1939). *Production, Primary, Secondary and Tertiary.* Available at: HTTPS://ONLINELIBRARY.WILEY.COM/DOI/FULL/10.1111/J.1475-4932.1939.TB01015.X

Frank A.G. (2010 [1998]). *Yeniden Doğu; Asya Çağında Küresel Ekonomi.* Çeviren: Kâmil Kurtul, İmge Kitabevi, İstanbul. İlk basım: 1998, University of California Press.

Kaldor N. (1966). *Causes of the Slow Rate of Economic Growth of the United Kingdom.* Cambridge University Press. Available at: https://dokumen.pub/causes-of-the-slow-rate-of-economic-growth-of-the-united-kingdom-an-inaugural-lecture.html

Kepenek Y. (1999). *Türkiye'nin 1980 Sonrası Sanayileşme Süreci.* 75 yılda Çarklardan 'Chip'lere içinde. Tarih Vakfı Yayınları, İstanbul, Sf. 229-240.

Keyder Ç. (2014). İkinci bölüm; İstanbul'da Emek ve Ekonomi Sunuş yazısı. *Yeni İstanbul Çalışmaları; Sınırlar, Mücadeleler, Açılımlar.* Hazırlayanlar: Ayfer Bartu Candan, Cenk Özbay, Metis Yayınları, 1. Basım, İstanbul.

Kollmeyer C. (2009a). Explaining deindustrialization: How affluence, productivity growth, and globalization diminish manufacturing employment, *American Journal of Sociology,* 114(6), May, 1644–1674. Available at: https://www.jstor.org/stable/pdf/10.1086/597176.pdf?refreqid=excelsior%3A376542acf3937ffb3ad08737029db525

Kollmeyer C. (2009b). Consequences of North-South trade for affluent countries: A new application of unequal exchange theory. *Review of International Political Economy,* 16(5), December, 803–826. Available at: https://www.jstor.org/stable/pdf/27756195.pdf?refreqid=excelsior%3A7f14ae982a99664bdc020f19b26fde40

Kolsuz G., Yeldan A.E. (2014). 1980 Sonrası Türkiye Ekonomisinde Büyümenin Kaynaklarının Ayrıştırılması. *Çalışma ve Toplum,* 1, 49–66. Available at: http://calismatoplum.org/sayi40/kolsuz.pdf

Kornev A. (2022). How the Russian economy can grow based on its reindustrialization. *Russian Social Science Review*, 63(1–3), 80–97. Available at: https://doi.org/10.1080/10611428.2022.2111174

Köse Z., Dineri E. (2020). Sanayisizleşmeyi Etkileyen Faktörler Üzerine Bir İnceleme: Türkiye Örneği. *Dicle Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi,* 10(20), 579–597. Available at: https://www.researchgate.net/publication/346563131

Krugman P. (1988). *Deindustrialization, Reindustrialization, and the Real Exchange Rate, Working Paper No. 2586.* Cambridge, MA. Available at: https://www.nber.org/system/files/working_papers/w2586/w2586.pdf

Krugman P. (1991). Increasing returns and economic geography. *The Journal of Political Economy,* 99(3), 483–499. Available at: https://pr.princeton.edu/pictures/g-k/krugman/krugman-increasing_returns_1991.pdf (accessed: November 2, 2022).

Kurşuncu H. (2016). *Türkiye'de Sanayi Sektöründe Yaşanan Dönüşümlerin İstanbul Kentinde Farklı Ortaya Çıkış Biçimleri*. İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü, Siyaset Bilimi ve Kamu Yönetimi Anabilimdalı, Tez Danışmanı: Prof.Dr. Hatice Kurtuluş. Available at: https://www.eskop.com/images/UserFiles/Documents/Editor/sanayisizles%CC%A7me.pdf

Kuznets S.S. (1973). Modern economic growth: Findings and reflections. *The American Economic Review,* 63(3), 247–258. Available at: http://www.piketty.pse.ens.fr/files/Kuznets1973.pdf

Lorenzi J.H., Berrebi M. (2016). Chapter 4: The impact of deindustrialization. In: *A Violent World. Modern Threats to Economic Stability*. Palgrave Macmillan. Available at: https://link.springer.com/content/pdf/10.1007%2F978-1-137-58993-4.pdf

Marshall A. (1890). *Principles of Economics*. Available at: https://eet.pixel-online.org/files/etranslation/original/Marshall,%20Principles%20of%20Economics.pdf

Meçik O., Aytun U. (2018). Türkiye ekonomisinde erken sanayisizleşmeye bölgesel bir yaklaşım. *ODTÜ Gelişme Dergisi,* 45, 59–81. Available at: https://open.metu.edu.tr/bitstream/handle/11511/58152/980-6118-1-PB.pdf

Öz S. (2018). Dünyada ve Türkiye'de Sanayisizleşme. *EAF Ekonomik Araştırma Forumu,* Araştırma Notu 18–03. Available at: https://eaf.ku.edu.tr/wp-content/uploads/2019/06/eaf_an1803.pdf

Prebisch R. (1950). *The Economic Development of Latin America and Its Principal Problems*. Available at: http://archivo.cepal.org/pdfs/cdPrebisch/002.pdf

Rodrik D. (2016). Premature deindustrialization. *Journal of Economic Growth,* 21, 1–33. Available at: https://link.springer.com/content/pdf/10.1007%2Fs10887-015-9122-3.pdf

Rostow W.W. (1959). The stages of economic growth. *The Economic History Review,* 12(1), 1–16. Available at: https://www.ufjf.br/oliveira_junior/files/2009/06/rostow.pdf

Rowthorn R. Wells J. (1987). *De-Industrialization and Foreign Trade*. Cambridge: Cambridge University Press.

Rowthorn R., Ramaswamy R. (1997). Deindustrialization – its causes and implications. *International Monetary Fund, Economic Issues*, 10. Available at: https://www.researchgate.net/publication/228288050_Deindustrialization_Its_Causes_and_Implications

Ryazanov V. (2018). Turn to new industrialization: The world economy and Russia. In: *Proceedings of the Third International Economic Symposium*. DOI: 10.2991/ies-18.2019.5. Available at: https://www.atlantis-press.com/proceedings/ies-18/125924746

Şenses F. (2004). Neoliberal Küreselleşme Kalkınma için Bir Fırsat mı, Engel mi? *Middle East Technical University ERC Working Paper in Economic,* 4(9), 1–27. Available at: https://erc.metu.edu.tr/en/system/files/menu/series04/0409.pdf

Şıklar I., Tonus O. (2007). Is it possible to deindustrialize before industrialization? The Turkish case. *Economicky Caposis,* 55(6), 594–611. Available at: https://earsiv.anadolu.edu.tr/xmlui/handle/11421/18860

Yanıkkaya H., Altun A., Tat P. (2019). Openness and deindustrialization: A Turkish case. *Bogazici Journal*, 33(2), 140–164. Available at: http://www.bujournal.boun.edu.tr/_uploads/33_2_4.pdf

Yeldan E. (2006). *Küreselleşme Sürecinde Türkiye Ekonomisi; Bölüşüm, Birikim ve Büyüme*. İletişim Yayınları, İstanbul. İlk basım 2001.

Yeldan E. (2011). Neoliberalizmin İdeolojik Bir Söylemi Olarak Küreselleşme. *İktisat Üzerine Yazılar I Küresel Düzen: Birikim, Devlet ve Sınıflar, Korkut Boratav'a Armağan içinde*, Derleyenler: A.H. Köse, F. Şenses, E. Yeldan, İletişim Yayınları, 429–453. İlk basım 2003.

Yeldan E., Yıldırım D. (2015). Küreselleşme ve Sanayisizleşme Bağlamında Türkiye'de ve Dünyada Demokrasi Açığı. *Çalışma ve Toplum Dergisi,* 2, 65–87.

Yücebaş E. (2014). *Yeni Bölgeselleşme Paradigması ve Sanayisizleşme: İzmir Örneği.* Doktora Tezi. Dokuz Eylül Üniversitesi, Sosyal Bilimler Enstitüsü, Kamu Yönetimi Anabilim Dalı, Kamu Yönetimi Programı, Tez Danışmanı: Yrd. Doç. Dr. Şermin Atak. Available at: https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=BLdcFtILoyc4-uo3Xe_leA&no=S4xDYm8FpZpHu9UrAkuz8g

Zuenko I. (2020). Russia–China cooperation: A view from the region. *Russian Politics & Law.* Available at: https://doi.org/10.1080/10611940.2020.1835069

Appendix 1 – Data for the Post-Pandemic

According to the latest available data of the countries within the scope of the research, industrial employment shares the post-pandemic are listed below *(Table 4*).

Table 4. Post-pandemic industrial employment shares, %

Country	2019	2022	2021
Australia	19.06	18.70	
Brazil	19.99	**20.04**	
Canada	19.25	19.20	
China	27.42		**28.00***
Germany	27.18	26.90	
France	20.43	19.00	
United Kingdom	18.12		18.00*
Indonesia	22.36	21.90	
India	25.12	**26.10**	
Italy	25.87	**26.90**	
Japan	24.22	23.20	
South Korea	24.58	24.30	
Mexico	25.55	24.60	
Türkiye	25.32		**27.50**
United States	19.91	19.30	
Hong Kong	11.08	**12.40**	
Singapore	15.55		14.40
Russian Federation	26.79		26.60

* Estimated.
Own elaboration according to: ILO (https://ilostat.ilo.org/); World Bank (https://data.worldbank.org/); 2023 data.

According to the available data, there was no significant change in sectoral employment rates after the pandemic. However, a relative increasing trend can be noted in some countries. These countries are: Italy among developed countries, China and India (category 1), Hong Kong (category 2), Turkiye and Brazil (category 3) among developing countries. Except for India and Turkiye, other countries reached these rates also before pandemic. In 2022, the highest levels reached since 1991 were experienced with 26.10% for India and 27.50% for Turkiye. Even so, it is obvious that the relative impact of the trends during the pandemic period in all countries is periodic.

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Public Opinion Monitoring of the State of the Russian Society

As in the previous issues, we publish the results of the monitoring of public opinion concerning the state of the Russian society. The monitoring is conducted by VolRC RAS in the Vologda Oblast[1].

The following tables and graphs show the dynamics of several parameters of social well-being and socio-political sentiment of the region's population according to the results of the latest round of the monitoring (August 2023) and for the period from August 2022 to August 2023 (the last seven surveys, that is, almost a year).

We compare the results of the surveys with the average annual data for 2000 (the first year of Vladimir Putin's first presidential term), 2007 (the last year of Vladimir Putin's second presidential term, when the assessment of the President's work was the highest), 2011 (the last year of Dmitry Medvedev's presidency), and 2012 (the first year of Vladimir Putin's third presidential term).

We also present the annual dynamics of the data for 2018 and for 2020–2022[2].

In June – August 2023 the share of positive assessments of the RF President's work did not change significantly (60–61%). The proportion of negative judgments is 22–23%[3].

For the period from August 2022 to August 2023, the share of positive assessments of the RF President's work is 60%. The share of negative judgements is 22%[4].

[1] The surveys are held six times a year in the cities of Vologda and Cherepovets, in Babayevsky, Velikoustyugsky, Vozhegodsky, Gryazovetsky, Tarnogsky Kirillovsky, Nikolsky municipal okrugs, and in Sheksninsky municipal district. The method of the survey is a questionnaire poll by place of residence of respondents. The volume of a sample population is 1,500 people 18 years of age and older. The sample is purposeful and quoted. The representativeness of the sample is ensured by the observance of the proportions between the urban and rural population, the proportions between the inhabitants of settlements of various types (rural communities, small and medium-sized cities), age and sex structure of the Oblast's adult population. Sampling error does not exceed 3%.

More information on the results of VolRC RAS surveys is available at http://www.vscc.ac.ru/.

[2] In 2020, four rounds of the monitoring were conducted. Surveys in April and June 2020 were not conducted due to quarantine restrictions during the spread of COVID-19.

[3] Here and elsewhere, in all tables and in the text, positive changes are highlighted in green, negative changes are highlighted in red, and no changes – in blue. Due to the fact that the changes of +/- 2 p.p. fall within the limits of sampling error, they are considered insignificant and are marked in blue.

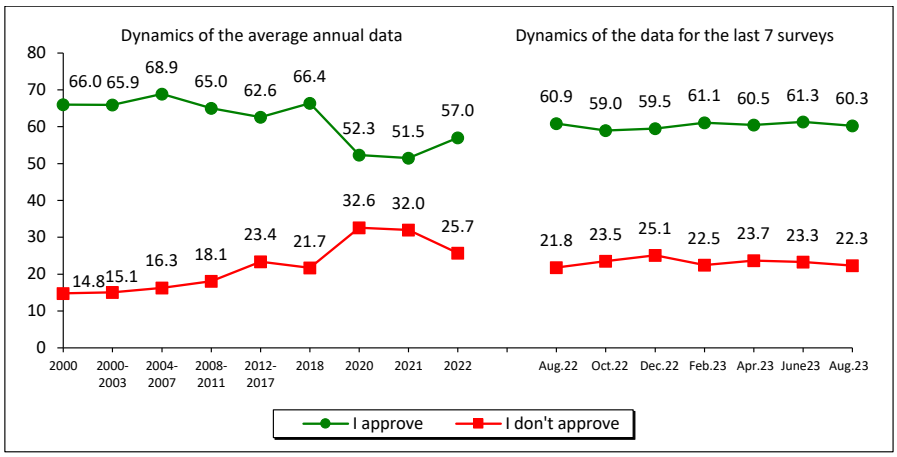
[4] Here and elsewhere in the text, the results of a comparative analysis of the data from the survey conducted in August 2023 and the results of the monitoring round conducted in August 2022 are given in the frame.

How would you assess the current work of…? (% of respondents)

Answer option	Dynamics of the average annual data								Dynamics of the data for the last 7 surveys							Dynamics (+/-), Aug. 2023 to	
	2000	2007	2011	2012	2018	2020	2021	2022	Aug. 2022	Oct. 2022	Dec. 2022	Feb. 2023	Apr. 2023	June 2023	Aug. 2023	Aug. 2022	June 2023
RF President																	
I approve	66.0	75.3	58.7	51.7	66.4	52.3	51.5	57.0	60.9	59.0	59.5	61.1	60.5	61.3	60.3	-1	-1
I don't approve	14.8	11.5	25.5	32.6	21.7	32.6	32.0	25.7	21.8	23.5	25.1	22.5	23.7	23.3	22.3	+1	-1
Chairman of the RF Government*																	
I approve	-*	-*	59.3	49.6	48.0	38.7	39.9	45.4	47.5	48.1	50.1	49.3	48.3	49.2	50.8	+3	+2
I don't approve	-	-	24.7	33.3	31.6	40.4	37.6	32.0	29.4	31.3	29.9	27.9	28.1	27.1	26.1	-3	-1
Vologda Oblast Governor																	
I approve	56.1	55.8	45.7	41.9	38.4	35.0	36.7	40.9	43.3	43.0	45.5	47.1	48.3	48.7	48.1	+5	-1
I don't approve	19.3	22.2	30.5	33.3	37.6	42.5	40.5	35.8	32.5	33.9	35.2	33.0	32.3	30.7	29.7	-3	-1

Wording of the question: "How do you assess the current work of ...?"
*Included in the survey since 2008.

How would you assess the current work of the RF President?
(% of respondents, VolRC RAS data)*



Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
I approve	-1	-1
I don't approve	+1	-1

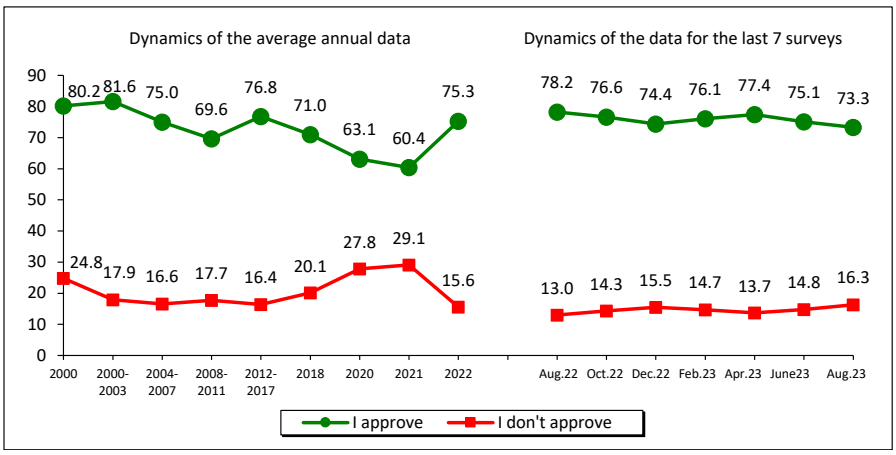
* Here and elsewhere, all graphs show the average annual data for 2000, 2018, 2020, 2021, 2022, as well as the average annual data for the periods 2000–2003, 2004–2007, 2008–2011, 2012–2017 that correspond to presidential terms.

For reference:

According to VCIOM, the level of approval of the President's work from June to the first half of August 2023 decreased by 2 percentage points (from 75 to 73%). The share of negative judgments did not change significantly and amounted to 15–16%.

From August 2022 to the first half of August 2023, the share of positive assessments of the work of the head of state decreased by 5 percentage points (from 78 to 73%). The share of negative judgments increased by 3 percentage points (from 13 to 16%).

In general, do you approve or not approve of the work of the RF President?
(% of respondents; VCIOM data)



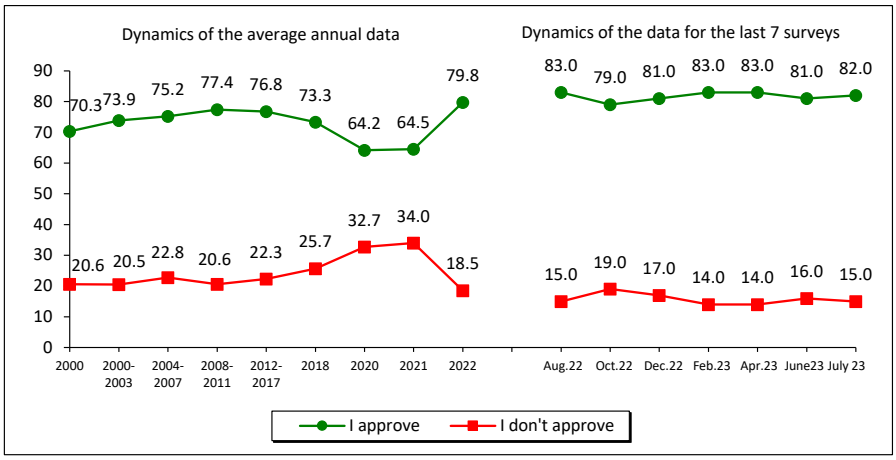
Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
I approve	-5	-2
I don't approve	+3	+2

Wording of the question: "In general, do you approve or not approve of the work of the President of the Russian Federation?"
Data for August 2023 represent the average for two surveys: (August 6, 2023 and August 13, 2023).
Source: VCIOM. Available at: https://wciom.ru/

According to Levada-Center, the share of positive assessments of the President's work in June – July 2023 amounted to 81–82%; the proportion of negative judgments was 15–16%.*

There were no significant changes over the past 12 months: the share of positive assessments is 82–83%, negative – 15%.

In general, do you approve or not approve of the work of Vladimir Putin as President of Russia?
(% of respondents; Levada-Center* data)



Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
I approve	-1	+1
I don't approve	0	-1

Wording of the 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

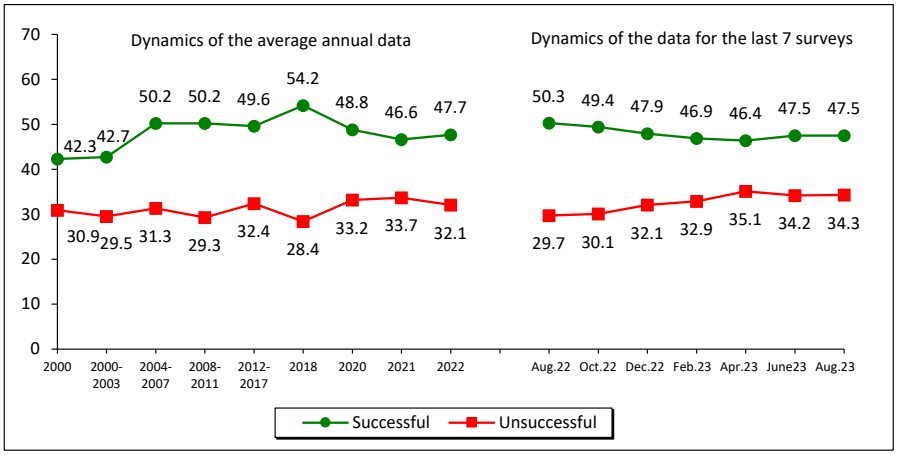
* Included in the register of foreign agents.

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 position to be successful did not change and amounts to 48%. The proportion of those who hold to the opposite point of view also remained at the level of June 2023 (34%).

Over the past 12 months (from August 2022 to August 2023) the share of positive assessments of the President's work aimed at strengthening Russia's international position declined slightly (by 3 percentage points, from 50 to 47%), while the share of negative judgments increased by 5 percentage points (from 29 to 34%).

Strengthening Russia's international position

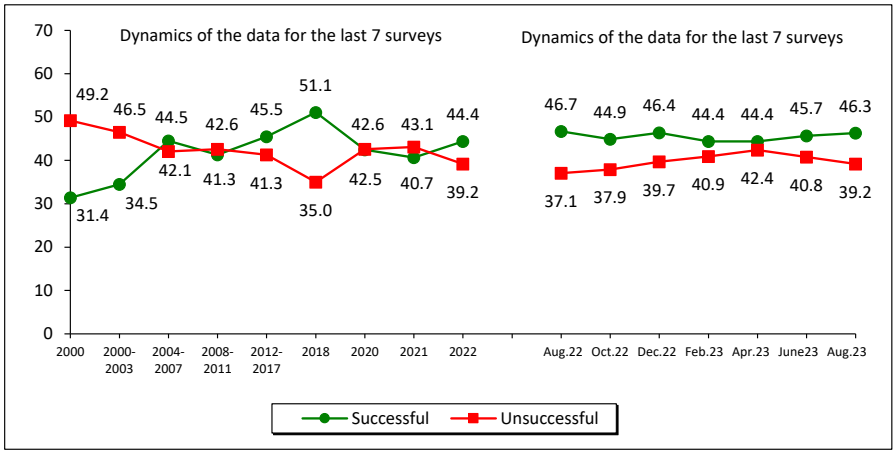


Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
Successful	-3	0
Unsuccessful	+5	0

In June – August 2023, the share of Vologda Oblast residents who positively assess the work of the head of state aimed at restoring order in the country was 46%; the proportion of negative judgments decreased slightly (by 2 percentage points, from 41 to 39%).

Over the past 12 months, the share of those who positively assess the work of the head of state to restore order in the country did not change (46–47%). %). The proportion of negative judgments increased 2 percentage points (from 37 to 39%).

Imposing order in the country

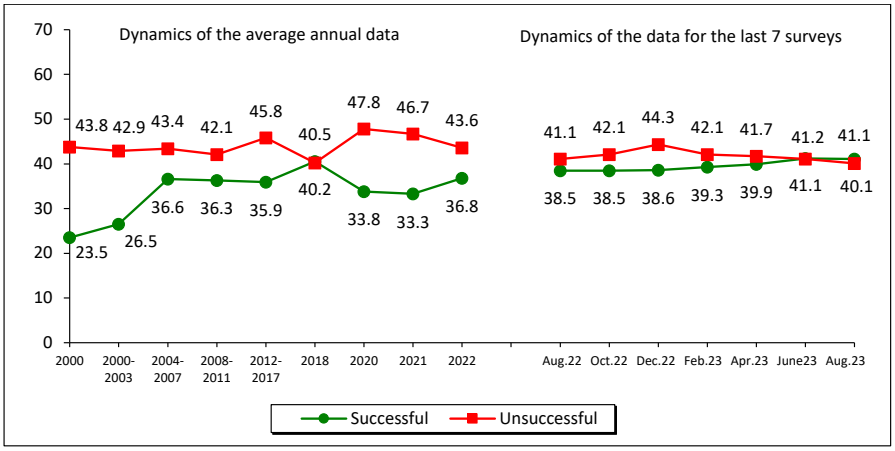


Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
Successful	0	+1
Unsuccessful	+2	-2

In June – August 2023, the share of positive assessments of the President's work to protect democracy and strengthen citizens' freedoms was 41%, negative – 40%.

From August 2022 to August 2023, there was a slight increase in the share of positive assessments (by 3 percentage points, from 38 to 41%). The proportion of negative judgments did not change and amounted to 40–41%.

Protecting democracy and strengthening citizens' freedoms

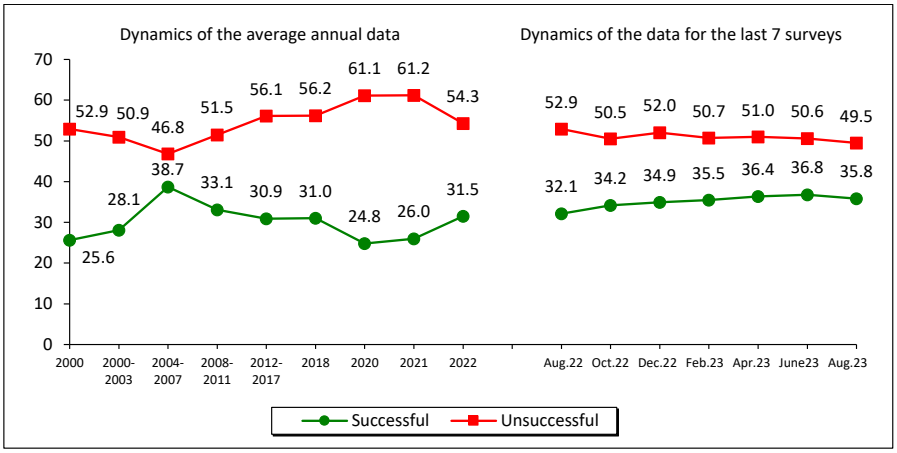


Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
Successful	+3	0
Unsuccessful	-1	-1

The share of positive judgments about the President's work to boost the economy and increase the welfare of citizens over the past two months amounted to 36–37%. The proportion of negative characteristics is 50–51%.

Over the past 12 months, the share of positive judgments has increased by 4 percentage points (from 32 to 36%), the proportion of negative ones decreased by 3 percentage points (from 53 to 50%).

Economic recovery, increase in citizens' welfare



Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
Successful	+4	-1
Unsuccessful	-3	-1

The structure of political preferences of Vologda Oblast residents remains stable. In June – August 2023, the share of people whose interests are expressed by the United Russia party was 39%, the Communist Party – 10%, the Liberal Democratic Party – 7–8%, the Just Russia party – 5%, the New People party – 2%.

From August 2022 to August 2023, there was an increase in support for United Russia (by 3 percentage points, from 36 to 39%), as well as a slight decrease in the proportion of people who believe that none of the parliamentary parties expresses their interests (by 4 percentage points, from 29 to 25%).

Which party expresses your interests? (% of respondents; VolRC RAS data)

Party	Dynamics of the average annual data												Dynamics of the data for the last 7 surveys							Dynamics (+/-), Aug. 2023 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	2022	Aug. 2022	Oct. 2022	Dec. 2022	Feb. 2023	Apr. 2023	June 2023	Aug. 2023	Aug. 2022	June 2023
United Russia	18.5	30.2	31.1	33.4	29.1	35.4	38.0	37.9	31.5	49.8	31.7	35.2	36.2	36.7	38.3	39.1	37.6	39.3	39.0	+3	0
KPRF	11.5	7.0	10.3	16.8	10.6	8.3	14.2	9.2	8.4	18.9	9.3	10.1	10.4	9.9	9.3	9.5	9.3	9.5	9.8	-1	0
LDPR	4.8	7.5	7.8	15.4	7.8	10.4	21.9	9.6	9.5	7.6	9.9	7.3	6.8	6.0	6.3	5.9	6.9	6.7	7.8	+1	+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	4.9	4.9	4.5	4.7	4.6	4.7	4.7	4.5	0	0
New People*	–	–	–	–	–	–	–	–	–	5.3	2.3	1.5	1.9	1.1	1.5	1.3	2.1	2.1	2.3	0	0
Other	0.9	1.8	1.9	–	2.1	0.3	–	0.7	0.5	–	0.2	0.3	0.1	0.5	0.0	0.1	0.1	0.0	0.2	0	0
None	29.6	17.8	29.4	–	31.3	29.4	–	28.5	34.2	–	33.9	30.6	29.3	30.6	29.9	28.0	28.0	26.5	25.2	-4	-1
I find it difficult to answer	20.3	21.2	13.2	–	11.7	12.0	–	11.2	11.1	–	10.0	10.1	10.5	10.8	9.9	11.4	11.4	11.4	11.2	+1	0

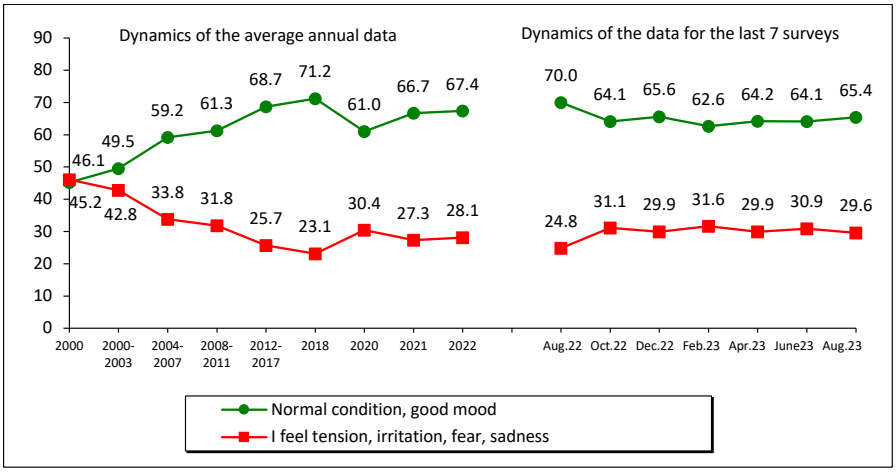
* The New People party was elected to the State Duma of the Russian Federation for the first time following the results of the election held on September 17–19, 2021.

Estimation of social condition (% of respondents; VolRC RAS data)

From June to August 2023, the share of positive assessments of social mood remained at the level of 64–65%. The proportion of people experiencing predominantly negative emotions also did not change and amounted to 30–31%.

Over the past 12 months, the proportion of people describing their daily emotional state as "normal, fine" decreased by 5 percentage points (с 70 до 65%). The proportion of those who experience mainly "tension, irritation, fear, sadness" increased by 5 percentage points, as well (from 25 to 30%).

Social mood

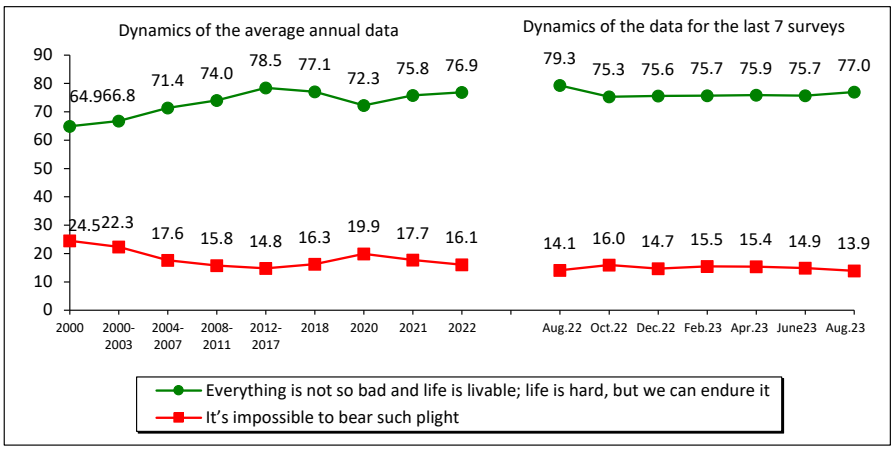


Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
Usual condition, good mood	-5	+1
I feel tension, irritation, fear, sadness	+5	-1

In June – August 2023, the share of those who believe that "everything is not so bad and life is livable" (76–77%) and the proportion of those who note that "it's impossible to bear such plight" (14–15%) remained stable.

From August 2022 to August 2023, the share of positive assessments of the stock of patience decreased slightly (by 2 percentage points, from 79 to 77%), while the share of negative judgments did not change significantly (14%).

Stock of patience

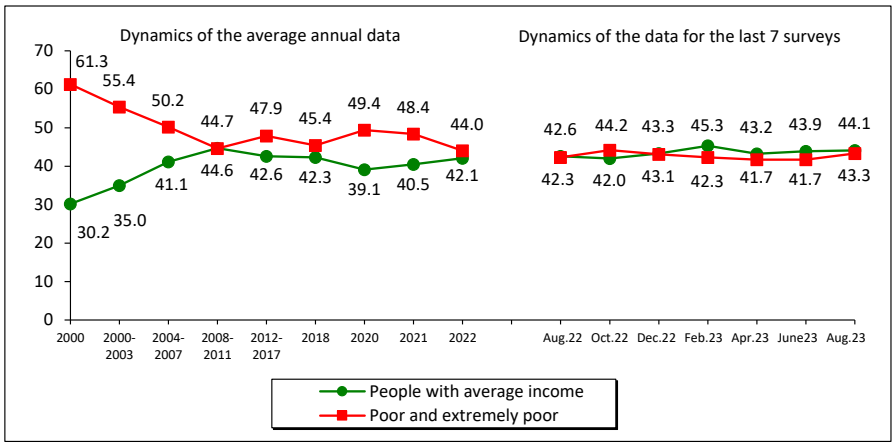


Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
Everything is not so bad and life is livable; life is hard, but we can endure it	-2	+1
It's impossible to bear such plight	0	-1

The proportion of Vologda Oblast residents subjectively classifying themselves as "poor and extremely poor" in June – August 2023 was 42–43%. The share of those who classify themselves as "middle-income" people was 44%.

There are also no noticeable changes in the annual dynamics. Over the past 12 months, the share of "poor and extremely poor" residents of the Vologda Oblast amounted to 42–43%, the proportion of "middle-income people" – 43–44%.

Social self-identification



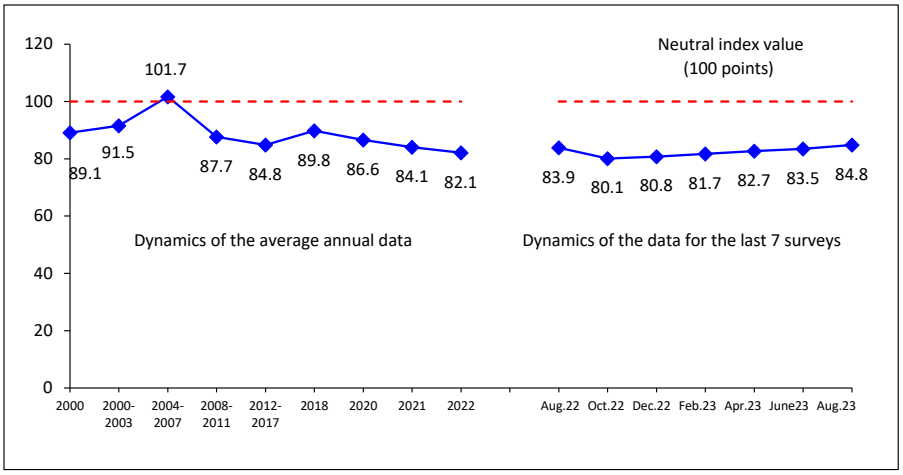
Dynamics (+/-), August 2023 to		
Answer option	Aug. 2022	June 2023
People with average income	+2	0
Poor and extremely poor	+1	+2

Question: "What category do you belong to, in your opinion?"

Over the past two months, the Consumer Sentiment Index (CSI) did not change and amounted to 84–85 points.

Compared with August 2022, there are no significant changes in the dynamics of the CSI (84–85 p.).

Consumer Sentiment Index (CSI, points; VolRC RAS data for the Vologda Oblast)



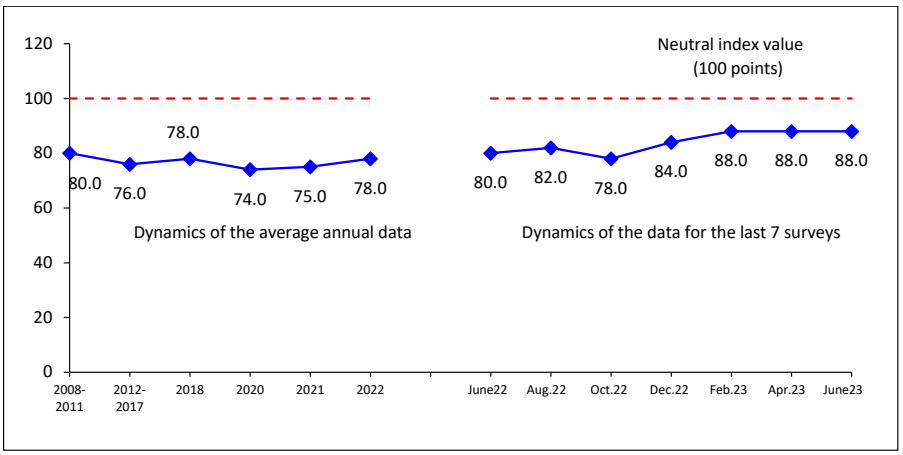
Dynamics (+/-), August 2023 to		
CSI	Aug. 2022	June 2023
Index value, points	+1	+1

For reference:

According to the latest data from the all-Russian polls conducted by Levada-Center, the Consumer Sentiment Index for the period from April to June 2023 did not change and amounted to 88 points.*

From June 2022 to June 2023, positive changes are observed in the dynamics of the CSI (the index increased by 8 points, from 80 to 88 p.).

Consumer Sentiment Index (CSI, points; Levada-Center* data for Russia)



Dynamics (+/-), June 2023 to		
CSI	June 2022	Apr. 2023
Index value, points	+8	0

The index is calculated since 2008.

Latest data are as of June 2023.

Source: Levada-Center*. Available at: https://www.levada.ru/indikatory/sotsialno-ekonomicheskie-indikatory/

* Included in the register of foreign agents.

From April to June 2023, the estimates of social mood did not change significantly in most of the main socio-demographic groups (in 12 out of 14). Slight positive changes are observed only among people under the age of 30 (the share of positive assessments of social mood increased by 3 percentage points, from 73 to 76%) and residents of Vologda (also by 3 percentage points, from 58 to 61%).

The dynamics of public sentiment over the past 12 months (from August 2022 to August 2023) show mainly negative trends. The proportion of people describing their mood as "fine, normal, good" decreased in 10 of the 14 main socio-demographic groups, especially among people over 55 (by 8 percentage points, from 64 to 56%), residents of Cherepovets (by 8 percentage points, from 74 to 66%) and people who, according to self-estimates of income, belong to the category of 20% of the most affluent residents of the Oblast (by 7 percentage points, from 77 to 70%).

Social mood in different social groups
(answer option: "Wonderful mood, normal, stable condition", % of respondents; VolRC RAS data)

Population group	Dynamics of the average annual data								Dynamics of the data for the last 7 surveys							Dynamics (+/-), Aug. 2023 to	
	2000	2007	2011	2012	2018	2020	2021	2022	Aug. 2022	Oct. 2022	Dec. 2022	Feb. 2023	Apr. 2023	June 2023	Aug. 2023	Aug. 2022	June 2023
Sex																	
Men	50.1	65.9	64.5	69.1	72.8	60.8	65.7	66.8	69.9	65.0	64.7	62.5	65.4	63.4	65.4	-4	+2
Women	43.3	61.7	62.0	65.8	69.8	61.2	67.4	67.9	70.2	63.3	66.5	62.7	63.4	64.7	65.3	-5	+1
Age																	
Under 30	59.1	71.3	70.0	72.3	80.0	67.6	73.5	77.6	77.8	74.5	78.7	70.6	72.9	72.9	76.2	-2	+3
30–55	44.2	64.8	62.5	67.9	72.6	61.8	69.5	69.4	72.0	65.2	68.5	63.9	67.7	68.6	69.2	-3	+1
Over 55	37.4	54.8	58.3	62.1	65.2	57.4	60.5	61.1	64.6	58.7	57.2	58.1	56.9	55.4	56.3	-8	+1
Education																	
Secondary and incomplete secondary	41.7	58.4	57.4	57.2	64.8	56.1	62.1	64.6	68.5	58.9	62.7	57.2	60.2	61.6	63.2	-5	+2
Secondary vocational	46.4	64.6	63.6	66.7	72.2	63.5	66.7	68.3	71.0	65.8	64.3	63.7	65.1	63.7	65.1	-6	+1
Higher and incomplete higher	53.3	68.6	68.3	77.0	76.8	63.3	71.5	69.5	70.8	67.5	70.6	67.3	67.3	68.2	67.4	-3	-1
Income group																	
Bottom 20%	28.4	51.6	45.3	51.5	57.3	43.4	54.6	57.0	55.4	50.7	55.4	46.2	47.8	50.4	49.6	-6	-1
Middle 60%	45.5	62.9	65.3	68.7	71.9	62.6	67.3	68.1	73.2	65.9	66.1	62.2	64.4	65.7	67.9	-5	+2
Top 20%	64.6	74.9	75.3	81.1	82.9	75.6	79.9	78.3	77.0	78.7	74.9	73.8	78.2	72.1	70.3	-7	-2
Territory																	
Vologda	49.2	63.1	67.1	73.6	71.0	60.9	60.3	59.8	61.5	55.7	57.2	54.5	56.0	57.8	60.8	-1	+3
Cherepovets	50.8	68.1	71.2	76.2	75.8	60.4	71.0	71.2	74.6	67.9	69.1	65.9	68.4	67.9	66.4	-8	-2
Districts	42.2	61.6	57.1	59.8	68.7	61.4	67.8	69.5	72.3	66.6	68.5	65.3	66.6	65.6	67.3	-5	+2
Oblast	46.2	63.6	63.1	67.3	71.2	61.0	66.6	67.4	70.1	64.1	65.7	62.6	64.3	64.1	65.3	-5	+1

RESUME

According to the results of another round of public opinion monitoring, there were no significant changes in the dynamics of public sentiment during the period from June to August 2023:

✓ the assessments of the work of the authorities remain stable (the level of approval of the RF President's work is 60–61%; the Prime Minister – 49–50%; the Vologda Oblast Governor – 49–50%);

✓ people's subjective perception of the dynamics of their financial situation remains at the same level (the share of the "poor and extremely por" is 42–43%; "middle-income people" – 44%);

✓ as in June 2023, the majority of Vologda Oblast residents characterize their mood as "normal, good, fine" (67%) and believe that "everything is not so bad" or "it's hard to live, but we can endure it" (77%).

Perhaps, in today's conditions, when the military actions to achieve the goals of the SMO are in progress, and terrorist attacks (though unsuccessful) took place on the territory of Russia, the preservation of the stability of public sentiment should be interpreted in a positive way.

We should note the fact that during the period of the survey, extremely resonant events happened on June 23–24, when the private military company Wagner Group, headed by businessman E. Prigozhin, attempted an armed revolt, and, as the President noted, Russia was actually on the verge of a "civil war"[5]. Many experts[6] drew attention to the fact that this could be the result of internal contradictions in the system of public administration; the result of the struggle of clans and groups in Russia's ruling elites, and this, of course, does not speak in favor of the current system of public administration, since it shows its vulnerabilities.

However (at least two months after the revolt), it can stated that this fact does not significantly affect the dynamics of public opinion regarding the work of the authorities and, in particular, the RF President, the "chief arbiter" of this system.

It is also very important to emphasize that, despite the presence of economic sanctions impose by the countries of the Collective West and the objective need to pay increased attention to the development of the military-industrial complex in the conditions of the SMO, the authorities manage to pursue the trend for the development of the economy in general and promotion of people's welfare in particular. As Vladimir Putin noted at the August meeting of the Council for Strategic Development and National Projects, "despite the pessimistic forecasts – let's be honest – that were and are still being made by analysts, primarily in the West, despite all these forecasts, Russia was one of the world's top five economies in 2022… Last year, real wages, unfortunately, fell one percent, while in the first half of this year they have already gone up 4.7 percent…in real terms, that is, taking into account inflation… The average salaries in the economy increased by comparable rates of 4.2 percent"[7].

Statistics data for the Vologda Oblast also indicate certain, though insignificant, but positive changes in the dynamics of the standard of living: for example, in January – May 2023, the average monthly salary in the region increased by 7.9% compared to the same period in 2022; real wages increased by 1.6%;

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[5] Vladimir Putin's address to the service personnel from the units of the Defense Ministry, the Federal Service of National Guard Troops, the Federal Security Service, the Interior Ministry and the Federal Guard Service, which ensured law and order during the mutiny. Available at: http://www.kremlin.ru/events/president/transcripts/71533

[6] See, for example: A month has passed since Prigozhin's rebellion. Available at: https://www.ng.ru/editorial/2023-07-23/2_8780_red.html?ysclid=lktc0xzc7b221294017; Skorobogaty P. (deputy editor-in-chief, editor of the policy department of the Ekspert journal, expert at the Center for Applied Research and Programs). Video interview in the "Neutral Zone" program (video blog of Israeli journalist A. Waldman).

Available at: https://www.youtube.com/watch?v=vt2qH1Sk4dc

[7] Vladimir Putin's speech at the meeting of the Council for Strategic Development and National Projects. Available at: http://www.kremlin.ru/events/president/transcripts/72084

consumer price index for food goods in the 2nd quarter of 2023 amounted to 99.6% compared to the 1st quarter (although it should be noted that consumer prices for non-food goods and services increased by 1.5 and 3.1%, respectively, in the 2nd quarter compared to the 1st quarter)[8].

In general, we can state that the dynamics of self-assessments of the financial situation remains stable, and this concerns both the current characteristics of the standard of living and the assessment of the prospects for the future of the Russian economy (as evidenced by the consumer sentiment index, which in June – August 2023 did not change and amounted to 84–85 points). And this is very important in today's difficult conditions for the country.

However, characterizing the dynamics of social sentiment, it would be wrong and short-sighted to ignore a number of alarming points, which are also reflected in the results of monitoring public opinion. In particular:

- ✓ **in August 2023, for the first time in the last 11 months (since October 2022), the proportion of people subjectively classifying themselves as "poor and extremely poor" residents of the Vologda Oblast increased slightly (from October 2022 to June 2023 it decreased by 3 percentage points (from 44 to 41%), from June to August 2023 it amounted to 42–43%);**
- ✓ **since February 2023, the share of people who consider the President's work to boost the economy and increase citizens' welfare (35–36%) remains stable; however, over the previous 5 months (from August to December 2022), positive dynamics were noted – their share increased by 3 percentage points (from 32 to 35%);**
- ✓ **in addition, over the past 12 months (from August 2022 to August 2023), in fact, there has been no improvement in social mood indicators in any of the main socio-demographic groups. On the contrary, in 10 of the 14 analyzed categories, the proportion of people who positively characterize their daily emotional state decreased, and in some – very significantly (among people over 55 years old – by 8 percentage points (from 64 to 56%), among residents of Cherepovets – by 8 percentage points (from 74 to 66%), people, who according to self-estimates of income belong to the category of 20% of the most affluent residents of the region – by 7 p.p. (from 77 to 70%).**

Thus, according to the results of another round of the survey, we can point out that a number of alarming trends are observed in the dynamics of public sentiment, although in general, population estimates remain stable in key monitoring indicators.

At the same time, we should note that the approaching autumn-winter period (which is traditionally accompanied by an increase in utility tariffs, the end of vacations and deterioration of climatic conditions) creates a certain risk of deterioration of public sentiment, and this indicates the need for increased attention of authorities at all levels during the implementation of measures to maintain the standard of living and quality of life of citizens.

And, of course, the development of the situation on the battlefield and the effectiveness of the Russian armed forces in achieving the goals of the SMO remain key factors influencing the nature of public sentiment for the last almost 20 months (from February 2022 to August 2023). As the head of state noted, "there is nothing more important now" and "the security of our country and the future of statehood depend on it"[9].

Materials were prepared by M.V. Morev, I.M. Bakhvalova

[8] Socio-economic situation in the Vologda Oblast in January – June 2023: Report. Vologdastat. Vologda, 2023.
[9] Vladimir Putin's speech at the Victory Day Parade. Available at: http://www.kremlin.ru/events/president/transcripts/71104

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