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

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

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

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

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Introduction

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

Their practical implementation in recent years is accompanied by the massive use of economic and non-economic instruments of coercion of competitors, which have reached unprecedented levels by the 2020s, with the activation of secondary and tertiary forms of pressure, sanctioning their own allies for deviating from policies favorable to the world economy leaders. For example, 34 countries of the Global North imposed 10,124 restrictions against Russia alone, or 73% of all restrictions in force in the world at that time in 2022 as a result of the sharp deployment of anti-Russian sanctions pressure (*Tab. 1*). As of October 1, 2024, the number of anti-Russian sanctions imposed by unfriendly countries reached 22,230 (64% of the global total). For comparison: the two other most sanctioned countries in 2022–2024: Iran (which was in second place in the sanctions anti-rating as of October 1, 2024) and the Republic of Belarus (5th place) – cumulatively received various restrictions (in most cases for possible "assistance" to the Russian Federation in circumventing the sanctions regime) in 10% of the global total Russia in circumventing the sanctions regime) 10 times less – 1,634 and 711 respectively. Experts note the increasing unwinding of blocking (secondary) sanctions by the United States against both legal entities and individuals of its own partners (the Netherlands, Finland) and competitors (China, India) (Timofeev, 2023).

Table1. Dynamics of sanctions in modern world practice, units

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

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

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

Theoretical background of the research

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

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

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

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

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

During the first stage (1991–1996), economic independence (sovereignty) was considered as one of the three components of Russia's economic security along with the national economic stability and the ability to pursue self-development and progress (Abalkin, 1994). The forced focus of the state on internal problems in the conditions of transition to the market gave the first concepts some features of the policy of "anti-crisis management". Internal shocks were considered to be the key challenges, and the task of the proposed tools was to find ways to stabilize the domestic market and social sphere.

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

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

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

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

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

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

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

Foreign literature traces the growing relevance of academic research devoted to the issues concerning economic sovereignty and assessment of its components in the categories of resistance, sustainability, and resilience. For example, the number of works by foreign authors on this topic published in the Scopus database increased from 0.7 thousand to 12.4 thousand in 2000–2023 (Riepponen et al., 2023, p. 329). In general, they are characterized by the interpretation of economic resilience concept similar to the approaches of Russian specialists: "... the ability of countries to recover... positively adapting and transforming the structure of the economy under long-term stresses..."[4]. The main difference is the focus of Western experts on external rather than internal threats. In particular, the ways of countering global economic and financial crises (Davis, 2011; Martin, 2012), leveling the effects of deglobalization and fragmentation of the world economy (Bolt, Willem, 2023), overcoming the challenges of the "Cold War 2.0"[5] are considered as priorities. Therefore, from the point of view of foreign economists, the basis for increasing the resilience of economic systems is the functioning of global value chains as "remarkably resilient to shocks" structures (Antras, 2020, p. 25). In this regard, the key strategy is proposed to define "reglobalization", the essence of which is the gradual abandonment of trade barriers by developing countries with their subsequent integration into knowledge-intensive links of global production networks (Gereffi, 2020).

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

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

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

[3] Scientific electronic library elibrary. List of publications with the keyword combination "foreign economic security". Available at: https://www.elibrary.ru/keyword_items.asp?id=5033464&show_option=0 (accessed: May 8, 2024).

[4] OECD. *Guidelines for Resilience Systems Analysis. How to Analyse Risk and Build a Roadmap to Resilience*. Paris, 2014. P. 6.

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

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

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

We have developed a methodology for assessing the economic resilience in the conditions of the beginning of the "global protectionist regime" based on the conceptual basis accumulated by Russian science (Biryukova, 2024, p. 152). Its main task is to identify the economic resilience level in three interrelated areas: industrial-technological, structural, and geo-economic. The following circumstances predetermined the focus of attention on the three components of the country's economic sovereignty. First, the destruction of the country's industrial base, undermining the institutional foundations of the economy and creating a situation of artificial autarky are the main objectives of the sanctions pressure. Second, the acquisition of systemic resilience in the three identified areas of economic activity should ensure sufficient sustainability of the economic system as a key condition for stable progressive development. Third, the economic sovereignty components that we have identified are interrelated, for example, industrial-technological (which is understood as "the presence under national control of its own lines of development and conditions for manufacturing high-tech products[6]) by itself is unattainable without accelerating structural modernization and gaining a foothold in foreign markets, which determine the enterprise's competitiveness level, especially in conditions of increasing "use of extraterritorial protectionism" (Milovidov, Asker-Zadeh, 2020, p. 43). The methodology was conceptually based on the following reference points.

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

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

[6] "On Approval of the Concept of Technological Development until 2030": Governmental Order 1315-r dated May 20, 2023. Collection of Legislation of the Russian Federation 22, Art. 3964, 2023.

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

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

The fourth is dialectical interpretation of the concept of "geo-economic component of the country's economic sovereignty", which implies, first, the inadmissibility of even conceptual consideration of the autarkic model of economic management of the Russian Federation. Second, the absolutization of import substitution is excluded. Third, we proceed from the fact that a country under sanctions pressure not only can, but also must protect its economy.

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

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

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

[7] In some cases, negative dynamics is recognized as positive, for example, when assessing indicators S3, G5, G7.

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

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

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

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

Research results

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

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

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

Окончание таблицы 4

Indicator	2016–2018	2019–2021	2015–2021
S7. Change in the share of organizations' own funds in the total volume of investments in the RF*	–	–	–
S8. Change in the share of foreign direct investment in the total investment volume in the RF	–	–	–
S9. Change in the share of machinery and equipment in the total investment volume in fixed assets in the RF	+	–	+
S10. Change in the degree of depreciation of fixed assets by certain types of economic activity in the RF	–	+	–
Resulting indicators of the structural component of economic sovereignty for 2015–2021: 2+/8– (Outcome for 2021: Initial Resilience level)			
G1. Change in the share of the RF in the key macroeconomic indicators of the world economy	+	–	+
G2. Change in the share of the RF in the world trade in goods and services	+	–	+
G3. Change in Russia's share in world trade in value added categories	+	–	–
G4. Change in the share of the RF in the world import of machinery and equipment	–	–	–
G5. Change in the share of top-3 commodity groups in Russian exports*	–	–	–
G6. Change in the share of non-resource non-energy exports (NRE) in the total exports of the RF	–	+	+
G7. Change in the share of top-3 partners in exports and imports of the RF*	–	–	–
G8. Change in the level of self-sufficiency of the RF in the most important raw material resources	+	–	+
G9. Change in the share of advanced production technologies acquired by Russia abroad in the total array of their use	+	–	–
G10. Changes in Russia's position in global human capital development indices	–	–	–
Resulting indicators of the geo-economic component of economic sovereignty for 2015–2021: 4+/6– (Outcome for 2021: "initial resilience" level)			

* Indicators, the negative dynamics of which is assessed positively.
According to: Russian Statistical Yearbook (RSY); Regions of Russia. Stat. coll. for the corresponding years. Available at: https://rosstat.gov.ru/folder/210/document/12994; External sector statistics of the Bank of Russia. Available at: https://www.cbr.ru/statistics/macro_itm/svs/; World Bank data. Available at: https://data.worldbank.org/indicator/NV.IND.MANF.CD; https://data.worldbank.org/indicator/NY.GNP.MKTP.CD; https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD; https://data.worldbank.org/indicator/BX.GSR.GNFS.CD; https://data.worldbank.org/indicator/NE.IMP.GNFS.CD; https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=RU;
BP Statistical Review of World Energy for the corresponding years. Available at: https://www.bp.com/en/global/corporate/energy-economics.html; OECD Data. TiVA 2023. Principal Indicators. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1; U.S. Geological Survey. Mineral Commodity Summaries, 2023, p. 114, 146; FAO Stat. Crops and livestock products. Available at: https://www.fao.org/faostat/en/#data/QCL (accessed: May 27, 2024).

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

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

Indicator	2015	2016	2019	2021
P1. Share of enterprises of professional, scientific, technical activities in the total turnover of organizations in the Russian Federation	no data	3.02	2.65	3.02
P3. Share of R&D in federal budget expenditures and GDP of the RF	2.81	2.45	2.69	2.53
P4. Share of business sector funds for R&D development in total domestic expenditures on R&D in the RF	16.49	16.41	14.90	13.56
P6. Share of high-tech exports in total exports of goods of the RF	12.92	12.78	29.40	36.89
P7. Share of high-tech imports in total imports of goods of the RF	55.59	66.98	72.28	73.38
S2. Share of manufacturing industry in the GDP of the RF	12.4	11.7	13.0	12.9
S3. Share of the top five regions in the GRP of the RF	38.29	38.88	39.87	41.72
S4. Share of SME turnover in the total turnover of organizations in the Russian Federation	38.49	31.75	30.23	25.60
S5. Expenditures of the RF consolidated budget on economic development *, % of GDP**	15.99	15.01	16.27	15.72
S9. Share of machinery and equipment in the total investment volume in fixed assets in the RF	31.48	30.37	36.97	36.48
G2. Share of the RF in the world trade in goods and services	1.60	1.44	1.69	1.67
G3. Share of the RF in world trade in value added categories	1.98	1.81	2.19	1.98***
G4. Imports of machinery and equipment in the RF, billion U.S. dollars**	125.4	92.5	108.4	100.5
G5. Share of top-3 commodity groups in Russian exports	83.1	81.2	85.6	84.1
G9. Share of advanced production technologies (APT) acquired by the RF abroad in the total array of their use	29.01	29.47	29.75	31.34

* The sum of expenditures carried out under the following budget lines: "National Economy", 'National Defense', 'Health Care', 'Science' ("fundamental research", 'applied scientific research in the field of general state issues').
** The line represents annual averages for 2011–2015, 2016–2018, 2019–2021, and 2016–2021.
*** OECD calculates and publishes data for 2020 using the Trade in Value-Added methodology with a time lag of 3 to 5 years.
According to: Russian Statistical Yearbook (RSY); Regions of Russia. Stat. coll. for the corresponding years. Available at: https://rosstat.gov.ru/folder/210/document/12994; External sector statistics of the Bank of Russia. Available at: https://www.cbr.ru/statistics/macro_itm/svs/; World Bank data. Available at: https://data.worldbank.org/indicator/NV.IND.MANF.CD; https://data.worldbank.org/indicator/NY.GNP.MKTP.CD; https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD; https://data.worldbank.org/indicator/BX.GSR.GNFS.CD; https://data.worldbank.org/indicator/NE.IMP.GNFS.CD; https://data.worldbank.org/indicator/ER.H2O.INTR.PC?locations=RU;
BP Statistical Review of World Energy for the corresponding years. Available at: https://www.bp.com/en/global/corporate/energy-economics.html; OECD Data. TiVA 2023. Principal Indicators. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1; U.S. Geological Survey. Mineral Commodity Summaries, 2023. Pp. 114, 146; FAO Stat. Crops and Livestock Products. Available at: https://www.fao.org/faostat/en/#data/QCL (accessed: May 27, 2024).

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

The structural component indicators of the country's economic sovereignty received the largest number of negative values – 8 against 2 positive values. The most alarming was the situation with the readiness of the economic system to accelerate modernization: in 2015–2021, both labor productivity grew slower (1.5% per year) and wages (4.6%), and the value of fixed assets (18.0% when calculated in actual prices), and the share of gross savings in Russia's GDP throughout the period under consideration exceeded the base level of 2015 (22.3%) only once – in 2021 within the statistical error (22.4%), and in 2023 remaining below the "base" (22.1%)[10]. The final result of investment activity is ambiguous: the share of own funds in

[10] Indicators. Business environment. *Monokl'*, 2024, 7. P. 78.

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

The geo-economic component of economic sovereignty at the end of 2021 had 4 positive and 6 negative assessments. Positive dynamics for 2015–2021 was revealed in terms of changes in the RF share in the key macroeconomic indicators of the global economy (the RF share in global GDP for 2015–2021 increased from 1.81 to 1.88%, FDI inflow – from 0.25 to 1.84%, global exports of goods and services – from 1.84 to 1.94%), quite convincingly characterizing the futility of the Western countries' efforts to push Russia to the periphery of the global economy during the period under consideration. Simultaneous growth in the share of non-resource non-energy exports in the RF total exports (from 34.55% to 38.63% in 2015–2021[12]), but decreasing to 34.41% in 2023[13]) and the self-sufficiency level in the most important resources – grain (gross harvest increased from 104 to 121 million tons, record 153.8 million tons in 2022 and 142.6 million tons in 2023[14]), proven oil reserves (growth from 102.4 to 107, 7 billion barrels[15]), iron ore (remained at the level of 25 trillion tons), rare earth metals (growth from 18.0 to 19.3 million tons[16]) – made it possible to conclude that the RF economic system is ready to withstand the increasing sanctions pressure. The transition to the level of "incomplete resilience" was seen through deepening the diversification of export-import activities in the commodity and geographical context and finding the optimal "balance between internal and external sources of growth" (Sutyrin, Korgun, 2024, p. 81). At the same time, we suppose that achieving full resilience in the context of the geo-economic component of economic sovereignty implies the exclusion of autarky in any scenario.

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

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

[12] PCE 2022, p. 584, 592; PCE 2019, p. 591, 599; PCE 2017, p. 566, 574.

[13] Edovina T. (2024). Secondary adaptation. *Kommersant*, March 14, 45. P. 2.

[14] Mertsalov A., Komarov V. (2024). The empire has frozen. *Kommersant*, May 17, 84. P. 10.

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

[16] U.S. Geological Survey. Mineral Commodity Summaries, 2023. P. 146.

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

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

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

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

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

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

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

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

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

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

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

Polemics

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

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

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

Despite some differences in the final assessment of the level of achievement of Russia's economic sovereignty, practically all experts speak about the need to further strengthen it, but differ regarding the possible options of strategies to increase the economic system resilience. Most Russian scientists define the most important goal of increasing the economic resilience as the achievement of "self-sufficiency... with its own competitive (high-tech) industrial goods" (Pak, Andronova, 2023, p. 77). To achieve this, as RAS Academician V.M. Polterovich has repeatedly emphasized, it is necessary to activate the tools for overcoming new challenges and imbalances. One of the key steps in this direction should be the formation of "value-added networks that include Russian companies as major players, which requires simultaneous technological upgrading of production processes at enterprises belonging to different industries" (Polterovich, 2023, p. 8). RAS Academician A.G. Aganbegyan calls the most important mechanism for increasing Russia's resistance to global challenges as "the transition to the forced growth of investment in fixed and human capital... which should be used mainly for a technological breakthrough and effective restructuring of the economy" (Aganbegyan, 2023, p. 27). From the point of view of specialists of the Institute of Economics of the Ural Branch of RAS, the formation of economic resilience requires the search for a new model of industrial policy, the essence of which "consists not just in responding to global challenges, but in actualizing the search and finding new opportunities for industrial development" (Romanova et al., 2021, p. 628). Russian scientists rightly note that the process of increasing the economic resilience since the early 2020s has become "a global trend associated with the securitization of industrial strategies and the course towards technological self-sufficiency/sovereignty of developed and developing countries..." (Smorodinskaya, Katukov, 2024, p. 108).

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

Conclusion

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

The industrial and technological component of economic sovereignty was on the verge of transition to the level of "incomplete resilience" by the beginning of 2022. One of the main positive points was the readiness of the industrial sector to withstand tough sanctions pressure. This was expressed primarily in the outstripping dynamics of growth in the total production of innovative products in 2015–2021 (for example, the production of medicines and materials used for medical purposes increased 2.48 times, vehicles and equipment – 1.65 times, computers, electronic and optical products – 1.40 times) compared to the indicator for the manufacturing industry as a whole (1.27 times growth[24]), improved energy efficiency of production in a number of industries (specific energy consumption for the production of 1 ton of crude oil decreased from 147.2 to 140 kilowatt-hours, production of 1 ton of finished rolled products – from 137.2 to 127.0[25]) and increasing the share of high-tech exports/imports in the total export/import turnover of the country[26]. According to the results of 2022, a new positive moment is the increase in the share of funds of the business sector for the R&D development in the total domestic expenditures on research and development in the Russian Federation, while maintaining the positive dynamics of the share of R&D in the federal budget expenditures and the growth of the total production of innovative products outpacing the manufacturing industry as a whole. At the same time, the government should prioritize the issues of reducing the number of researchers and, consequently, the number of patents for inventions filed by Russian applicants, the need to increase the share of innovative goods, works and services in their total volume and reduce the specific energy consumption for the production of certain types of basic products.

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

[24] PCE 2022, p. 372; PCE 2019, p. 381.

[25] PCE 2022, p. 381; PCE 2019, p. 390; PCE 2017, p. 340.

[26] PCE 2022, p. 584, 592; PCE 2019, p. 591, 599; PCE 2017, p. 566, 574.

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

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

[29] Dolzhenkov A. (2024). Bancocracy. *Monokl'*, 20. P. 45.

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

The transition from initial to incomplete resilience at the level of the geo-economic component of economic sovereignty at the end of 2021 lacked a small impetus. A possible way to accelerate the process could be the lengthening of domestic value chains through the accelerated development of high-value-added industries with their further integration into the global ones and, as a result, increasing the level of Russia's participation in world trade not only in terms of "gross" but also in the categories of value added. At the same time, the main danger for geo-economic sustainability, in our opinion, was over-dependence on specific goods (the share of the top-3 commodity groups in Russia's exports increased in 2015–2021 from 83.1% to 84.1%, imports – from 78.0% to 79.9%[30]), foreign trade partners (the share of the three largest countries buying Russian products increased from 27.6% to 28.5% over the period under review, supplying their products to the Russian Federation – from 36.6% to 39.8%[31]), federal budget revenues from foreign economic activity. In 2022, despite the sanctions pressure, the Russian economy successfully managed to grow the self-sufficiency level in the most important raw materials and increase the use of both the total number of advanced production technologies and the share of Russia ones in their structure. At the same time, the key danger to the country's geo-economic sovereignty, in our opinion, was the insufficient diversification of export-import turnover, the low share of machinery and equipment necessary to support industrial-technological transformation in Russia's commodity imports and the gradual decline in the human capital level.

The first results of 2023 emphasized the outlined consolidation of Russia's economic sovereignty at the level of "incomplete resilience" in the context of virtually each of the considered components. The strengthening of the industrial and technological framework was confirmed by the 7.5% growth of manufacturing industry, accelerated structural adjustment – 10.5% growth in investment (Astrov, 2024, p. 9), increased geo-economic stability – reduction of imports to 19% of GDP. With the strengthening of the economic system's resistance, a 3.6% growth in GDP was achieved (with 90% of the growth provided by non-resource industries[32]), which allowed the Russian economy to take first place in Europe in terms of purchasing power parity[33].

The key factor in increasing the Russian economic resilience in modern conditions is the "forced industrial development of the country"[34],

[30] PCE 2022, p. 590; PCE 2019, p. 596–597; PCE 2017, p. 569.

[31] PCE 2022, p. 587; PCE 2019, p. 594; PCE 2017, p. 567.

[32] Putin V. (2024). Russia: Front line of work. *Rossiiskaya gazeta*, March 1, 48. P. 3.

[33] Putin said that Russia's economy has become the first in Europe. RBK, January 11, 2024. Available at: https://www.google.com/amp/s/amp.rbc.ru/rbcnews/economics/11/01/2024/659f84c89a7947f8ac8631ad (accessed: May 29, 2024).

[34] Putin V. (2024). Russia: Front line of work. *Rossiiskaya gazeta*, March 1, 48. P. 3.

which implies the modernization of Russian industry to a level that ensures the concentration of the full cycle of creation from development to production of end-to-end and critical technologies within the country and the formation of a new knowledge economy. By 2024, the country has a unique set of factors favorable to the realization of an industrial breakthrough: the unsatisfied demand of the population and the economy, estimated by experts at 50 trillion rubles, a decrease in annual capital outflow, which amounted to 5–7% of GDP, combined with the potential for repatriation of capital (in the amount of about 50 billion U.S. dollars per year)[35] and the activation of state industrial policy, which launched "a strong growth cycle based on the accumulation of primarily industrial capital"[36]. From the point of view of the formation of a new knowledge economy, the achievement of the country's economic sovereignty will predetermine the development of its main driver – human capital, the main structural factors concerning accumulation and multiplication of which are scientific activity, education and health care. In this case, we should pay attention to the deterioration in the human capital quality (the decline of Russia's performance in the global ranking of human capital indices from 0.729 in 2018 to 0.681 in 2020 and human development from 0.845 in 2019 to 0.822 in 2021), which we attribute to the end of the first sanctions wave against Russia, which has been accelerating since 2014[37]. To reverse the negative trends and consolidate full resilience in all three components of Russia's economic sovereignty, it is necessary to make a decisive transition to systemic protectionism, designed to increase the innovativeness of the Russian economy, to support the structural transformation of the industrial complex by lengthening value chains, to reduce import dependence on the entire range of high-tech goods and services, which at the beginning of the period under review (2015) amounted to 90% compared to 15% in the late Soviet period[38], and to reduce the foreign economic dependence on imported goods and services.

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