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The Dynamics of Sanctions' Impact on the Foreign Trade of the Russian Far East

Dmitry A. IZOTOV
Economic Research Institute, Far Eastern Branch of the Russian Academy of Sciences
Khabarovsk, Russian Federation
e-mail: izotov@ecrin.ru
ORCID: 0000-0001-9199-6226; ResearcherID: S-3876-2017

Abstract. This study aims to assess the dynamic impact of "local" sanctions on the trade of the Russian Far East. It shows that the "local" sanctions (2014–2021) were comprehensive and open-ended, heightening the risks of bilateral interactions between Russia and both the sanctioning and the sanctioned countries – a pattern that became evident in the Russian Far East. A delayed, increasingly negative impact of sanctions on the region's trade was identified. The direct restraining effect of foreign sanctions was found to have grown from 38.6% in 2017 to 64.3% in 2021, while the effect of Russian sanctions against foreign countries rose from 50.0% in 2018 to 58.5% in 2021. The globalization effect was found to have mitigated the negative influence of the sanctions on the trade of the macro-region under study. In terms of the tariff equivalent, the stimulating effect of globalization on the Far East's trade in 2021 proved to be nearly half as strong in the case of the negative impact of Russian sanctions against foreign countries as it was in the opposite case. The globalization effect, however, was unable to reverse the mounting trend of the restraining influence of the sanctions on the macro-region's trade with the sanctioning and the sanctioned countries. As a result, the overall effect of foreign sanctions against Russia contributed to a 27.4% reduction in the Far East's trade volume with those economies in 2017 and a 54.0% reduction in 2021, whereas the effect of Russian sanctions against foreign countries produced a reduction of 42.4% in 2018 and 52.1% in 2021. It is suggested that the rise in the positive globalization effect may be accounted for by the specific nature of the Far East's trade with Japan, which, despite the sanctions, remained a close

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and one of the largest markets for the macro-region, owing to its investment participation in regional projects. The study points to a delayed, disproportionate increase in the risks of trade and economic interactions under the conditions of comprehensive sanctions confrontation between countries, including at the regional level.

Key words: trade, "local" sanctions, counter-sanctions, direct sanction effect, total sanction effect, globalization effect, foreign countries, domestic market, region, macro-region, Russia, Far East.

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Introduction

Over the past two decades, the modern global economy has witnessed not only a growing number of agreements that lower barriers to the exchange of goods, services, and investment between countries, but also a rise in the imposition of bilateral and multilateral sanctions[1]. These restrictions have substantially weakened trade and economic interactions between the sanctioned and sanctioning countries (Kwon et al., 2026). Against the backdrop of mounting non-tariff trade and economic barriers worldwide (Wu, 2025), it is the marked increase in the number of sanctions regimes that has come to be reflected in the fragmentation of the global and sub-global economic space, creating the conditions for the formation of economic blocs of countries along geopolitical lines (Gopinath et al., 2025).

Although the strength and the scale of the impact of these restrictions on the sanctioned countries can vary considerably, the existing theoretical and empirical studies of the effects of sanctions in the global economy have identified – all else being equal – the following general regularities. Sanctions have had a negative effect on the participation of the sanctioned country in global value chains (Cipollina, Bianco, 2025). By restricting access to capital and to modern technologies (Wang et al., 2025), sanctions have on the whole curbed international economic cooperation and have promoted the fragmentation of global markets (Kim et al., 2025). Sanctions have stimulated the diversion of trade by the sanctioned countries toward both the domestic market (Shingal, 2024) and third countries, which have thereby increased their own welfare (Islam et al., 2024). The spillover of the effects of sanctions to third countries has depended on the size of the sanctioned country's economy (Kwon et al., 2024). The development of mechanisms for circumventing sanctions restrictions by creating alternative means of payment for goods and services is capable of mitigating the risks of a rising debt burden for the sanctioned countries (Apeti, Edoh, 2024). Sanctions have not influenced the dynamics of the global business cycle (Ghironi et al., 2025). Sanctions have noticeably reduced industrial output and real income in small economies (Kim et al., 2023b), even as large economies display a high degree of adaptation (Golovanova, Krekhovets, 2025). Among the large economies that are involved in the sanctions confrontation – both as the object (the sanctioned country) and as the subject (the sanctioning country) – is Russia. The comprehensive sanctions pressure on the Russian economy began in explicit form in 2014, when a number of Western countries imposed "local" sanctions; these, in turn, were succeeded, starting in 2022, by "large-scale," systemic sanctions restrictions.

[1] Restrictive measures targeting other countries, as well as companies and individuals, with the aim of altering their foreign or domestic policies.

Assessments of the impact of the "local" sanctions on the Russian economy have, on the one hand, found no significant negative effect on the development of domestic business (Gaur et al., 2023) or on the economy as a whole (Gutmann et al., 2024), given the volatility of the global commodity markets (Gurvich, Prilepsky, 2016); the studies have, at the same time, pointed to a certain diversion of Russia's trade in favor of third countries (Kim et al., 2023a). On the other hand, a negative concomitant effect of such restrictions has been identified, which manifested itself in the migration of foreign firms away from the Russian market as the risks increased (Kohl et al., 2024), in the cessation of imports of a number of product groups (B l n, Hanousek, 2021), in a reduced inflow of foreign direct investment from the sanctioning countries (Besede et al., 2024), and in an indirect constraining effect on Russia's key macroeconomic indicators (Bali et al., 2024). The assessments offered by scholars have pointed to a negative impact of the "large-scale" sanctions on the Russian economy (Flach et al., 2024). At the same time, given Russia's large share of the global market for hydrocarbons (Rivera-Alonso, Iglesias, 2024), the diversion of Russia's foreign trade toward other markets softened the consequences of the sanctions pressure exerted by the Western countries (Ghironi et al., 2024).

The sanctions restrictions imposed on the Russian economy did not have a strict territorial dimension; however, they affected the economies of Russian regions through the disruption of cooperative and logistical chains, as well as through direct limitations on trade and economic interactions with the country as a whole (Zemlyansky et al., 2022). Consequently, the risks associated with sanctions were not evenly distributed across Russia's regions (Zemtsov, 2024). An analysis of the impact of the "local" sanctions (2014–2021) indicated, on the one hand, that they had no significant effect on the export diversification of Russian regions (Vasilieva et al., 2022), while on the other, it highlighted the vulnerability of regional economies to the risks of adverse external conditions amid the sanctions restrictions (Kazantsev, 2016). Despite attempts to conduct an indirect analysis of the impact of the "large-scale" sanctions on the economies of Russian regions (Zemlyansky, Chuzhenkova, 2025), the restricted access to Russia's official customs statistics on exports and imports since 2022 makes it currently impossible to assess the impact of sanctions restrictions on regional foreign trade.

Over the past fifteen years, the federal authorities of Russia have placed particular emphasis on the economic development of the Far Eastern regions – a focus that has become more pronounced since 2014, driven by sanctions restrictions and the ambition to diversify Russia's export markets in favor of the Asia-Pacific countries (Minakir, 2017). At the same time, under the sanctions imposed between 2014 and 2021, the quality of economic growth in the Russian Far East deteriorated as the region's commodity specialization intensified (Mikheeva, 2025). Earlier studies focusing on the region (Izotov, 2024; Izotov, 2026) indicated that, in the long run up to 2022, sanctions generally exerted a negative influence on its trade with the foreign countries engaged in the sanctions confrontation with Russia. Yet it remains unclear whether these sanctions generated a delayed restraining effect on the Far East's trade with those countries during the 2014–2021 period – particularly given the impact of cyclical factors, since 2015–2016 saw volatility in global commodity prices, the very commodities that form the backbone of both the macroregion's and the entire country's exports and that, in turn, financed import supplies. Furthermore, given the heterogeneity of the Far Eastern regions' trade interactions with foreign countries, the trajectory of the sanctions'

impact on the macroregion's foreign trade prior to 2022 is uncertain: either the negative impact was mounting, or the restraining effect of the sanctions was gradually dissipating. Another important aspect is a comparative assessment of the impact that the sanctions initiated by foreign countries against Russia, as well as the retaliatory sanctions (or counter-sanctions) imposed by Russia itself, have had on the foreign trade of the Russian Far East.

Thus, the aim of the study is to assess the dynamics of the impact of "local" sanctions on the trade of the Russian Far East. To achieve this aim, the following objectives were addressed: 1) analyzing the dynamics of the sanctions restrictions in which Russia was involved up to 2022, as well as the specific features of the development of the Far East's foreign trade relations under "local" sanctions; 2) selecting a methodology for the ex-post assessment of the dynamics of sanctions impact on the macroregion's trade and compiling the relevant dataset; 3) assessing the dynamics of the impact of sanctions on the Far East's trade with foreign countries that sanction Russia and those sanctioned by Russia, respectively. The study covers the period 1999–2021, with the Russian Far East considered within its administrative boundaries of 11 regions[2].

Foreign trade of the Russian Far East and sanctions

Russia is both an object and a subject of sanctions, which in turn have been divided into two tracks: economic and geopolitical. In terms of the degree of sanctions pressure exerted by a number of foreign countries on Russia, and vice versa, two stages can be identified that preceded the "large-scale" sanctions (*Tab. 1*).

Table 1. Sanctions imposed by foreign countries against Russia and by Russia against foreign countries before 2022

Sanctions track	Types of sanctions	Sanctions against Russia	Sanctions against foreign countries
Economic	Trade sanctions: restrictions on trade based on the imposition of unilateral or multilateral limitations on the exporter and importer, on specific sectors, or on trade as a whole	2014–2021: Ukraine, EU-28, USA, Canada, Norway, Australia, Albania, Iceland, Japan, Liechtenstein, Switzerland, Montenegro	2006, 2009 and 2014 – Ukraine; 2006–2007, 2013–2021 – Moldova; 2006–2013 – Georgia; 2010 – Belarus; 2013 – Lithuania; 2013–2018 – Eritrea; 2014–2021: EU-28, Canada, USA, Norway, Australia; 2015–2021: Albania, Liechtenstein
	Financial sanctions: restrictions on financial transactions and assets; suspension of the exchange of financial assets and investments; «freezing» of foreign assets and blocking of bank accounts of individuals	2014–2021: Ukraine, EU-28, USA, Canada, Norway, Australia, Albania, Iceland, Japan, Liechtenstein, Switzerland, Montenegro	2020 – Kyrgyzstan
	Travel sanctions: restrictions on the movement of persons into or out of the country, with the exception of diplomatic personnel	2014–2021: Ukraine, EU-28, USA, Canada, Norway, Australia, New Zealand, Albania, Iceland, Japan, Liechtenstein, Switzerland, Montenegro	2006–2011 – Georgia; 2014–2021 – Canada; 2020–2021 – United Kingdom; 2021: Albania, EU-27

[2] Republic of Buryatia, Republic of Sakha (Yakutia), Trans-Baikal Territory, Kamchatka Territory, Primorye Territory, Khabarovsk Territory, Amur Region, Magadan Region, Sakhalin Region, Jewish Autonomous Region, Chukotka Autonomous Area

End of Table 1

Sanctions track	Types of sanctions	Sanctions against Russia	Sanctions against foreign countries
Geopolitical	Arms supply sanctions: prohibition of direct or third-country supply, sale or transfer of armaments or related materials	2014–2021: EU-28, Australia, Switzerland	2006–2011 – Georgia
	Military assistance sanctions: restrictions on services in the supply, sale, transit, manufacture, maintenance and use of armaments	2014–2021: EU-28, Australia, Switzerland, Japan	2009–2018 – Eritrea
	Other sanctions: diplomatic measures, restrictions on flights and the use of ports	2008–2011 – Georgia; 2014–2021 – New Zealand	2006–2011 – Georgia

Notes. EU-28: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom. EU-27 includes the above countries without the United Kingdom.
Source: The Global Sanctions Data Base. Available at: https://www.globalsanctionsdatabase.com/

The first stage (chronologically, up to 2014) encompassed the imposition of "episodic" and, in most cases, short-term sanctions. During this period, Russia was primarily a sanctioning country, imposing sanctions – mainly for foreign policy and economic reasons – chiefly against a number of former Soviet Union countries, thereby restricting their opportunities to interact with the Russian market, the largest in the post-Soviet space. Russia's principal instrument of sanctions pressure was trade sanctions. Exceptions included travel sanctions and geopolitically oriented restrictions against Georgia amid Russia's intense foreign policy confrontation with that country, which softened considerably after a change of leadership in that post-Soviet state; as well as UN-imposed trade sanctions and military assistance sanctions against Eritrea, which were prolonged until 2018. The only counter-restrictions against Russia were imposed by Georgia, based on the mechanism of other sanctions that provided for the severance of direct diplomatic relations.

During the subsequent stage (2014–2021), Russia encountered multilateral and targeted "local" sanctions imposed by a number of Western states in response to the situation in Ukraine, particularly the incorporation of Crimea into the Russian Federation. These sanctions were based on selective economic restrictions. Specifically, the export of certain goods to Russia was halted[3]; barriers were erected to restrict the inflow of direct capital and medium- and long-term loans into the Russian economy from a number of Western countries; and travel sanctions focused on personal restrictions against Russian citizens. The set of countries that initiated trade sanctions, financial sanctions, and travel sanctions against Russia was, with a few exceptions[4], largely the same. Within the framework of the geopolitically oriented "local" sanctions, the restrictions against Russia concerning arms supplies and military assistance[5] were imposed by European countries, Australia, and Switzerland, while other sanctions were introduced solely by New Zealand. There was no direct confrontation based on geopolitically oriented sanctions between Russia and the United States, presumably because of the treaties on mutual monitoring and control of certain types of armaments, as well as other agreements.

[3] Dual-use products, as well as equipment and technologies for oil exploration and production.

[4] New Zealand did not impose trade sanctions, while Canada and Switzerland did not impose travel sanctions.

[5] Japan also imposed them.

It should be noted that the "local" sanctions were not exactly "mirror" measures, since, up until 2022, Russia did not impose any retaliatory restrictions against such countries as Iceland, New Zealand, Switzerland, Montenegro, and Japan[6]. For its part, Russia, acting within the framework of trade sanctions, banned the import of a number of food product categories[7] from most of those states under a counter-sanctions regime. Russia did not impose financial sanctions against the above-mentioned countries, thereby allowing the possibility of attracting capital through other states and economic territories, and applied this type of restriction only for several months in 2020 to Kyrgyzstan because of the internal political confrontation there. With a certain delay, Russia introduced retaliatory travel sanctions, but only against some Western countries, and it did not initiate any sanctions of a geopolitical nature at all.

Accordingly, Russia's restrictions were concentrated in the trade sphere. In turn, the "local" sanctions against Russia were, on the whole, comprehensive and open-ended, given the impossibility of their being met. Therefore, despite the seemingly formal character of the "local" sanctions – which were, to some extent, reciprocal – they contributed to heightened bilateral risks for business, demanding additional efforts to mitigate the negative consequences of such restrictions, a phenomenon that began to manifest itself at the regional level in Russia, including in the Russian Far East.

Despite the heterogeneity of its constituent regions, the Russian Far East is, on the whole, an open economic system closely tied to foreign markets. Over the period under review, the Far East's trade turnover with foreign countries grew considerably, from 3.1 billion US dollars in 1999 to 48.0 billion US dollars in 2021. Owing to its territorial proximity and the large size of the market, the Far East's foreign trade was skewed toward the three largest economies of Northeast Asia (NEA) – the People's Republic of China, the Republic of Korea, and Japan (the so-called "Big Three" of NEA). Moreover, the trend over time has been one of growing consolidation of the Far East's trade in favor of the NEA Big Three. Whereas in the late 1990s these three states accounted for 63.2% of the Far East's trade turnover with foreign countries, by 2021 the share of the NEA Big Three in the macroregion's foreign trade had reached 80.0%. The expansion of the Far East's trade ties with foreign countries was driven chiefly by the increase in the macroregion's exports in value terms (*Fig. 1*).

The dynamics of the Far East's exports were shaped by the launch of new mineral extraction projects, including some based on foreign direct investment, by the construction of transportation infrastructure for the transit of raw commodities to the APR market, and by the price environment in global and sub-global markets. It is worth noting that, among the Far Eastern regions, exports were generated primarily by the Sakhalin Region[8] and the Republic of Sakha (Yakutia)[9], which together accounted for roughly 70% of the value of goods shipped from the macroregion to foreign countries in 2021. Owing to the expanding demand for raw commodities from the PRC, the Chinese vector in the Far East's exports became increasingly prominent, especially under the "local" sanctions. The sanctions restrictions imposed by a number of Western countries against the Russian economy made it impossible to attract foreign capital and technology for the development of new oil and gas projects on the shelf of the Sakhalin Region,

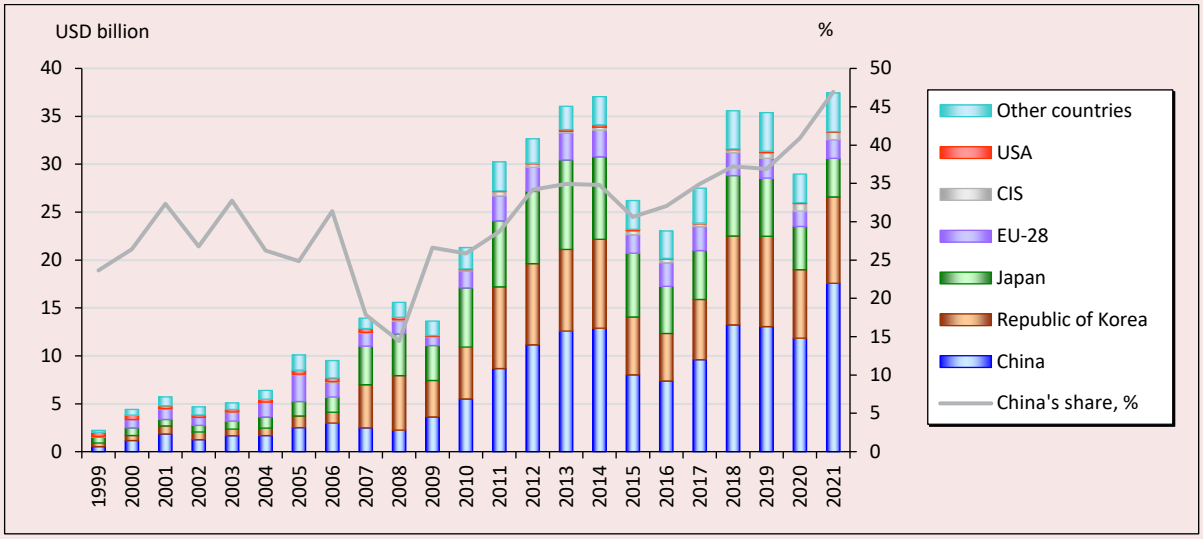
[6] Also Ukraine – from 2015.

[7] The majority of commodity groups of agricultural goods, fish, and seafood.

[8] In connection with the commissioning, from 2007, of the Sakhalin-1 and Sakhalin-2 oil and gas projects under production-sharing agreements with a consortium of global-level oil and gas corporations.

[9] Exports of coal and diamonds, and the expansion of oil and natural gas deliveries to the Chinese market via the pipeline infrastructure built in the second half of the 2010s.

Figure 1. Exports of the Russian Far East (left axis) and the share of the PRC (right axis)



Calculated from: data of the Federal Customs Service (FCS), regional offices of the Federal State Statistics Service (Rosstat), and industry-specific statistics of Russia.

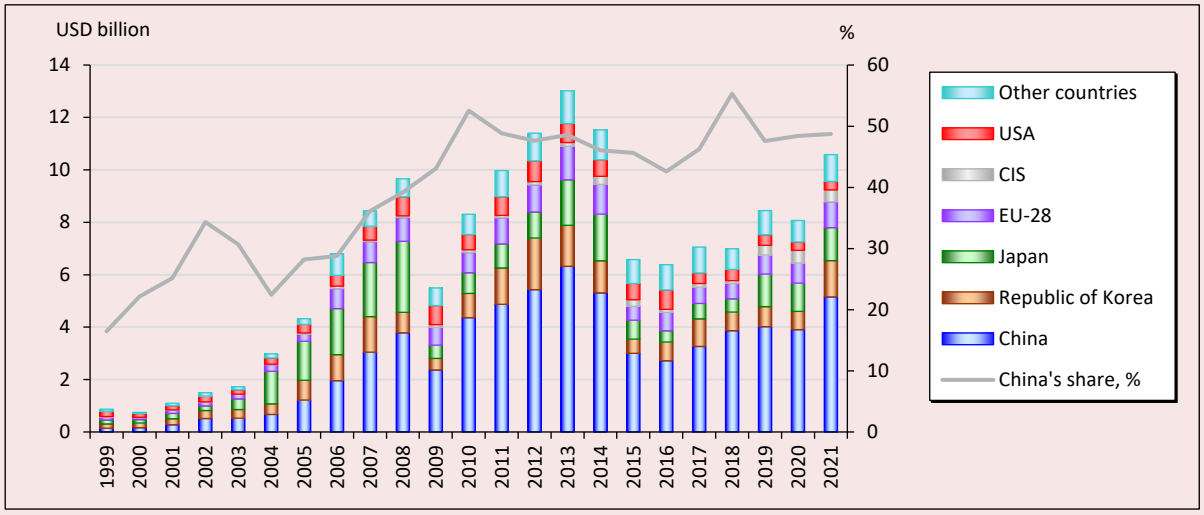
and they fundamentally transformed the "resource transit" of hydrocarbons in the mainland portion of the southern Far East, shifting its emphasis from diversifying exports toward the APR as a whole to ramping up deliveries to the Chinese market. In addition, at the end of the 2000s, Russia's tightening of restrictions on the export of timber products to foreign markets encouraged a reorientation of these goods from the Japanese market to the Chinese one. As effective demand in China grew, a portion of the fish and seafood exports from the Far East that had previously been destined for Japan began to flow to the PRC market, including via the newly created "Primorye-2" transport corridor. Under these conditions, China's share of the Far East's exports reached 46.9% by 2021, despite the restrictions associated with the COVID-19 pandemic.

In 2021, the value of the macroregion's exports was 3.5 times greater than that of its imports, a disparity explained by the production of commodity surpluses in excess of the Far East's own needs and by its small population. Over the long run, as with exports, the Far East's imports exhibited a skewing in favor of the NEA Big Three. At the same time, a certain shift was observed in the country structure of the Far East's imports, linked to the implementation of major investment projects that required the delivery of costly and, at times, unique components and equipment to the macroregion. For this reason, in the late 1990s the largest share of imports into the Far East belonged to the United States (23.1% in 1999), owing to the supply of investment goods for the operation of extractive industries, while in the late 2000s–early 2010s the share of imports from the EU-28 countries was comparable to that of Japan, as a result of the construction of unique infrastructure projects in the south of the Primorye Territory. The main peak of import deliveries to the Far East occurred in 2013, against the backdrop of a "strong" ruble exchange rate and an increase in the value of exports for Russia as a whole amid a favorable price environment for crude oil, as well as the absence of any sanctions restrictions on the Russian economy. After 2014, in the wake of declining exports and a significant devaluation of the ruble, imports into the Far East contracted, recovering only to some extent

by 2021. Against the backdrop of sanctions imposed by a number of Western countries, deliveries of goods from China to the Far East increased, including those destined for the implementation of mineral extraction and transportation projects. As a result, China became the leader in supplying goods from foreign countries to the Far East, with its share reaching 48.7% in 2021. Overall, by 2021 the NEA Big Three accounted for 73.7% of the Far East's imports, marking an increase of 21.1 percentage points compared to 1999 (*Fig. 2*).

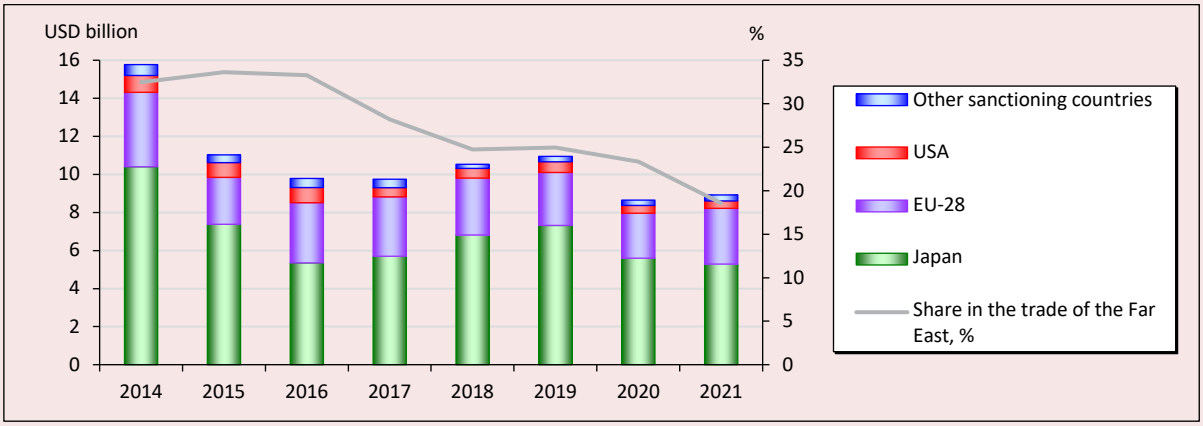
It should be noted that, over the 1999–2013 period, the only country to impose sanctions against Russia was Georgia, whose share in the Far East's foreign trade was minuscule, standing at 0.01% in 2008 and shrinking to zero by 2011. Between 2014 and 2021, sanctions became more notable. Among the states that imposed "local" sanctions on the Russian economy was Japan, which holds a significant share in the Far East's trade, followed by the European countries and then, at a considerable distance, the United States and others (*Fig. 3*).

Figure 2. Imports of the Russian Far East (left axis) and the share of the PRC (right axis)



Calculated from: data of the FCS, regional offices of Rosstat, and industry-specific statistics of Russia.

Figure 3. Trade turnover of the Russian Far East with countries sanctioning Russia (left axis) and the share of these countries in the macroregion's trade (right axis)



Calculated from: data of the FCS, regional offices of Rosstat, and industry-specific statistics of Russia; The Global Sanctions Data Base. Available at: https://www.globalsanctionsdatabase.com/

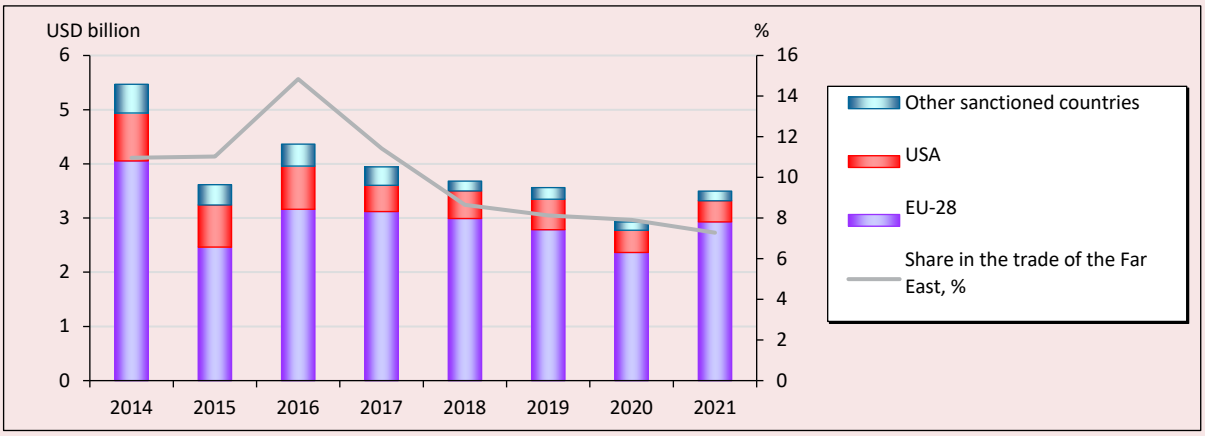
In 2014–2021, the share of this group of countries in the macroregion's trade turnover exhibited a downward trend (from 32.5% in 2014 to 18.6% in 2021), driven both by cyclical factors and by the diversion of the Far East's trade toward other states. During this period, against the backdrop of a pronounced increase in the Far East's trade with the PRC and the Republic of Korea, Japan's share in the macroregion's foreign trade turnover was declining. While imports of investment goods from the EU-28 countries to the Far East were maintained at a certain level, exports to European countries were falling as the macroregion's commodity flows were reoriented toward the countries of the Middle East and India, a shift linked to sanctions risks. The shares of the United States and the remaining countries sanctioning Russia (Ukraine, Canada, Norway, Australia, Albania, Iceland, Liechtenstein, Switzerland, Montenegro, and New Zealand) in the macroregion's foreign trade turnover were already small before 2014, and contracted even further after the "local" sanctions were imposed.

The share of the countries[10] sanctioned by Russia in 2006–2013 in the Far East's trade turnover was negligible (from 0.7% in 2006 to 0.01% in 2013). In turn, in 2014–2021, Russia's retaliatory sanctions did not extend to Japan and New Zealand, while continuing to apply against Moldova[11]. The share of the countries sanctioned by Russia in the Far East's trade turnover with foreign countries was declining in 2017–2021 (Fig. 4). The analysis presented points to a negative impact of the 2014–2021 sanctions restrictions on the macroregion's trade both with the countries sanctioning Russia and with those sanctioned by Russia.

Estimation methodology and data

An ex-post assessment of the dynamic impact of sanctions on trade can be obtained by constructing a structural gravity equation, an approach that has produced satisfactory results in a large number of empirical studies and draws on theoretically grounded modifications (Shumilov, 2017). Several provisions have now emerged that govern the correct estimation of factors based on the structural gravity

Figure 4. Trade turnover of the Russian Far East with countries sanctioned by Russia (left axis) and the share of these countries in the macroregion's trade (right axis)



Calculated from: data of the FCS, regional offices of Rosstat, and industry-specific statistics of Russia; The Global Sanctions Data Base. Available at: https://www.globalsanctionsdatabase.com/

[10] Ukraine, Moldova, Georgia, Belarus, Lithuania, and Eritrea.
[11] Also to Kyrgyzstan in the framework of financial sanctions in 2020.

methodology. First, this methodology rests on controlling for all time-varying and time-invariant bilateral trade costs facing trading economies, using fixed effects for the exporting and importing economies with a time dimension and for each pair of trading economies, respectively, in order to identify the impact of a particular independent dummy variable (Yotov et al., 2016). Second, an important aspect of studying trade determinants, especially at the regional level, is overcoming the problem of so-called zero observations, which do not permit the estimation of the relationship in log-linear form. To address this problem, the relationship is estimated in multiplicative form (Flowerdew, Aitkin, 1982), typically using Poisson pseudo-maximum likelihood (PPML) (Santos Silva, Tenreyro, 2011), on the basis of which satisfactory results have been obtained even for samples with a large number of zero values, exceeding 80% – a feature that matches the characteristics of the trade data for the Far Eastern regions with foreign countries. Third, standard errors are clustered by interacting country pairs within the Newey – West procedure to correct for autocorrelation when using Poisson pseudo-maximum likelihood with fixed effects (Yotov, 2022). Fourth, a direct estimate of the impact of the independent dummy variable can be obtained by controlling for the influence of the common trend of international trade growth, or the globalization effect, by including domestic trade flows in the panel data (Campos et al., 2021). Fifth, to enhance the overall efficiency of the model, it is desirable to use consecutive, rather than interval, years in the panel (Larch et al., 2025).

Since the assessment of the dynamics of the impact of the "local" sanctions on the Far East's trade is based on dummy variables reflecting the presence or absence of sanctions restrictions, a particular year or period is assumed to be excluded to avoid the problem of multicollinearity; by default, this period is treated as the *benchmark*, i.e., the reference or baseline value. For Russia, the period up to 2014 was characterized as being relatively free from sanctions pressure; in the present study, it can therefore be used as the *benchmark*, and the dynamic estimate of the sanctions' impact on trade will be comparative, covering 2014–2021 – that is, evaluated for each year within this time interval (Borchert, Yotov, 2017; Bergstrand et al., 2015). Another important consideration is the distinction between the estimates of the overall effect and the direct effect of sanctions on trade: the former does not account for, while the latter does account for, the influence of the common trend in international trade growth. This distinction is needed to identify the extent to which the globalization effect has softened the trade interactions of the Far Eastern regions under the sanctions restrictions imposed on the Russian economy as a whole.

Consequently, the direct effect of sanctions on the trade of the Russian Far East was estimated within the following model::

$$X_{ij,t} = \exp\left[\begin{matrix}\beta_0 + \sum_{N=2014}^{N=2021}\beta_N SANC(N)_{ij} + \\ + \sum_{T=1999}^{T=2020}\beta_T INTL(T)_{ij} + \pi_{it} + \chi_{jt} + \mu_{ij} + \varepsilon_{ijt}\end{matrix}\right], \quad (1)$$

where X_{ij} is exports from economy i to economy j (this indicator also includes X_{ii} – trade within the Far Eastern regions, between the Far Eastern regions, and with other Russian regions). All independent variables are dummies, thus avoiding the problem of endogeneity: *SANC(N)* equals one if sanctions are in place between Russia and foreign countries for each year N, and zero otherwise; *INTL(T)* equals one for the Far East's trade with foreign countries for each year T, and zero for trade with the domestic market (X_{ii}), reflecting the comparative aggregate costs (barriers) the macroregion faces in its interactions with the foreign market, with 2021 serving as the *benchmark*; β_0 is the constant; β_N are the semi-elasticities of the impact of sanctions on the Far East's trade; β_T are the semi-elasticities of the aggregate barriers to the Far East's trade interactions with foreign countries;

t is time. The fixed effects are: π_i – for the exporting economy, accounting for the year; χ_j – for the importing economy, accounting for the year; μ_{ij} – for pairs of trading economies.

Next, the dynamics of the overall effect of sanctions on the Far East's trade were estimated as follows:

$$X_{ij,t} = \exp\left[\beta_0 + \sum_{T=2014}^{T=2021} \beta_N SANC(N)_{ij} + \pi_{it} + \chi_{j,t} + \mu_{ij} + \varepsilon_{ij,t}\right]. \quad (2)$$

The difference in the semi-elasticity values β_N between models (2) and (1) provides a quantitative estimate of the globalization effect's influence on the Far East's trade with foreign countries. In accordance with the research objective, the dynamic assessment of the impact of the sanctions restrictions *SANC*(*N*) on the Far East's trade was carried out separately for the sanctions imposed by foreign countries against Russia and for those imposed by Russia against foreign countries. An important caveat is that the methodology employed also estimates the dynamics of the sanctions' impact on the Far East's trade with the sanctioning or sanctioned countries in comparison with the macroregion's trade with other countries with which Russia is not engaged in confrontations of this kind.

As a result, the dataset on trade flows for the Far Eastern regions was constructed on the basis of their trade ties with the foreign market (foreign countries and economic territories) and with the domestic market (with other Russian regions, among themselves, and within the Far Eastern regions themselves). Statistics on the Far Eastern regions' trade with the foreign market were compiled from the following information sources: the Federal Customs Service (FCS); regional offices of the Federal State Statistics Service (Rosstat); and industry-specific statistics for Russia. The use of information sources beyond the FCS for the trade of the Far Eastern regions with the foreign market was necessitated by the need to account for a number of commodity groups traded outside the Russian customs border, as well as by the specific nature of the way trade in crude oil and petroleum products is recorded. Apart from the Far Eastern regions' trade with foreign countries and economic territories, a key element in constructing the dataset was the inclusion of the macroregion's trade with the domestic market, so as to identify the direct effect of sanctions. Owing to the exclusion – and, later, the discontinuation – of Rosstat's accounting for a number of commodity items from the mid-2000s, the data reflecting the value of the Far Eastern regions' trade with the domestic market were based on statistics on the inflow and outflow of goods for more than 200 enlarged commodity groups, estimated on the basis of industry-specific and microeconomic statistics (Izotov, 2024; Izotov, 2026). An important caveat is that the FCS has not officially published data reflecting the value and physical volume of trade for Russian regions since 2022, while Rosstat's statistics on the inflow and outflow of goods are available only from 1999; the time frame of the study is therefore the 1999–2021 period. In all, the trade of the Far Eastern regions covered 150 foreign economies, though trade with most of these was sporadic for a number of the Far Eastern regions.

Given the significant differences in the trade relationships of the Far Eastern regions both with foreign countries and with the domestic market, the final dataset on the macroregion's trade contained roughly 70% zero values. This circumstance, on the whole, points to a marked heterogeneity in the trade interactions of the Far Eastern regions with foreign economies, indicating the need to control for other time-varying factors via fixed effects, which is consistent with the estimation methodology employed in this study within the framework of equations (1) and (2). To avoid problems associated with incorrect estimates (Baldwin, Taglioni, 2006), the value of the Far Eastern regions' trade was expressed in current prices.

The array of independent variables reflecting the presence or absence of sanctions imposed by Russia against foreign countries and by foreign countries against Russia was constructed on the basis of the GSDB database[12]. In the resulting indicator, all types of sanctions were used, since the "local" sanctions were closely correlated with one another[13]. In all, the variable array comprised 79,189 observations (*Tab. 2*).

Estimation results

Estimates from models (1) and (2) yielded econometric results that, in terms of their formal properties, are satisfactory for assessing the impact on the Far East's trade of sanctions imposed by Russia against foreign countries and by foreign countries against Russia, respectively (*Tab. 3*).

The estimates indicated a delayed negative impact of the "local" sanctions imposed by foreign countries against Russia on the Far East's trade, as evidenced by the absence of statistical significance between the variables for the first three years (2014–2016). Only the 2017–2021 period witnessed a statistically significant and increasing negative impact of the "local" sanctions restrictions imposed by foreign countries against Russia on the Far East's trade with these economies observed, both for the direct effect (1) and for the overall effect (2). In turn, the sanctions restrictions imposed by Russia against foreign countries exerted a restraining effect on the Far East's trade in 2014–2015 only in the case of

Table 2. Descriptive statistics of the dataset

Variable	Mean	Standard deviation	Min.	Max.
Trade between economies, USD million (*X*)	12.80	172.89	0	10389.25
Dummy variable (*SANC*) – sanctions imposed by foreign countries against Russia	0.09	0.29	0	1
Dummy variable (*SANC*) – sanctions imposed by Russia against foreign countries	0.09	0.28	0	1
Dummy variable (*INTL*) – trade of the Russian Far East with foreign countries	0.96	0.20	0	1
Source: own calculations.				

Table 3. Results of estimating models (1) and (2)

Variable	Sanctions imposed by foreign countries		Sanctions imposed by Russia	
	(1)	(2)	(1)	(2)
$SANC_{2014}$	-0.29 (0.17)	-0.08 (0.17)	-0.42** (0.20)	-0.26 (0.20)
$SANC_{2015}$	-0.23 (0.21)	-0.01 (0.21)	-0.42** (0.21)	-0.23 (0.21)
$SANC_{2016}$	-0.25 (0.18)	-0.19 (0.17)	-0.08 (0.23)	-0.07 (0.23)
$SANC_{2017}$	-0.49** (0.15)	-0.32** (0.15)	-0.38 (0.25)	-0.29 (0.25)
$SANC_{2018}$	-0.67*** (0.18)	-0.44** (0.18)	-0.69*** (0.26)	-0.55** (0.26)
$SANC_{2019}$	-0.65*** (0.15)	-0.41*** (0.15)	-0.76*** (0.18)	-0.60*** (0.17)
$SANC_{2020}$	-0.74*** (0.13)	-0.55*** (0.13)	-0.79*** (0.16)	-0.68*** (0.15)

[12] The Global Sanctions Data Base. Available at: https://www.globalsanctionsdatabase.com/

[13] On the whole, as preliminary estimates have shown, it was trade sanctions that determined the overall negative impact of the restrictions on the Far East's trade, both in the case of the sanctions imposed by foreign countries against Russia and those imposed by Russia against foreign countries.

End of Table 3

Variable	Sanctions imposed by foreign countries		Sanctions imposed by Russia	
	(1)	(2)	(1)	(2)
$SANC_{2021}$	-1.03*** (0.17)	-0.77*** (0.17)	-0.88*** (0.20)	-0.73*** (0.16)
$INTL_{1999}$	-0.81*** (0.24)	–	-0.81*** (0.24)	–
$INTL_{2000}$	-0.65*** (0.25)	–	-0.65*** (0.25)	–
$INTL_{2001}$	-0.54*** (0.26)	–	-0.54*** (0.26)	–
$INTL_{2002}$	-0.59*** (0.22)	–	-0.59*** (0.22)	–
$INTL_{2003}$	-0.73*** (0.21)	–	-0.73*** (0.21)	–
$INTL_{2004}$	-0.81*** (0.20)	–	-0.81*** (0.20)	–
$INTL_{2005}$	-0.71*** (0.20)	–	-0.71*** (0.20)	–
$INTL_{2006}$	-0.66*** (0.26)	–	-0.66*** (0.26)	–
$INTL_{2007}$	-0.56*** (0.16)	–	-0.56*** (0.16)	–
$INTL_{2008}$	-0.72*** (0.17)	–	-0.72*** (0.17)	–
$INTL_{2009}$	-0.62*** (0.15)	–	-0.62*** (0.15)	–
$INTL_{2010}$	-0.50*** (0.16)	–	-0.50*** (0.16)	–
$INTL_{2011}$	-0.47*** (0.15)	–	-0.47*** (0.15)	–
$INTL_{2012}$	-0.39*** (0.15)	–	-0.39*** (0.15)	–
$INTL_{2013}$	-0.34** (0.15)	–	-0.34** (0.15)	–
$INTL_{2014}$	-0.12** (0.05)	–	-0.12** (0.05)	–
$INTL_{2015}$	-0.03 (0.18)	–	-0.03 (0.18)	–
$INTL_{2016}$	-0.43** (0.19)	–	-0.43** (0.19)	–
$INTL_{2017}$	-0.20 (0.21)	–	-0.20 (0.21)	–
$INTL_{2018}$	-0.07 (0.17)	–	-0.07 (0.17)	–
$INTL_{2019}$	-0.04 (0.16)	–	-0.04 (0.16)	–
$INTL_{2020}$	-0.15 (0.15)	–	-0.15 (0.15)	–
Constant	-22.31*** (2.04)	-18.32*** (2.03)	-21.10*** (2.08)	-21.40*** (2.06)
Pseudo log-likelihood	-277869	-284356	-281622	-286397
Pseudo R^2	0.90	0.88	0.89	0.87
RESET-test	0.05	0.01	0.04	0.01

Notes. (1) – specification for estimating the direct effect of sanctions; (2) – specification for estimating the overall effect of sanctions. Fixed effect values are not reported for brevity. *** – $p < 0.01$, ** – $p < 0.05$.
Source: own calculations.

the direct effect, while no statistical significance was observed for the overall effect of these sanctions. Subsequently, in 2018–2021, increasing negative effects of the sanctions imposed by Russia against foreign countries on the macroregion's trade were recorded. The estimates from model (1) also pointed to a decline in the comparative aggregate costs of the Far East's trade interactions with foreign countries (INTL) up to and including 2014, especially after Russia's accession to the WTO in 2012. Thereafter, the dynamics of the comparative aggregate costs of the Far East's trade interactions with foreign countries were marked by uncertainty, which served as a kind of confirmation of the restraining influence exerted by the comprehensive "local" sanctions on the macroregion's trade[14].

For ease of comparison, the corresponding values of the sanctions' semi-elasticities in models (1) and (2) were evaluated in a comparable form, both in terms of their impact on trade and in the form of the additional burden on the price of goods expressed as a tariff (ad valorem) equivalent (*Tab. 4*).

According to the estimates, the negative direct effect of the sanctions imposed by foreign countries on the Far East's trade with them amounted to 38.6% in 2017, increasing (in absolute value) to 64.3% in 2021. When recalculated as a tariff equivalent, the additional "burden" on trade rose from 27.6 p.p. in 2017 to 67.4 p.p. in 2021. On the other hand, the negative direct effect of Russia's sanctions against foreign countries on the Far East's trade exceeded 34% in 2014–2015, which was equivalent to an increase in the tariff on trade with these foreign states of more than 23 p.p. Subsequently, as a result of the sanctions restrictions on the Russian side, the Far East's trade with the sanctioned countries contracted from 50% (41.4 p.p. in tariff equivalent) in 2018 to 58.5% (55.3 p.p.) in 2021. This suggests that, by 2021, the direct effect of the foreign countries' sanctions against Russia exerted a greater restraining influence on the Far East's trade than the analogous effect of Russia's sanctions against foreign countries.

The estimates showed that the negative overall effect of sanctions on the Far East's trade was weaker than the direct effect, thanks to the softening influence of the growth in international trade, or the globalization effect. The overall effect of the foreign countries' sanctions against Russia contributed to a contraction of the Far East's trade

Table 4. Dynamics of the impact of sanctions on the trade of the Russian Far East

Effect of sanctions	Sanctions imposed by	%, p.p.	Year						
			2014	2015	2017	2018	2019	2020	2021
Direct	Foreign countries	Δ	–	–	-38.6	-48.6	-47.9	-52.4	-64.3
		T.E.	–	–	27.6	39.5	38.6	44.9	67.4
	Russia	Δ	-34.3	-34.5	–	-50.0	-53.3	-54.7	-58.5
		T.E.	23.4	23.6	–	41.4	46.3	48.6	55.3
Overall	Foreign countries	Δ	–	–	-27.4	-35.7	-33.9	-42.3	-54.0
		T.E.	–	–	17.4 [-10.2]	24.7 [-14.8]	23.0 [-15.6]	31.6 [-13.2]	47.5 [-19.9]
	Russia	Δ	–	–	–	-42.4	-45.3	-49.5	-52.1
		T.E.	–	–	–	31.7 [-9.7]	35.3 [-11.1]	40.7 [-7.9]	44.4 [-10.8]

Notes. The impact of sanctions on bilateral trade was assessed as follows: $\Delta = (e^{\widehat{\beta}_N} - 1) \times 100\%$. The tariff equivalent of sanctions was calculated using the expression $\text{T.E.} = [e^{(\frac{\widehat{\beta}_N}{1-\sigma})} - 1] \times 100\%$, with the elasticity of substitution between domestic and foreign products on the Russian market (σ), set equal to three (Izotov, 2022). Figures in square brackets indicate the tariff equivalent of the globalization effect. "–" – denotes the absence of an effect due to its statistical insignificance (see Tab. 3); for the same reason, the values of sanctions effects for 2016 are not presented in the table.
Source: own calculations.

[14] The impact of the COVID-19 pandemic was accounted for in the fixed effects.

with these economies by 27.4% in 2017 and by 54.0% in 2021 – equivalent, in tariff terms, to 17.4 and 47.5 percentage points, respectively. In tariff-equivalent terms (by absolute value), a mounting softening influence of the globalization effect on the macroregion's trade was observed amid the "local" sanctions imposed by foreign countries against the Russian economy, from 10.2 p.p. in 2017 to 19.9 p.p. in 2021. As regards the impact of the sanctions imposed by Russia against foreign countries on the Far East's trade, under the overall effect of sanctions, the negative direct effect of their introduction in 2014–2015 was fully offset. In turn, the Far East's trade with the countries sanctioned by Russia shrank by 42.4% (31.7 p.p. in tariff equivalent) in 2018 and by 52.1% (44.4 p.p.) in 2021, respectively. Under the conditions of counter-sanctions, a mounting softening influence of the globalization effect on the Far East's trade was recorded in tariff-equivalent terms (by absolute value), from 9.7 p.p. in 2018 to 10.8 p.p. in 2021.

The calculations indicate that, in 2021, the stimulating effect of globalization on the Far East's trade was far smaller (almost half in terms of the tariff equivalent) under the negative influence of Russia's sanctions against foreign countries than in the reverse case. As a result, for the Far East's trade, the magnitude of the negative overall effect of the sanctions imposed by foreign countries against Russia had, by 2021, become broadly comparable to that of Russia's counter-sanctions against foreign countries – unlike the case of the direct effect of the sanctions.

Conclusion

For Russia, prior to the imposition of the "large-scale" sanctions by Western countries against the Russian economy, a stage of "episodic" sanctions (up to 2014) can be identified, as well as a stage of "local" sanctions (2014–2021). The "local" sanctions were notable for their comprehensiveness and open-ended nature, contributing to heightened risks in bilateral interactions with both sanctioning and sanctioned countries – a phenomenon that began to manifest itself at the regional level, including in the Russian Far East.

The assessment of the dynamics of the impact of the "local" sanctions quite unambiguously indicated their delayed negative effect on the trade of the Russian Far East. It was determined that, by 2021, the direct effect of the sanctions imposed by foreign countries against Russia exerted a greater restraining influence on the Far East's trade than did the sanctions imposed by Russia against foreign countries. The assessment also showed that, thanks to the globalization effect, the restraining influence of the overall effect of sanctions on the Far East's trade was weaker. The calculations obtained attest to a much smaller stimulating impact of the globalization effect on the Far East's trade under the negative influence of Russia's sanctions against foreign countries than in the reverse case. As a result, by 2021, the magnitude of the overall effect of the sanctions imposed by foreign countries against Russia on the Far East's trade was comparable to that of Russia's counter-sanctions against foreign countries.

The globalization-driven positive effect could presumably be explained by the specific nature of the Far East's trade with Japan[15], against which Russia had not imposed sanctions. The macroregion's trade was observed to be shifting toward other foreign countries that, at that time, were not participating in sanctions against the Russian economy. Yet the diversion of the Far East's trade was, in all likelihood, occurring only up to a certain limit, as Japan – other things being equal – remained a proximate market and one of the largest for the Far East, despite the restrictions that had been adopted and the risks associated with expanding trade and economic interactions.

[15] And subsequently for the Republic of Korea as well, which joined the "large-scale" sanctions against Russia, ceasing purchases of hydrocarbons from the Far East with a certain lag.

Moreover, unlike China and the Republic of Korea, Japan was among the principal investors in the macroregion's oil and gas projects as part of its efforts to ensure its own energy security, maintaining its presence and its import quota for deliveries of crude oil and liquefied natural gas from the Sakhalin Region[16]; the Far East, in turn, continued to receive traditional Japanese manufactured goods, even though their product range had narrowed. Thus, a certain improvement in the price environment and the post-COVID recovery of the global economy eased the negative impact of the overall effect of sanctions. The presence of this softening influence of the globalization effect can be taken into account for further qualitative analysis of the impact of the "large-scale" sanctions on the macroregion's foreign trade.

Nevertheless, by 2022 the foreign trade of the Russian Far East had deviated substantially away from the countries sanctioning Russia. The positive impact of the globalization effect only "softened" the negative influence of the "local" sanctions imposed by foreign countries on the Far East's trade with those economies, but it was unable to reverse the mounting constraining effect of the restrictions. It is also noteworthy that the "local" sanctions, which at first glance did not appear to be a serious factor in constraining the Far East's trade, nevertheless prompted decisions – including at the micro level – that ultimately led to an increasingly negative impact on the macroregion's trade turnover with both the sanctioning countries and those under sanctions. Against the backdrop of the "local" sanctions, the Far East's trade turnover with China expanded, including for the implementation of projects in mineral extraction and transportation. By complicating the attraction of foreign capital into the macroregion's large-scale resource projects, the "local" sanctions, to a certain degree, transformed the priorities for expanding the Far East's exports in favor of the Chinese market. This circumstance points to a case of a delayed and disproportionate increase in the risks of trade and economic interactions under conditions of a comprehensive sanctions confrontation between countries, including at the regional level. It can be assumed that, under the conditions of the "large-scale" sanctions against Russia, first, the Far East's trade with China and the "friendly" countries of Southeast Asia will intensify; and second, the macroregion's trade cooperation with Japan and the Republic of Korea will persist, but only within commodity groups not included in the "sanctions" list.

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[16] Even under the conditions of the subsequent "large-scale" sanctions against Russia from 2022.

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Information about the Author

Dmitry A. Izotov – Doctor of Sciences (Economics), Leading Researcher, Economic Research Institute, Far Eastern Branch of the Russian Academy of Sciences (153, Tikhookeanskaya Street, Khabarovsk, 680042, Russian Federation; e-mail: izotov@ecrin.ru)

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