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# INTEGRATION IN CRISIS: TOWARDS A NEW EXPLICATIVE MODEL

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*The goal of this study is to investigate the non-linear impact of crises on integrative structures through theoretical, empirical, and comparative analysis of four cases. This paper proposes a novel explanatory model of how integrative structures respond to various crisis junctures. The authors test the hypothesis that it is not the nature or intensity of the crisis, but rather the maturity and depth of integrative groupings' institutional arrangements — along with the actual balance of power between governance levels — that ultimately determine whether the organization consolidates further or begins to disintegrate. Based on a survey of 409 specifically selected experts on integration, the study reveals that strongly integrated unions tend to strengthen during crises but often experience disintegrative backlash once the crisis subsides. Conversely, weakly integrated unions tend to loosen their ties during crises but regain their capacity for cooperation shortly thereafter. This model is explored through four case studies that consider how the 2022 and ongoing Ukraine conflict affected the EU (with a special focus on the energy crisis), NATO, BRICS and a quasi-integrated network of world-class universities. The findings show that policy responses to crises should be specifically calibrated to the integration model that the organisation follows.*

**Keywords:**
crisis, integration, EU, ASEAN, NATO, higher education

## Introduction

The French diplomat Jean Monnet, a staunch supporter of European integration whose ideas originally inspired the Schuman Plan to unite the French and German national production of coal and steel, is famous for his inspirational

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words on European integration. Although he predicted that Europe would be built through a chain of reactions to crises [1], he gave little consideration to the potential damage such crises could inflict on integrative structures. While historical analyses of integration processes in the literature suggest that, in some cases, crises may drive partners toward a more institutionalised framework of cooperation ('an ever closer Union'), other cases indicate that crises can result in the rupture of the cooperative fabric. In studying this phenomenon, experts have pointed out that the reaction to a crisis may depend on the nature of the challenge, with Schimmelfennig [2] arguing that while 'failures' entail further capacity-building, 'attacks' only enable pre-existing coping mechanisms and are consequently more harmful to integration. The limit to this perspective is that a majority of crises are both failures and attacks, as these two types of crisis amplify one another.

In this paper, we test the hypothesis that the nature of the organisation and the level of integration are more relevant in the prediction of the impact of a crisis than the nature of the challenge itself or its intensity. Consideration is given both to the immediate response and to the medium to long-term consequences of crises. The paper proposes an original definition of integration — a phenomenon that is commonly described in the expert literature as the process whereby neighbouring countries deliberately transfer parts of their decision-making authority to a supranational entity through a combination of formal agreements and informal arrangements. From our viewpoint, integration does not necessarily require centralised (supranational or intergovernmental) governance, nor does it have to occur exclusively between neighbouring states. Still, some involvement by national governments may occur (so called "steering at a distance") even when integration is primarily advanced by private actors or on a micro-level.

In line with our understanding integration can be defined as the development of common institutions and rules in different sectors by actors from various countries, which leads to a mutual dependence and preferentiality in mutual dealings. We hence consider the EU, NATO, BRICS and coordination among world-class universities in higher education to be integrative structures with varying levels of institutionalisation. The terms 'integration in higher education' and 'world-class universities' [6] are used interchangeably to refer to the fourth case, and designate the deep cooperation processes and implementation of common institutions that have created a mutual dependence between universities across the world.[1] The study focuses on these four specific integrative structures, but the findings apply to other entities presenting similar characteristics.

We use a mixed-methods three-level research design, based on a theoretical, comparative and empirical investigation of crisis and integration. The data collection process, comprising 409 expert standardised survey responses and indi-

[1] For further information on the norm of world-class universities, refer to: Crowley-Vigneau, A., Kalyuzhnova, Y., Baykov, A. 2023, World-class universities in Russia: a contested norm and its implementation, *Journal of Studies in International Education*, № 27 (3), p. 539—556.

vidualised comments, yields information on how organisations with different levels of integration react to crises over time. Respondents, hailing from 83 different countries, were selected based on their expertise on one of the four cases following strict criteria and are either reputable academics or professional diplomats. The findings show that strongly integrated unions gain in power in times of crisis but suffer from disintegrative backlash after the crisis has run its course. Conversely, weakly integrated unions experience a loosening of their ties in times of crises but recover rapidly thereafter their capacity to pursue cooperation. The novelty of this perspective lies in the medium to long-term analysis of the impact of crises, which can have a greater influence on the structure of an organisation than immediate reactions to a crisis. It also highlights the mechanisms at play behind the belated consequences of crises.

The remainder of this paper proceeds in four sections: a review of the expert literature on crises and integration is followed by an analysis of the research goals and design of the study. The findings, presented with illustrative quotes and graphs, precede a discussion section which includes policy recommendations.

## Integration and crisis

Integration takes many different shapes and forms, leading to a variety of different definitions of the term. The scholarly emphasis on European integration has resulted in a constricted conceptual scope, often making it challenging to apply the term to broader or more flexible forms of integration.

A historical overview of the literature yields some theoretical insights: Ernst Haas's 1958 definition of integration as "a process whereby political actors in several, distinct national settings are persuaded to shift their loyalties, expectations and political activities toward a new centre, whose institutions possess or demand jurisdiction over the pre-existing national states" [3] has the advantage of combining both the social and political dimensions of integration. Intergovernmentalism places a stronger focus on political aspects of integration and the creation of joint institutions, and this will be the primary focus of this paper. Although behavioural parameters are not overlooked, a definition that focuses on social aspects of integration is too restrictive and leaves out some interesting cases. Integration is best considered as a process that governments embark on, a voluntary and reversible delegation of decision-making power to a supranational entity. While both neofunctionalists and intergovernmentalists view integration as a process rather than as a political outcome, other authors, specifically specialists of the EU, have taken an interest in the ultimate political form the EU may come to take [4]. Experts concentrating on the EU integration offer very specific analytical insights on integration, which are not always applicable across the spectrum of different integration cases [5].

There is practical merit in studying different types of integration trends, and to analyse comparative integration as it helps to explain how different organisations are likely to evolve. The neofunctionalist spill-over described by Haas was

later applied to other cases of integration elsewhere in the world, specifically to Latin America [7]. The question whether the economic integration of a group of countries will lead to greater political unity is answered negatively by Haas and Schmitter [8], who note that accelerated integration results from a rather rare combination of circumstances, referred to as a 'creative crisis', that make members realise they fare better as a group in mitigating the impact of a problem than alone or with a different set of partners. The deepening of integration appears as an exception rather than a rule and it was noted that integration is a process that shows little continuity, that it can flow backwards and that each region that undergoes integration processes follow an individual set of mechanisms, meaning that there is as such no 'theory of integration' that would be universally applicable [9]. The existing theoretical perspectives on integration were developed, however, in parallel with the unification of European countries: the optimism of the early years of the European Coal and Steel Community, which evolved into the European Economic Community, was a time of avid academic interest in how the integration would develop. However, the crisis of the 1960s characterised by the French resistance to qualified majority voting and the 1966 compromise that ensued in which the six members "agreed to disagree" marked the start of a standstill in the academic world with some authors theorising the stalling and even reversal of integration such as Lindberg and Scheingold with their work Europe Would-Be Polity published in 1970. Haas himself expressed disappointment in the integration process in Europe, with a fundamental work on 'the obsolescence of regional integration' [10]. The disappointment in the stagnation of the European project was short-lived, and the resistance of General De Gaulle to the development of integration beyond intergovernmentalism came to an end as he left power. Some authors noted that the 1970s were not a time of stagnation but of preparation for the next stage of integration, which was misread at the time by many politicians and experts [11]. With the adoption of the Single European Act, then in 1991 the Maastricht Treaty, integration restarted in Europe and academic interest in the subject once again blossomed [5].

A number of new ideas emerged alongside the hypothesis that legal integration could represent the next stage beyond economic integration [7]. The theoretical development of integration theory was divided into three phases by Wiener [12]. The first phase, 'explaining integration', began in the 1960s and focused on understanding the underlying reasons for integration processes. The second phase, 'analysing governance', dates from the 1980s and aims to interpret the EU as a political entity by examining its internal political dynamics and the functioning of its regulatory frameworks [12]. The third phase, 'constructing the EU', started in the 1990s and addresses the consequences of integration as well as the potential generalisability of the integration phenomenon. The theory of integration has thus evolved from liberal and realist paradigms (depending on the author) toward approaches grounded in policy analysis, social constructivism, normative theory, and political economy [12]. Wiener underscores the absence of stagnation in the

academic development of integration theory and characterises the post-1970s period as especially productive in terms of conceptual understanding of integration processes.

The earliest ideas on integration predate the European project only by a few years. Liberal approaches to IR criticised the realist approach to state sovereignty and noted that the world would be more peaceful if transnational organisations were capable of putting pressure on states [13]. The focus was more on developing global forms of cooperation than regional ones, although there were some developments in the study of federalism. The study of integration took off in the 1950s and especially 1960s with a focus on the potential of developing supranational institutions in different policy areas that would 'spill-over' to other areas, leading to a reinforcement of supranational commitments [14]. Functional spill-overs refer to the way in which policymaking in one sphere, as it naturally develops, comes to encompass other sectors. For example, a joint economic policy often leads to the development of joint legislation to regulate economic practices. Political spill-overs result from the shift in identities of actors that have started an integration process; in short, the more you integrate, the further you wish to deepen your commitments. Cultivated spill-overs were also identified and result from the desire of supranational institutions to increase their power and increase the number of issues subject to joint governance [15].

This period comprised attempts to theorise integration beyond Europe and to define the features underlying successful integration processes. The theory of transactionalism developed by Deutsch predicted the advent of a period of intense transnational communications that would create a greater solidarity between people beyond national borders [16]. Other scholars suggested that sovereignty was being temporarily pooled by governments rather than renounced, with some suggesting that integration could in the end reinforce the power of sovereign states rather than reduce it [17]. Moravcsik has a state-centric approach and underlines the importance of non-coercive interstate bargaining in integration processes [18]. He argues that European integration did not result from geopolitical or ideological factors but from the appeal of transactional gains. The perspective rejects the idea of path dependence linked to integration and the notion of neo-functionalist spill-over. A separate line of thought emphasised the state being challenged by supra- and sub-national entities, and slowly falling into decay. Rosenau described these changes as "turbulence in world politics" and writes about the "aggregation of parts and the disaggregation of wholes" [19]. Scholars also argued that integration processes could never be entirely controlled by the states participating in them, and that a return to the situation pre-integration was not possible [20]. Supranational institutions allow states to reduce uncertainty but create a level of dependence unrecognised by intergovernmentalists.

The second stage of theorisation of integration led to more interdisciplinarity and a better understanding of the functioning of the European entity. Academic research focused on dissecting the new institutions which appeared to have

emerged out of nowhere. In 'the anatomy of an institution', the different levels of governance were explored and compared to a network with official and non-official vectors of influence [21]. Ruggie explained the appearance and development of the EU by the uptake of new norms and regimes which came to govern the international system as a whole but also facilitated the development of regional cooperation [22]. Different supranational institutions were seen as supporting each other, and the integrated Europe was described as a pillar of NATO. As the EU moved forward after 1992, attention was given to the maintenance of good governance within the organisation with the theorisation of the 'democratic deficit' and the need for transparency in the work of supranational entities, particularly the European Commission [23].

The advent of constructivism in the 1990s opened a new path of investigation into integration processes. The new focus on agency, identity, norms and social behaviour paved the way for a new analysis of the reasons behind the European construction [24]. The main debates amongst policymakers and governments about widening versus deepening commitments in the EU and about resource redistribution led to an increased academic attention to the future format of Europe [ 25]. Studies on rule violations by EU member states have shown that such conflicts are often followed by the activation of 'decompression mechanisms', after which the Union implements policies allowing for differentiation among members [26]. The acceptance of diversity, along with the idea of multi-speed integration, has thus emerged as a pragmatic response to the resistance of certain member states. The politization of the EU in the 1990s led to a renewed analysis of spill-over processes, and the 2004 Constitution for Europe brought about a finer analysis of governance mechanisms within the EU. Critical theory has also been applied to the analysis of integration, with discourse analysis enabling the deconstruction of core concepts underpinning the European project, thereby revealing underlying biases and limitations [11].

The question of the legitimacy of supranational entities to govern and make decisions remains to this day a subject of scholarly interest [27]. The notion that the EU is constantly undergoing changes through spill-over mechanisms is now widely accepted by policymakers who often refer to the Union's projects as ongoing and even incomplete [28]. Recent perspectives also criticise the idea of the EU's exceptionalism, noting that sovereignty is 'pooled' but not renounced, and comparing the EU to a neo-medieval empire which has a complex, layered, and overlapping system of authority [29].

This overview of the literature shows that although early works presented some flexibility and provided different perspectives on integration, recent scholarship has focused on the development of the EU and this has led to a narrowing of definitions of what integration is, with 'EU exceptionalism' and perceptions the EU's 'normative power' [30] crowding out other perspectives. The rise of constructivism, and particularly its vision that national governments do not necessarily initiate all changes in international politics, paves the way to a wider

perspective on integration, which can be driven by sub-national actors with few geographical constraints. Thus, it is analytically productive to view *integration as the development of common institutions and rules in different sectors by actors from various countries, which leads to a mutual dependence*. We hence consider the EU, NATO, BRICS and higher education to be integration structures with different levels of institutionalisation.

Although the analysis of how crises affect integration is also highly EU-focused, the literature on crisis management in international organisations yields some valuable insights. A crisis can be defined as "an urgent threat to the basic structures or fundamental values [of an organisation], which harbours many 'unknowns' and appears to require a far-reaching response' [31, p. 5]. Threat perception is inherently subjective, and for a challenge to be considered a crisis, it must be perceived as posing an existential threat to a given polity[31]. When considering a regional organisation, the primary threat can be formulated as a risk of disintegration, widely described as rolling back on common policies, a reduction in territorial scope or in the authority of the common institutions [32]. The depth of a crisis is often assessed based on the intensity of the response, which can range from minimal (minor policy reform) to extensive (major institutional changes, coalition-building to defeat challenging states) [33]. An organisation's response to a crisis may depend on the nature of the crisis, with external challenges more frequently commanding conciliatory behaviour and a tightening in ties between members, and internal challenges more likely to lead to mutual blame.

The trigger of the crisis has also been analysed as impacting the outcomes of a crisis, with 'failures' entailing further capacity-building, while 'attacks' only enable pre-existing coping mechanisms and are assessed as being more harmful to integration [2]. Attacks are not linked to capacity deficits but to disagreement with the identity or values of an organisation and are deliberate actions to undermine the integrity of an organisation. While this distinction is analytically useful, most past crises have represented both failures and attacks, as a polity is most vulnerable — and thus most likely to be targeted — precisely when it is undergoing internal failure. This conceptual distinction does not, in some cases, allow observers to determine the potential impact of a crisis until it has come to a natural end. The nature of an attack or more specifically whether it has an internal or external origin may be a more significant factor in determining whether a polity reacts in a united way to a threat or runs the risk of disintegration, groups are more likely to unite to face off a common external challenger than an internal one. When dealing with the specific situation in which the challenge comes from a member state, the joint decision to adopt a conciliatory approach towards that state or to be assertive and attempt to isolate it plays a key role in the final outcome of the crisis and requires determining whether deep or wide participation is the priority for the organisation as a whole [33].

The distinction made in the constructivist literature between validity and applicatory contestation also shows that a crisis questioning the core values of an

entity will have more dire consequences than challenges surrounding policy issues (or the ways the values are applied) [34]. The response to a crisis also depends on an organisation's culture, the time the crisis is identified and whether it is framed as existential, with denial sometimes used as a coping strategy [35]. Perceptions can, however, change, and as the consequences of a challenge become apparent with time, the situation may be 'upgraded' to being considered a crisis, leading to late response mechanisms. In integrated entities, threats may be perceived at the level of member-states governments, at the level of the institution's representative organs and bureaucracy or at both levels simultaneously. Common threat assessment is predictive of higher-level intensity threats, but also more effective and better coordinated crisis management. Joint recognition of a problem is a protective factor against validity contestation, but does not, however, guarantee less applicatory contestation [36].

## Methodology and context of the case studies

### *Case study selection*

Four different organisations were selected to investigate how crises affect integration, with a new definition of integration used by the authors as explained in section 1 of this paper. The EU is widely recognised as a highly integrated regional organisation and warrants no justification for its selection. NATO is also a tightly integrated regional organisation, although it lacks the traditional geographical and multi-sphere characteristics of the EU. There is, however, little contestation of the fact that its members have extensively interlinked their security and military policy. BRICS is not traditionally considered an integration structure as members do not delegate spans of their critical decision-making authority to the organisation. Nevertheless, its members have created common institutions and rules in different sectors, and a mutual dependence has appeared. Ties are characterised by mutual interaction before major foreign policy decisions and a common path taken to oppose US unipolarism. International higher integration, which we also qualify as the norm of 'world-class universities', is a micro-level and sector-specific form of integration which led members to participate in common institutions and regulatory bodies to develop competitive universities based on a common model. It fits with our definition of integration as integrated university systems are mutually dependent: from the struggle to be globally recognised, to attracting the best students, professors and sponsors, participating in global rankings, competing for the best business partnerships, universities follow common rules that regulate the form and content of higher education. A common crisis has affected all these structures, the 2022 and ongoing Ukraine crisis, although in the case of the EU, a special focus is put on the energy crisis that resulted from the Ukraine conflict.

These four cases were selected following the 'most different' research design, exploring two highly integrated structures that have little in common (EU and

NATO: different scope, reach, sectoral specialisation) and two structures with low levels of integration that are radically different (BRICS and world-class universities: top down versus bottom-up integration, different levels of public awareness). The case selection shows that the level of integration is more important than the nature of the organisation. Selecting the same crisis for all cases allows for a more accurate comparison between the cases. In brief, we are testing whether we have similar outcomes when different organisations are confronted with the impact of the same crisis. Figure 1 illustrates where each case stands by the level of integration.


Fig. 1. Cases on the spectrum of integration

***Data collection***

This research is based on a mixed-methods data collection process, including four surveys of altogether 409 experts in integration. The goal of the study is to determine, based on perceptions of current and past events, how crisis events affect integration structures. Each case study was investigated through a separate survey, consisting of tailored questions targeting a specific integration phenomenon and its reaction to crisis. The survey on the EU and the 2022—2023 energy crisis had 102 respondents, the survey on NATO and the Ukraine crisis had 100 respondents, the survey on BRICS and the Ukraine crisis had 101 respondents, and the survey on world-class universities and the Ukraine crisis had 106 respondents. Each survey consists of nine questions: the first clarifies the sphere of work of the respondent, the following seven represent a progressive investigation into how crises affect integration mechanisms and the last offers space for respondent comments in free form. This semi-structured design enabled the authors to obtain responses to specific questions of interest while also incorporating participants' insights on causal factors and their reflections on the survey itself.

Appendix 1 contains the full set of interview questions used for each survey. This paper examines the hypothesis that the effects of crisis events on integration structures vary according to the depth of integration. The questions move from confirming general trends to investigating the role of actors within organisations and the short and long-term consequences of crisis events. The surveys were conducted between April and August 2024 with experts on both EU integration (survey 1), NATO (survey 2), BRICS (survey 3) and world-class universities (survey 4). They come from various spheres: academia (123 respondents), the

media (97 respondents), the energy industry (43 respondents), EU institutions (13 respondents) and local and national governments (133). Respondents were selected to meet at least one of the following criteria:

— no fewer than 3 academic articles published in Q1 journals (Scopus ranking) over the past five years (2020 to 2024) on topics related to the survey;

— no fewer than 15 articles on the topic of the survey published in national newspapers in 2023;

— a permanent position in government or a state institution / agency that plays a key role in interacting with the EU, BRICS, and NATO or coordinates higher education programmes.

Respondents were also selected to represent a wide range of nationalities (28) to minimise biased perception. This purposive sampling does not claim to be statistically representative of the entire population of these countries but aims to present a wide scope of perceptions. The survey results yielded significant insights regarding how crises influence different integration structures. Comments provided at the end of the survey in free form were highly informative as they revealed how governing organs reacted to the crisis, how populations perceived governance changes and the degree of doubt or certitude of the respondents when answering the survey questions. These qualitative insights are also presented in the findings section.

### *Context of the case studies*

*Case I. EU and the 2022—2023 energy crisis*

The 2022 crisis in Ukraine and the sanctions the EU adopted against Russia set the stage for energy shortages in the EU. The organisation redefined its understanding of energy security by prioritising political considerations over economic ones. 2022 and 2023 represented a scramble to accelerate the energy transition to renewables and end dependence on fossil fuels, particularly those which were previously procured from Russia. Between July and September 2022, Russian gas exports to Europe declined by 74 % compared to the same months in 2021. While the focus had been during the COVID-19 pandemic and in previous years on increasing the use of natural gas as a cleaner alternative to oil, EU policymaking made a U-turn in 2022 to prevent shortages. The energy response included the reintroduction of dirtier fossil fuels such as coal, renewed emphasis on nuclear energy, costly LNG imports from 'friendly countries', and increased investment in renewable energy. The REPowerEU programme, launched in 2022 by the European Commission, prioritised the phasing out of Russian imports and provided funding for an acceleration in the development of renewables. Significant funding was also allocated to help the end consumer cope with the increase in energy prices.

While some argue that the Energy crisis has moved forward the energy transition and helped the EU reach its goals of clean, independent and participative energy, others underline the additional costs for the civilians and businesses

of the EU, with numerous cases of 'energy poverty' being investigated across Europe. The economic slowdown resulting from high energy prices is tangible, as accessible energy has always been associated with economic growth and well-being. The accelerated energy transition has led to new fragilities in the EU's energy mix, with an overreliance on novel but fragile technologies such as wind farms and solar energy, which are themselves vulnerable to changes brought about by climate change. The impact of the energy crisis on public sentiment and on attitudes to the EU within member countries remains underexplored in the expert literature; however, the hike in election results of nationalist parties in 2023 and 2024 shows that the technocratic energy management of the EU has fostered significant discontent across Europe.

*Case 2. NATO and the Ukraine crisis*

Created in 1949 by 12 countries from Europe and North America, NATO emerged from the ashes of World War II, during a period of significant tensions and ideological divisions that characterised the early years of the Cold War. The treaty established a collective defence system wherein an attack against one member would be considered an attack against all, enshrining the principle of collective defence. NATO fostered an integration of its countries' military capacity and imposed upon its members a certain level of political cohesion. NATO has undergone several waves of enlargement and currently comprises 34 members. The challenge to NATO's core identity came with the end of the Cold War. Following the dissolution of the Warsaw Pact and the collapse of the Soviet Union, NATO progressively evolved from a defensive alliance to an offensive one, embarking on poorly concealed efforts to promote the interests of its leader, the United States. From taking over peacekeeping operations and transforming them into regime change endeavours, to battling terrorism while frequently fostering it, NATO sought out for itself a new identity. Bolstering its presence in the Baltic states and Eastern Europe led to a confrontation with Russia as NATO started to threaten the country's security interests and challenge its regional influence. NATO's attempts to constantly redefine its role after WW2 have led to behaviour that has been seen as offensive by a large number of states in the international system. Its aggressive stance on the 2022 Ukraine conflict has led to a crisis within NATO itself rather than to its consolidation in the face of a newly framed enemy. Many NATO members aspire for peace and are against arming Ukraine, as this only draws out a destructive confrontation and risks an escalation to a full-fledged war between Russia and the West, with the possible use of nuclear weapons. This case shows that further forced-forward integration in cases of crises cannot lead to a consolidation of a regional organisation.

*Case 3. BRICS and the Ukraine crisis*

The BRICS started out as a disparate group of countries with the primary intention of contesting the Western-dominated world order. The term BRIC (originally excluding South Africa) was invented by Jim O'Neill in his 30th No-

vember 2001 working paper for Goldman Sachs and refers to the rising economic potential of Brazil, Russia, India and China. The first official BRIC meeting was organised in 2006 on the sidelines of the 61st UN General Assembly meeting, and the four countries began an official political dialogue through their foreign ministers. Meetings on a ministerial level became, from that date, a common occurrence and many topics were discussed, including healthcare, environmental protection, industry, and international politics. The organisation was joined in 2011 by South Africa, becoming BRICS. At the 7th BRICS summit, the countries created the New Development Bank to help finance infrastructure and development projects. The bank was designed with the purpose of counterbalancing institutions led by the United States, such as the World Bank and the International Monetary Fund. In 2024, BRICS admitted four new members: Egypt, Ethiopia, Iran and the United Arab Emirates. The underlying values of the organisation, such as the respect for sovereignty and the principle of non-intervention, have proved attractive, and the organisation has a large following in Africa, Asia and Latin America. Nevertheless, the organisation is facing an identity crisis linked to the Ukraine conflict as some members show different political positions and support opposing sides, with Brazil originally standing by Ukraine and the US, India and China largely sitting on the fence and Russia voicing its discontent at US aggression.

*Case 4. World-class universities and the Ukraine crisis*

The mechanisms that guided the global integration of higher education took several forms: the first is the informal spread of the norm of world-class universities with countries around the globe launching excellence in higher education programs to increase the attractiveness and visibility of their universities worldwide, the second forms a part of the first and consists of more formal and institutionalised mechanisms developed to promote integration such as the Bologna process. After the Second World War, the United States and the United Kingdom created a model of liberal universities competing with each other for the best students, professors and researchers. What started off as a national project spread with globalisation to other countries, first Western Europe, then China, Russia and other parts of the world. The majority of countries aspire and spend considerable government funds to join a process in which universities compete to be the highest ranked, to have the best business partnerships, the most prominent research and the most visible brand. This led to integration and to a loss of autonomy and sovereignty as states adopted international and mostly Western measures to govern their educational system. Launched in 1998, the Bologna process is a formalisation of the integration which aimed to ensure comparability in the standards and quality of higher-education qualifications in 49 countries through a harmonisation of the administration and content of education and creating a significant level of inter-dependence. The integration process is, however, experiencing a crisis as countries have come to realise that one university model is not suitable for all: discontent of academic staff at the commercialisation of education and the neglect

of the humanities, was accompanied by a realisation that the system led to a brain drain of the best students and professors to the highest-ranked, mostly western, universities. The content of higher education is geared towards goals which did not develop the local economies of their countries. Many countries have realised that they have joined a system that favours the economic and cultural development of the West and particularly the Anglo-Saxon world. The ways in which this crisis will affect integration processes are explored in this thesis.

## Findings

The surveys show that strongly integrated unions strengthen in times of crisis but are likely to suffer from a disintegrative backlash once the crisis has played out. Conversely, weakly integrated unions experience a loosening of their ties in times of crisis but recover rapidly thereafter their capacity to pursue cooperation. BRICS and international higher education are representative of structures with low levels of integration, while NATO and the EU are considered to be highly integrated. Respondents assess that while BRICS and international higher education responded to crises by rolling back and *de facto* 'waiting out' the difficult times by concentrating on national priorities, in the medium to long term they were able to pick up cooperation with their partners where they had left off. In these cases, integration was not considered to be compromised. The cases of highly integrated structures such as NATO and, particularly, the EU show reverse trends, with crisis events leading to a spill-over, empowering governing bodies and deepening integration. However, the effect was assessed by respondents as short-lived as the forced-forward integration was unpopular with the public and led to a loyalty crisis, which poses threats to the very survival of the organisations. A summary of the findings can be found in table. The remainder of this section presents the results of each of the surveys in greater detail.

**Integration and crisis**

| | Level of integration | Type of participation | Nature of the crisis | Intensity of the crisis | Main actor in the crisis | Short-term impact on integration | Long-term impact on integration |
|---|---|---|---|---|---|---|---|
| EU | High | Conscious | Energy | High | Integrated entity | Spill-over | Contestation |
| NATO | High | Conscious | Political | Medium | Integrated entity | Spill-over | Contestation |
| BRICS | Low | Conscious | Political | Low | States | Roll-back | Advancement |
| International Higher Education | Medium | Unconscious | Functional | Medium | States | Roll-back | Advancement |

### *Case 1. EU and the 2022—2023 energy crisis*

The findings demonstrate that the energy crisis has led to a hike in the importance of the Commission and EU organs in general, with states delegating formally and informally further powers to the EU to jointly address a common challenge. The respondents confirm the idea that the EU is 'falling forward', a phenomenon previously described in the literature as a motor of growth for the EU (see Jones et al. [37]). Further inquiry, however, suggests that this increase in the power of the EU suffers from a democratic deficit, and popular discontent with energy policymaking in the EU may lead to backlash against the organisation. Figure 2 provides an overview of respondents' answers to the survey.


Fig. 2. Survey outcomes on the EU and the energy crisis

The first question reveals that EU citizens retain some influence on EU policymaking, as a small majority of respondents (53 %) believe that popular perceptions of EU integration still determine political outcomes. This point is important as, in the absence of popular influence on the EU, backlash as such would be unlikely. EU citizens impact policymaking through the EU Parliament, the Council and also through internal politics, by empowering Eurosceptic leaders. Answering the second question, respondents (59 %) confirmed the fact that the EU took a leadership role in energy decision-making during the 2022—2024 crisis and that this led to an increase in the power of the EU Commission. Article 194 of the Treaty on the Functioning of the European Union states that energy is a shared responsibility between EU Member States and the EU, with members states deciding the conditions for the extraction of their natural resources, selecting between types of energy and deciding on the structure of their energy supply and the EU controlling the functioning of the energy market, promoting energy security, energy efficiency and promoting renewables (EU Energy Policy 2024). However, the issues dealt with at the EU level have increased in importance, with the green transition away from fossil fuels being strongly promoted from above.

When asked how well the EU has managed recent energy challenges, 61 % of respondents expressed dissatisfaction at the increase in energy poverty and the management of the energy crisis by the EU. Some comments left in free form by respondents reveal the gap between the optimistic EU discourse and the reality of people on the ground, with an estimated 9.2 % of EU citizens experiencing some

level of energy poverty.[1] They also show that the decision to cut fossil fuels was made too fast to ensure energy security. Comments also target specifically the EU Commission, emphasising its distance from the people and the 'ivory tower' it governs from. Grass-root discontent is on the rise, both with the EU and with the governments of member states. When asked whether the energy crisis had led to more discontent with the EU and to an increase in nationalism in member states, 61 % of respondents answered 'yes' while only 23 % answered 'no' and 17 % were uncertain. The findings show that the energy crisis has reduced the general approval of the EU and has been a catalyst for an increase in nationalist sentiments. The EU is not the only source of popular discontent, as national governments are also being held responsible by the population for some of the repercussions of the 2022 energy crisis. This could lead to upheavals in national politics too.

The last closed question suggests that the EU is likely to face popular backlash resulting from the additional power it took to manage the energy crisis. 63 % of participants believe the EU will experience a roll-back of the power it acquired during the energy crisis, 21 % think the spill-over is long-lasting, while 17 % are undecided on the issue. One respondent commented that crises with external triggers, like the energy crisis, led to internal ones within the EU, with a delay ranging from several years to several decades. Brexit is mentioned by several respondents as the delayed consequence of the spill-over process resulting from the management of the migration crisis. The current energy crisis is seen as likely to entail a similar backlash. As the Commission increases its influence, dissatisfaction among the people empowers Eurosceptic parties, which may advocate for secession from the union.

### *Case 2. NATO and the Ukraine crisis*

The findings reveal that in the 1990s NATO lacked a mission and a sense of unity, and the prospect of expansion was the only forward momentum experienced by the organisation. The 2014 Crimea crisis and the ongoing Ukraine conflict reinvigorated NATO, offering it a new sense of purpose and bringing its members together against a common perceived threat embodied by Russia. The organisation increased in power and expanded its military presence globally and especially in Eastern Europe, deploying, starting in 2022, new battlegroups in Bulgaria, Hungary, Romania and Slovakia. This expansion was not accompanied by an increase in public trust in NATO, and respondents point out growing levels of scepticism about the organisation and its capacity to promote peace. The first signs of backlash after the spill-over caused by the crisis are already noticeable. Figure 3 provides an overview of respondents' answers to the survey.

[1] Energy poverty in the EU, 2022, *EU Parliament,* URL: https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733583/EPRS_BRI(2022)733583_EN.pdf (accessed 11.11.2024).


Fig. 3. Survey outcomes on NATO and the Ukraine crisis

The first question helps to establish the fact that public opinion in NATO member states impacts the organisation's decision-making and institutional structures, including country membership. 56 % of respondents believe popular perceptions have an impact on NATO. This is an important factor to establish, as it is a precondition for popular backlash having any impact on the organisation. Respondents also overwhelmingly agree that NATO in the 2000s had lost its significance. One respondent commented that NATO's identity as a defensive alliance and a guarantor of security for Europe appeared at the time as redundant. NATO operations in the former Yugoslavia, Kosovo and Libya were marked by controversy surrounding the scope of the mandates and their implementation. Russia's visible rise on the international stage and the 2014 Crimea situation led to a revival of NATO. 72 % of respondents noted that the events of 2014 brought together NATO members, while only 28 % think they divided them. Russia's Special Military Operation led to a clear new mission statement for NATO: Adopted in 2022, NATO's Strategic Concept[1] states that Russia is the most significant and direct threat to Allies' security and to peace and stability in the Euro-Atlantic area. Defining a clear enemy allowed NATO to expand its activities and temporarily increase its credibility. 44 % of respondents noted that NATO regained its mission and integrated further after the start of the Special Military Operation, 22 % noted that its mission remained unchanged since 2014, and 34 % noted that it created a division among its members. The consensus among respondents remains that NATO's influence grew sometime between 2014 and 2022 to unprecedented levels since the end of the Cold War. Expansion is also considered to be a factor promoting unity in NATO (78 % of respondents), with Finland and Sweden revoking their longstanding policies of non-alliance.

The way NATO is managed has also evolved over the last decade, with an increasingly belligerent US playing a central role in the decision-making process of the organisation. When asked whether the decision-making centre in NATO had evolved since the 2010s, 47 % of respondents noted the US plays a more important role in the alliance, and 34 % noted few changes, saying the US had always dominated the organisation. Importantly, 68 % of respondents noted that

[1] NATO's Strategic Concept, 2022, *NATO*, URL: https://www.nato.int/strategic-concept/ (accessed 11.11.2025).

discontent with NATO policy is on the increase compared to a decade ago. One comment underlined that the current steps taken by NATO are highly controversial and that there is 'no widespread appetite for increasing the Alliance's presence in Eastern Europe and even less support for Ukraine joining the alliance'. NATO's involvement in Ukraine is seen as a step towards an expansion of its size and agenda by some political leaders, but public opinion does not believe that financing Ukraine should bring about larger changes in the security alliance. Support for NATO has started to dwindle as some side effects of its rise become apparent: the increase in incidents and military exercises, the heightened militarization of the Baltic and Black Sea regions, sharp increases in military expenditure, a progressive change from a defensive to an offensive doctrine, have all led to an increase in public concern about NATO. Low levels of support for NATO are confirmed by polls: In July 2023, trust in NATO dropped as low as 30 %.[1] Donald Trump's 2025 accession to the US Presidency represents an extra factor threatening to undermine NATO, which is already challenged by grassroot citizens. Similar to the case of the EU and the energy crisis, the expansion in power of NATO has caused popular discontent, and a backlash is predicted to arise as a result of the accelerated spill-over.

### *Case 3. BRICS and the Ukraine crisis*

The findings for this case suggest that BRICS, being a weakly integrated organisation, suffered in the short term from the impact of the Ukraine crisis, with loyalties initially being divided between the countries supporting Russia and those preferring to align with the US hegemon. Notably, rather than cause vocal disagreements, the Ukraine conflict led each member (apart from Russia, which was directly involved) to take a step back and 'wait out' a time of heightened political tensions. This behaviour is in line with the previously established BRICS behaviour of avoiding controversial subject matters (see Crowley-Vigneau et al. [38], 2024). The crisis did not cause a spill-over, and BRICS did not double down on efforts to formulate common foreign policy statements. The development of economic cooperation, particularly between China, India and Russia, shows that US efforts to isolate Russia were unsuccessful. Brazil aligned with the West, voting in 2022 to condemn Russia at the UN General Assembly.[2] Each country privileged its own interests, took a step back from political cooperation, and in 2023, political cooperation restarted within the organisation. Figure 4 provides an overview of how respondents' answers to the survey help us answer the research question.

[1] Economou, A., Kollias, Ch. 2023, In NATO We Trust(?): The Russian Invasion of Ukraine and EU27 Citizens'Trust in NATO, *De Gruyter*, URL: https://www.degruyter.com/document/doi/10.1515/peps-2023-0029/html (accessed 11.11.2024).

[2] Brazil votes to condemn Russia, 2022, *Government of Brazil*, URL: https://www.gov.br/en/government-of-brazil/latest-news/2022 (accessed 11.11.2024).


Fig. 4. Survey outcomes on BRICS and the Ukraine crisis

Responses to the first content question confirm that BRICS can be considered to be an integration structure (68 %), showing that a wider definition of integration is accepted among experts. Delegation of authority is not a sine qua non condition for integration. 53 % of respondents even note that BRICS also has the potential to become a regional integration bloc, reflecting the decreasing importance of geographical boundaries for cooperation between states. One respondent commented: 'This is a mind-warping question in a way, we understand 'regional'so loosely these days that it could include countries very far apart and potentially in different regions. We just don't yet talk about international integration as such'. An investigation of China's role in BRICS attempted to determine whether the country's relative economic might poses threats to BRICS as an integration structure. 40 % of respondents note that China has more weight than other countries in decision-making in the organisation due to its economic clout. 34 % express concern that Chinese power intimidates its partners and could get in the way of BRICS integration. 24 % of respondents underline that China does not treat other states as equals. The main threat to BRICS is portrayed by respondents as the imbalance between its different members in economic and military might. One respondent, however, commented: 'BRICS as a framework is based on respect and the equal power in negotiations of sovereign states, so size should not matter. When Russia enhanced cooperation with North Korea, changing China's power balance with its ally, China accepted this situation and even remarked that it is not its business to comment on bilateral relations between two sovereign states.'

Expert assessments of the impact of the Ukraine conflict on BRICS show that the organisation was temporarily weakened by the crisis. 65 % of respondents suggested that solidarity within BRICS decreased with the crisis, 22 % that it didn't affect it in any way and 13 % that it helped consolidate the group. Findings also reveal perceptions that some countries within BRICS sided with the West in condemning Russia at the start of the Special Military Operation. 25 % of respondents believe there was no unified reaction at all, and 17 % believe there was a general display of support for Russia. In this question, we analyse perceptions rather than facts as they impact future integration potential. While Brazil did express disagreement with Russian actions in the Security Council, other countries refrained from commenting. Even Brazil's opposition was moderate: as noted in one comment: 'Brazil condemned Russia but shortly after it also criticised the West for arming Ukraine and prolonging the conflict. It has

also denied requests to sanction Russia. Experts emphasise in their responses a lack of unity and overall a reticence to take any steps against Russia. One respondent commented: 'The West makes a lot of noise in the media, jumps at the opportunity to call it the end of BRICS, but the countries have just gone quiet on this and turned their attention to other issues, economic and social ones'.

Survey results show that there has, however, been a shift in power within BRICS, mostly in favour of China (57 % of respondents). Russia is perceived as having proved its military might, its resilience and its capacity to stand up to the West, but also as going through a challenging time in economic terms. Even though from some perspectives, China is presented as a potential threat to BRICS, 83 % of respondents still believe BRICS will remain relevant in the near future, because the world needs a credible organisation to counter US hegemony (36 %) and because there is potential for wider cooperation (48 %).

The survey shows that BRICS was negatively affected in the short term by the Ukraine crisis and that, in the short term, no spill-over took place. However, the organisation has preserved the capacity for future integration intact, and no backlash is expected in the medium to long term against BRICS, as popular and expert perceptions of the organisation remain positive.

### *Case 4. World-class universities and the Ukraine crisis*

Universities around the world have developed common educational programs and administrative models in order to globally compete among themselves, with the development of world-class universities frequently being presented as an enabler for diversified and dynamic economic growth. The Bologna process is a regional integration mechanism that led to the standardisation of higher education systems in EU countries. Less formalised, the norm of world-class universities has integrated more universities from a larger array of countries aspiring to excel in rankings and attract the best students, professors and business partners. The survey assesses the impact of the Ukraine crisis on global integration mechanisms in higher education. The findings show that the ideological tensions and sanctions resulting from the crisis have put strains on some countries' capacity and desire to globally integrate their universities. However, the potential for further integration remains promising, despite contestation mechanisms, as the economic benefits outweigh the political risks. Figure 5 offers an illustration of this case's responses.

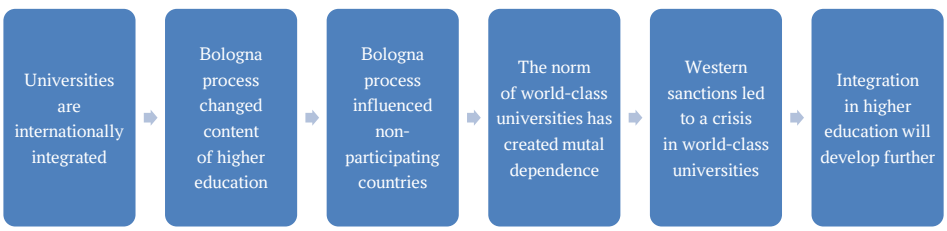


Fig. 5. Survey outcomes on world class universities and the Ukraine crisis

The first question aimed to collect expert perceptions on the level of integration between universities across the globe. 72 % of respondents noted that international cooperation between universities was either 'deep' with joint educational programs and research redefining the identity of these universities (46 %) or that universities were thoroughly integrated as their performance is evaluated by common entities and they compete for students and faculty across borders (26 %). One comment introduced a distinction: 'Not all universities in a country are world-class, far from this, but the top universities strive for this status and the others often follow suit, even if they have few prospects of emerging as global leaders'. The Bologna process, which is the main formalised sub-norm governing the integration of higher education, is considered by respondents to have had a significant impact on participating countries and a trickle-down effect on other countries, whether they associated themselves formally in any way with the process or not. Respondents noted that the Bologna process changed primarily the administrative model of universities (26 %), the content of teaching (47 %), and the way research is performed (17 %), with only 23 % noting that none of the above were significantly impacted by the Bologna process. When asked about how it influenced non-participating countries, 26 % thought the process did not affect the rest of the world, while the rest of the respondents noted that it either affected perceptions of what makes a good university or directly led to changes in their organisational and teaching model.

The norm of world-class universities, in spite of being a much wider and less formalised process, has nonetheless led to very significant changes in higher educational systems around the globe, against the backdrop of globalisation and heightened economic competition. 48 % of respondents recognised some influence of the model of world-class universities, which was promoted by the World Bank as a solution to help developing countries become more economically competitive. 28 % noted that the model has a significant impact due to all universities globally striving to mimic leading universities. 24 % did not recognise any significant impact. A respondent summarised his/her viewpoint: 'Higher education has become a competitive market where universities render a service. The question is not whether states want their universities to participate or not, there is little choice as isolation leads to loss of competence and in the end to a brain-drain abroad.' When asked whether the norm of World-Class universities benefits primarily the West, 59 % answered negatively, 41 % positively, reflecting the fact that Western dominance in the internationalisation of higher education is an ongoing concern for over a third of respondents. One comment reflects the complexity of the issue: 'World-class universities emerged in the West. The US did initially set the rules, and they are not all fair. But the sheer volume of countries integrated in the process has led to changes that the West is no longer in control of.'

The Ukraine crisis has affected the integration of universities significantly by revealing the reality of this informal integration process to the non-Western

members involved. As Western sanctions against Russia were implemented, Russia's higher educational system, which counted a dozen global leading universities, found itself isolated as partner universities and contractors broke off ties and implemented mobility restrictions that made it more difficult for foreign students from some parts of the world to come and study in Russia. Opinions were split concerning the reasons and circumstances that led to Russia withdrawal from the global higher education arena. 19 % of respondents noted that Russian universities had been forcefully excluded, 33 % that it had left of its own accord, 33 % said they left because it was in their best interest to leave the globalised education system after the crisis and 26 % noted that Russia has not truly left as disintegration is a much longer process and Russian universities remain largely defined by their international interactions over the past twenty years. Regardless of these differences of opinion between experts, a new trend was highlighted by several respondents: Russia's experience of rejection has been a lesson for China, India and other countries which now have launched contestation of the Western-led model and aspire to develop World-Class universities on their own terms, prioritising national languages, traditions, values and culture. The short-term crisis in global higher education has led to a decrease in integration mechanisms. However, integration in higher education remains an integration process with promising prospects in the future. 67 % of respondents still believe that international cooperation is the key to the improvement of higher education and that integration is currently being redesigned to promote truly global, rather than Western values.

## Discussion

This paper lays out a novel definition (and conceptualisation) of integration, which significantly expands the scope and enhances the predictive capacity of integration studies, putting this academic field more in touch with current realities. The focus we place on integration being a process that cultivates a sense of preferentiality and, hence, mutual dependence rather than a delegation of decision-making authority (erroneously referred to as 'sovereignty' in the expert literature) is significant. It allows us to view through the same comparative analytical lens different institutional arrangements which would have been traditionally considered as being of a completely different nature and thus incomparable (e. g. NATO and world-class universities). We also show that units of different levels of analysis (including subnational ones) can participate in and shape integration processes rather than just governments. Mutual dependence does not require a delegation of authority, and as such, a governmental stamp of approval is not always needed for collaborative integration. Additionally, integration does not require collaboration and the creation of mutual dependence in more than one sphere. Countries can integrate in restricted areas, potentially very narrow ones (e. g. higher education, sports, airport security). In short, integration unfolds in

different forms, can originate from the grassroots or a government initiative, can include large or narrow groups of participants and can be multisectoral or sector-specific.

In addition, we introduce a novel analytical framework for understanding the impact of crisis events on integration dynamics, arguing that final outcomes depend more on the institutional architecture of integration than on the specific nature of the crisis itself. Figure 6 presents an overview of the theoretical contribution of this research, reflecting how entities with low levels of integration loosen their cooperation in times of crisis but then rapidly relaunch common policies; while entities with higher levels of integration deepen their cooperation and empower supranational institutions in times of crisis but subsequently face significant backlash challenges fraught with disintegration.

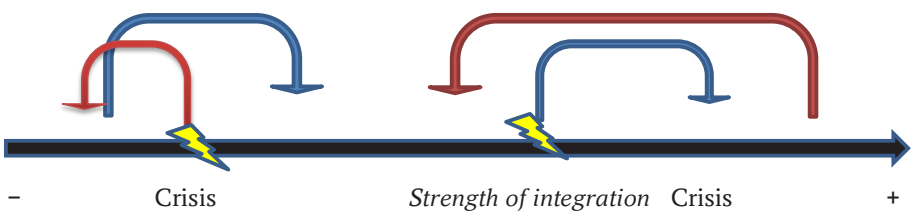


Fig. 6. Crisis reaction patterns by level of integration

These findings call into question a sizeable segment of the literature on EU spill-over mechanisms, demonstrating that these mechanisms can be detrimental to integration processes and that their use to solve a crisis leads to a greater politicisation and backlash, resulting in new vital threats to the organisation (e. g. how Brexit resulted from EU empowerment on migration issues, the possible outcomes today of the EU's energy management that goes against state interests). Future academic research should focus on the factors that determine the success of integration projects and the most productive coping mechanisms for integration structures in times of crisis. Each crisis encountered by the EU deserves to be analysed anew, with an investigation into the long-term consequences of the 'spill-over' or 'falling over' process. The root causes of major EU crises should be analysed in light of policy responses to past crisis events rather than focusing exclusively on external triggers. Assessments should be carried out on how far back the backlash process can take an entity that has integrated rapidly as a result of a crisis, and the factors that make backlash more likely.

Research should also focus on the dismantling of integrative structures, in an attempt to formulate adapted solutions for organisations which have outlived the reasons why they were created. Self-generating bureaucracy and fear of change can lead to integrative structures going rogue in an attempt to find a new mission statement. NATO's role in putting down the premises of the Ukraine conflict is not negligible. Structures with lower levels of integration should be analysed from the angle of awareness: to what extent are governments and populations

aware that integration is underway? While in BRICS, a top-down initiative, governments struggle to interest populations in grassroot cooperation and have to resort to public policy and soft power instruments to combat popular indifference; in higher education, in some cases, it is governments that struggle to understand and regulate these processes, often resorting post factum to mitigating measures.

These insights also allow for some policy recommendations:

First, attempts to accelerate integration can be damaging as they run the risk of reducing popular support for a regional organisation. Slow integration patterns allow for adjustment mechanisms to take place and avoid 'buyer's remorse'. The process through which an organisation recalibrates the distribution of power between the sub- and supranational entities is more balanced when it does not take place in times of crisis.

Second, integration models that are promising in the long term may specifically be those that allow countries to opt in and opt out consciously of every decision that is made. Flexibility stifles discontent, and voluntary participation helps to avoid internal conflicts, including the need to punish 'bad pupils'. There is also no evidence to show that flexible approaches make countries less likely to deepen their commitments.

Third, government delegation of responsibilities to a supranational framework should develop in parallel with popular support for this endeavour to ensure a smooth and durable transition into integration.

## Conclusion

The paper offers a novel account of how crises affect different integration structures and reveals, based on four case studies, the different coping mechanisms employed by each type of organisation. The authors formulate a broader conception of integration than is typically suggested in the existing literature, which allows for original and heuristic analytical insights. The study shows that the delegation of authority (quasi-sovereignty) is not always conscious (e. g. cases of BRICS or higher education) or consensual (e. g. EU spill-over mechanisms, NATO) but that states can always take back what is theirs and that they usually do so, during a crisis (for the least integrated entities) or after a crisis (for the more integrated entities). A qualitative inquiry based on a survey of 409 specifically selected experts on integration demonstrates that tightly integrated unions strengthen in times of crisis but suffer from a disintegrative backlash once the crisis has subsided. Conversely, weakly integrated unions experience a loosening of their ties in times of crisis but recover shortly thereafter their capacity to pursue further cooperation.

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# LEGAL ASPECTS OF THE USE OF PROFITS FROM RUSSIAN SOVEREIGN ASSETS BY EU COUNTRIES



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*The issue of using frozen Russian sovereign assets has remained at the centre of political and expert debate for nearly three years. In 2024, the G7 decided to allocate profits generated from these assets to service a syndicated loan intended to finance military and other forms of assistance to Ukraine. In early 2024, within the framework of its sanctions policy, the European Union adopted a set of legislative instruments designed to establish a Union-level legal mechanism for appropriating the profits derived from the investment of frozen Russian sovereign assets. This decision poses a serious challenge to modern international law and the system of international relations. This article seeks to outline the key characteristics of the EU-agreed mechanism for the utilization of Russian sovereign assets, with a view to evaluating its consistency with international law and the legal framework of the European Union itself. In pursuit of this aim, the author examines the legal dimension of the mechanism for the expropriation of profits from the use of Russian sovereign assets and attempts to model its potential implications, including possible countermeasures by the Russian Federation. The analysis leads to the conclusion that the mechanism as adopted may result in a breach of the Russian Federation's sovereign property rights, as well as other foundational principles of international law. Moreover, the EU's decision to channel profits from Russian sovereign assets into the EU's ownership raises a number of additional legal conflicts under both national and EU law.*

**Keywords:**
European Union, Russia, Ukraine, sovereign assets, international law, windfalls profits

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## Introduction

In September 2024, Executive Vice President of the European Commission Valdis Dombrovskis announced that the first transfer of €1.4 billion, consisting of proceeds from immobilised Russian assets, had been made to the European Peace Facility for the procurement of weapons for Ukraine.[1] The EU commenced the realisation of the plan to utilise frozen Russian assets.

The freezing and prospective use of Russian sovereign assets remains among the most contentious issues in the current Russia–EU relations. Sovereign assets include funds that form part of Russia's international reserves and are held in foreign jurisdictions. Primarily, this refers to funds invested in foreign financial assets by the Central Bank of Russia [1, p. 10]. After the start of the special military operation (SMO), the G7 and the EU decided to immobilise Russian sovereign assets held within their jurisdictions. As of February 2022, approximately half of Russia's international reserves were affected by this measure.

According to expert estimates, approximately €200 billion in Russian sovereign assets are currently blocked in EU countries.[2] In addition, around US $40 billion is frozen in the US and approximately US$20 billion in the UK.[3]

Almost simultaneously with the immobilisation of Russia's sovereign assets at the EU and G7 level, discussion broke out as to the confiscation of these assets for the benefit of Ukraine [2, p. 82]. After prolonged deliberations, no acceptable option for confiscating Russian assets was found, although the idea was not discarded. It was proposed to appropriate not the assets themselves but solely the revenue derived from their use. In the first half of 2024, the mechanism for utilising Russian sovereign assets was established at the level of the EU. The decision to utilise Russian sovereign assets will have far-reaching legal, political and financial implications. The EU's scheme, coordinated with G7 countries, to seize profits derived from the use of Russian assets presents a range of academic and practical challenges that require comprehensive analysis and the formulation of measures to safeguard sovereign property in the future.

This study undertakes a legal analysis of the EU mechanism for the use of Russian sovereign assets and identifies the potential consequences of its practical application.

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[1] Verbatim report of proceedings. Tuesday, 17 September 2024 — Strasbourg, *European Parliament*, URL: https://www.europarl.europa.eu/doceo/document/CRE-10-2024-09-17_EN.html (accessed 05.01.2025).

[2] EU Blocks More Than €200 Billion in Russian Central Bank Assets, *Bloomberg*, URL: https://www.bloomberg.com/news/articles/2023-05-25/eu-has-blocked-200-billion-in-russian-central-bank-assets (accessed 05.12.2024).

[3] Runde, E. 2023, Why the European Commission's Proposal for Russian State Asset Seizure Should be Abandoned. March 23, 2023, *Just Security*, URL: https://www.justsecurity.org/85661/why-the-european-commissions-proposal-for-russian-state-asset-seizure-should-be-abandoned/ (accessed 05.01.2025).

## Legal framework for blocking and utilising Russian foreign assets

After the beginning of the SMO in Ukraine, the EU Council adopted Decision № 2022/395[1] and Regulation 2022/394,[2] under which the Union imposed restrictions on Russia's sovereign assets. According to Article 5a(4) of Regulation № 833/2014, as amended by Regulation № 2022/394, a prohibition was introduced on all transactions related to the management of the reserves and assets of the Central Bank of Russia.

Restrictions on Russian sovereign assets were introduced for the first time as part of the EU's sanctions policy against Russia. Until February 2022, the EU had focused primarily on applying blocking financial measures against private entities and only rarely on so-called trade sanctions [3, p. 245].

On 12 February 2024, the EU Council adopted Decision № 2024/577[3] and a corresponding regulation,[4] according to which central securities depositories holding assets and/or reserves of the Central Bank of Russia exceeding €1 million are required, from 15 February 2024, to account separately for funds from redeemed securities as well as income generated from their use (Article 1(8)). Furthermore, these central securities depositories are prohibited from disposing of the income derived from the use of the aforementioned funds. Thus, the European Commission has initiated practical measures to lay the legal groundwork for seizing income derived from Russian sovereign property.[5] On 21 May 2024, the Council adopted Decision No. 2024/1470[6] and Regulation № 2024/1469,[7] which created a legal mechanism for utilising the income generated by Russian sovereign assets.

[1] Council Decision (CFSP) 2022/395 of 9 March 2022 amending Decision 2014/512/CFSP concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L 81, 09.03.2022, p. 8—11.

[2] Council Regulation (EU) 2022/394 of 9 March 2022 amending Regulation (EU) № 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L 81, 09.03.2022, p. 1—7.

[3] Council Decision (CFSP) 2024/577 of 12 February 2024 amending Decision 2014/512/CFSP concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L, 2024/577, 14.02.2024.

[4] Council Regulation (EU) 2024/576 of 12 February 2024 amending Regulation (EU) № 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L, 2024/576, 14.02.2024.

[5] Sexton, J. P., Kerr, V. 2024, EU Support to Ukraine through Windfall Profits: Reparative Value, International Law, and Future Pathways. Sep 23, 2024, *Lieber Institute*, URL: https://lieber.westpoint.edu/eu-support-ukraine-windfall-profits-reparative-value-international-law-future-pathways/ (accessed 05.01.2025).

[6] Council Decision (CFSP) 2024/1470 of 21 May 2024 amending Decision 2014/512/CFSP concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L, 2024/1470, 22.05.2024.

[7] Council Regulation (EU) 2024/1469 of 21 May 2024 amending Regulation (EU) № 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L, 2024/1469, 22.05.2024.

Under the aforementioned Union acts, the Council obliged central securities depositories in EU member states to transfer to the Union 99.7 % of the net (windfall) profit obtained from the use of Russian sovereign assets in the form of cash balances after deduction of corporate tax and retention of a small portion to ensure compliance with capital and risk management requirements. This profit will subsequently be used to fund military and other assistance to Ukraine (Article 1(2)(9)).

Therefore, under the approved mechanism, windfall profits from Russian assets are treated as the income of the depository, which, after payment of corporate tax, is in effect subject to a windfall tax of 99.7 %, although the Union's legal acts do not use the term 'tax'. To put it differently, windfall profits from the frozen Russian sovereign assets are first liable to national taxation in Belgium at a rate of 25 %,[1] with the remaining amount subsequently subject to a Union-level levy in the form of a mandatory financial contribution of 97.7 %.

According to the regulation, the amount received as a mandatory financial contribution is transferred to the benefit of the EU and allocated to the European Peace Facility (90 %) and programmes of assistance to Ukraine (10 %). This distribution may be amended through the adoption of a Council's implementing act.

The approved mechanism for utilising Russian assets does not envisage their transfer into the ownership of EU member states. The assets, as well as any accrued coupons and dividends, remain the property of the Russian Federation. Based on the Council's decision and regulation, the focus is solely on windfall income profits from the assets, which include interest earned on cash balances from redeemed securities. The EU considers windfall income to be the profit of the central securities depositories and, therefore, not part of Russia's sovereign property.

The approved mechanism is thus based on the plan put forward by the European Commission on 30 November 2022.[2] The Commission concluded that there were no lawful means of confiscating Russian sovereign assets and that, in its view, Member States would ultimately be required to return all funds belonging to the Russian Federation that are in their possession. In this regard, the Commission proposed investing the frozen assets of the Central Bank of Russia to generate additional income, which would then be transferred into the ownership of the Union and utilised to finance Ukraine.

The central securities depositories (CSDs) located within the Union are the primary entities subject to the obligations set out in the EU legal acts. Securities and funds belonging to Russia are held in the accounts of these depositories. At present, there are two main depositories operating in EU member states: Euro-

[1] Innovative Avenues to finance reparation in the UK, URL: https://redress.org/wp-content/uploads/2024/01/Innovative-Approaches-Report-v.4.pdf (accessed 25.12.2024).

[2] Ukraine: Commission presents options to make sure that Russia pays for its crimes, *European Commission*, URL: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7311 (accessed 10.12.2024).

clear, headquartered in Brussels, and Clearstream, based in Luxembourg. The majority of Russian-owned securities and funds are held in accounts at Euroclear, amounting to approximately €191 billion.[1]

Funds from redeemed securities are credited to the accounts of the depository, and under normal circumstances, the owner is entitled to dispose of them at their discretion. However, due to the freezing of Russian assets, the funds from redeemed securities remain under the depository's management. Central securities depositories do not hold these funds in cash, in line with corporate investment strategies, but invest them in other low-risk assets, most commonly Eurobonds. Such investments generate additional income, regarded as windfall profits, which is subject to appropriation by the Union under the EU Council's adopted legal acts.

According to Euroclear, approximately €159 billion in funds from redeemed securities belonging to Russia are held under its management.[2] Based on published data, Euroclear earned approximately €4.4 billion in windfall income from the use of Russian sovereign assets between February 2022 and 15 February 2024. Overall, expert evaluations estimate that central securities depositories in the EU earned approximately €5 billion from the frozen assets of the Central Bank of Russia between March 2022 and 15 February 2024.[3]

Funds received before 15 February 2024 remain at the disposal of the central securities depositories as collateral to cover potential costs and losses arising from possible claims by Russia (para. 21 of the Preamble to Regulation № 2024/1469). The lack of retroactive effect of the regulation concerning the use of Russian assets is intended to minimise the legal consequences of retroactive actions.[4] Thus, the developers of this mechanism foresee the possibility of adverse consequences arising from the use of sovereign assets and provide the central securities depositories with certain guarantees against potential retaliatory measures by Russia.

As discussed earlier, the EU's decision to utilise profits from Russian sovereign assets was made within the framework of agreements reached by the G7.

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[1] Franchini, D. 2024, Immobilised Assets, Extraordinary Profits: The EU Council Decision on Russia's Central Bank Reserves and Its Legal Challenges, *EJIL: Talk!*, URL: https://www.ejiltalk.org/immobilised-assets-extraordinary-profits-the-eu-council-decision-on-russias-central-bank-reserves-and-its-legal-challenges/ (accessed 25.12.2024).

[2] G7 Agreement to Use Windfall Profits Is Ratings Neutral for Euroclear, *Fitch Ratings*, URL: https://www.fitchratings.com/research/banks/g7-agreement-to-use-windfall-profits-is-ratings-neutral-for-euroclear-19-06-2024 (accessed 05.01.2025).

[3] Franchini, D. 2024, Immobilised Assets, Extraordinary Profits: The EU Council Decision on Russia's Central Bank Reserves and Its Legal Challenges, *EJIL: Talk!*, URL: https://www.ejiltalk.org/immobilised-assets-extraordinary-profits-the-eu-council-decision-on-russias-central-bank-reserves-and-its-legal-challenges/ (accessed 25.12.2024).

[4] Sexton, J. P., Kerr, V. 2024, EU Support to Ukraine through Windfall Profits: Reparative Value, International Law, and Future Pathways, *Lieber Institute*, URL: https://lieber.westpoint.edu/eu-support-ukraine-windfall-profits-reparative-value-international-law-future-pathways/ (accessed 05.01.2025).

At the group's summit in June 2024, an agreement was reached to launch an Extraordinary Revenue Acceleration (ERA) loans initiative for Ukraine, amounting to US$ 50 billion. This programme is to be implemented collectively, namely, Ukraine will receive a syndicated loan to be serviced and repaid using windfall profits from frozen Russian sovereign assets held within the EU and other relevant jurisdictions.[1] It was planned that the EU and the US would each provide US$ 20 billion, with the remaining US$ 10 billion contributed by Canada, Japan and the United Kingdom [4].

On 25 October 2024, the leaders of the G7 reached a consensus on the mechanism for allocating a syndicated loan to Ukraine.[2] On 9 October 2024, members of the EU Council agreed to allocate a €35 billion loan to Ukraine as part of the G7 syndicated loan. On 24 October 2024, the Council and Parliament adopted a regulation establishing a credit cooperation mechanism for Ukraine.[3] This regulation established the requisite legal framework for the provision of the EU loan and its repayment through profits from frozen Russian sovereign assets. The regulation establishes a credit cooperation mechanism to provide Ukraine with non-recoverable financial assistance for repaying the EU loan as well as other loans granted on a bilateral basis. The total amount of loans repayable under this mechanism is €45 billion. As set out in the regulation, this mechanism is financed by profits derived from frozen Russian sovereign assets, alongside additional contributions from member states and third countries.

An implementing regulation of the Council[4] was adopted concurrently, amending Regulation № 833/2014 to require that all profits from frozen Russian assets be accumulated within the framework of the Ukraine Facility.

Thus, in line with the arrangements agreed by the G7, the EU devised a scheme for the use of frozen Russian sovereign assets under which the Union will extend a €35 billion macro-financial loan to Ukraine from its own funds. The repayment of this loan will be ensured through the resources of the Credit Facility, which will be funded primarily by windfall profits from the use of frozen Russian assets. To this end, the EU will disburse funds to Ukraine from the Credit Facility, which will be reimbursed to the EU as repayments of principal, interest and other loan servicing costs.

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[1] G7 Apulia Leaders' Communiqué, 14 June 2024, URL: https://www.whitehouse.gov/briefing-room/statements-releases/2024/06/14/g7-leaders-statement-8/ (accessed 08.01.2025).

[2] G7 Leaders' Statement on Extraordinary Revenue Acceleration (ERA) Loans, URL: https://www.g7italy.it/wp-content/uploads/G7-Leaders-Statement-on-Extraordinary-Revenue-Acceleration-ERA-Loans.pdf (accessed 08.01.2025).

[3] Regulation (EU) 2024/2773 of the European Parliament and of the Council of 24 October 2024 establishing the Ukraine Loan Cooperation Mechanism and providing exceptional macro-financial assistance to Ukraine. OJ L, 2024/2773, 28.10.2024.

[4] Council Implementing Regulation (EU) 2024/2761 of 24 October 2024 implementing Regulation (EU) № 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine. OJ L, 2024/2761, 28.10.2024.

When analysing the mechanism for utilising immobilised Russian assets, two questions are of principal importance in determining the legitimacy of such a measure: whether the EU has the authority to take such a decision, and who is the original owner of windfall profits derived from Russian sovereign assets.

## The EU's competence to utilise Russian sovereign assets

Despite its extensive integration, the EU remains an international organisation whose powers are derived from its member states. One of the Union's fundamental principles is that of conferral. According to Article 5 of the Treaty on the European Union (TEU), the EU may act only within the limits of the competences conferred upon it by the treaties concluded with its member states. Any competences not conferred upon the Union under the treaties remain with the member states. The boundaries of EU competences must be respected both by the Union's institutions and by the member states themselves [5, p. 289]. Specifically, by virtue of the principle of conferral, the EU is authorised to act and adopt binding acts solely in matters that have been explicitly delegated to it by the member states. The source of power in the EU lies with the member states [6, p. 579], and the Union may not assume new competences on its own initiative.

Recent EU practice shows that EU officials often overlook this principle and adopt decisions without due regard for the scope of competences conferred upon the EU by the member states.

All Union acts establishing the mechanism for the use of profits from Russian sovereign assets were adopted within the EU's competence to impose restrictive measures. The legal framework for such measures lies in Article 29 of the TEU and Article 215 of the Treaty on the Functioning of the European Union (TFEU).

According to Article 215 of the TFEU, restrictive measures may entail the partial or complete suspension or reduction of economic and financial relations with one or more third countries. The establishment of a mechanism for the appropriation of profits derived from Russian sovereign assets by the EU cannot be characterised as a suspension or curtailment of such relations. This mechanism represents a fundamentally new development in EU law, neither envisaged by the founding treaties nor stemming from the competences conferred upon the Union by its Member States. The unanimous adoption of Council Decisions № 2024/577 of 12 February 2024 and № 2024/1470 of 21 May 2024 does not constitute the legal conferral of the relevant competence to the Union. As outlined above, the boundaries of the Union's competences, as set out in the founding treaties, must be respected by both Union institutions and the member states. Therefore, any additional competence may be granted to the Union only through an amendment of the founding treaties.

Therefore, within the existing EU legal framework, the Union is not authorised to adopt acts establishing a mechanism for the appropriation of profits derived from the reinvestment of foreign sovereign assets. From a procedural perspective, based on the principles of the division of competences between the Union and

its member states, the adoption of such decisions falls within the exclusive competence of the member states. Furthermore, these Union decisions will produce legal effects exclusively for two EU countries: Belgium and Luxembourg, under whose jurisdiction the two main central securities depositories are located.

## Ownership rights over windfall profits from the use of Russian assets

Determining ownership rights over windfall profits from frozen Russian assets is of paramount importance. According to the position of the European Commission and the High Representative for Foreign Affairs and Security Policy, who were the architects of the draft legislation, profits from the use of Russian assets do not constitute sovereign property of the Russian Federation.

As previously mentioned, only the income generated from investing funds received from redeemed securities is subject to appropriation by the EU. The funds remain in the depositories until the owner exercises control over their use. Consequently, according to the authors of the draft legislation and members of the expert community, the interest currently generated from these funds belongs to the depositories rather than the Central Bank of Russia.[1] However, this viewpoint is contentious, as it raises numerous legal questions under both national and international law.

According to the general principles of private law in the continental legal system, income and fruits derived from the use of an asset belong to the owner of that asset (Article 136 of the Russian Civil Code, Article 955 of the German Civil Code,[2] Article 547 of the Napoleonic Code[3]). This principle holds irrespective of who utilises the asset.

As a general rule, depositories must manage entrusted property in the interests of their clients, for which they receive remuneration. Therefore, it can be concluded that the profits from the use of Russian sovereign assets also constitute the property of the Russian Federation, while the central depositories are entitled only to remuneration for asset management services.

From a legal perspective, there is no clear distinction between state ownership of assets and of the profits derived from those assets.[4] Sovereign property holds a special status and entails a legal regime that should also extend to the profits derived from it.

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[1] Wiśniewska, I. 2024, The EU's decision to use the profits generated by frozen Russian assets, *Centre for Eastern Studies (OSW)*, URL: https://www.osw.waw.pl/en/publikacje/analyses/2024-05-24/eus-decision-to-use-profits-generated-frozen-russian-assets (accessed 25.12.2024).

[2] Bürgerliches Gesetzbuch (BGB), *Bundesministerium der Justiz*, URL: https://www.gesetze-im-internet.de/bgb/BJNR001950896.html (accessed 25.12.2024).

[3] Code civil, URL: https://codes.droit.org/PDF/Code%20civil.pdf (accessed 25.12.2024).

[4] Keitner, C. 2024, Sovereign Immunity and Reparations in Ukraine, *Just Security*, URL: https://www.justsecurity.org/92531/sovereign-immunity-and-reparations-in-ukraine/ (accessed 15.12.2024).

Information on the terms governing the placement of securities owned by the Russian Federation in the central depositories is unavailable. Thus, it is difficult to ascertain whether the accumulated interest constitutes 'windfall profits' of the depositories or should be attributed to the income of the securities' owner.[1]

The ownership rights of central securities depositories over profits derived from frozen Russian assets may therefore be contested. Should this occur, the entire mechanism for utilising the assets of the Central Bank of Russia would collapse, causing adverse consequences both for the depositories and for the Union itself.

Sovereign assets are generally exempt from taxation and protected from any enforcement measures. Similar rules should apply to the profits derived from these assets.

Furthermore, even if the income is recognised as belonging to the depositories, questions arise regarding the legitimacy of imposing an additional financial contribution to the EU amounting to 99.7 % of the profits received, especially considering that income tax has already been paid on this income at the national level (25 % in Belgium). The legality of such a fiscal measure at the Union level depends on maintaining a fair balance between the general interests of society and the protection of ownership rights.[2] In this scenario, the ownership rights of the central depositories and their shareholders, including non-EU residents, are infringed.

Moreover, taxation or similar measures must not be discriminatory. If a tax on windfall profits is introduced, it should apply uniformly to all cases of income generated from investing funds from redeemed securities. In this instance, however, only profits from Russian sovereign assets are subject to the mandatory financial contribution. This situation also raises serious concerns regarding the observance of legality.

## International law aspects of the use of Russian sovereign assets

The EU's decision to appropriate profits derived from Russian sovereign assets held in central securities depositories poses a serious challenge to international law and the international obligations of EU countries.

[1] Franchini, D. 2024, Immobilised Assets, Extraordinary Profits: The EU Council Decision on Russia's Central Bank Reserves and Its Legal Challenges, *EJIL Talk!*, URL: https://www.ejiltalk.org/immobilised-assets-extraordinary-profits-the-eu-council-decision-on-russias-central-bank-reserves-and-its-legal-challenges/ (accessed 25.12.2024).
[2] Ibid.

Academics and legal experts have consistently maintained that, given their distinctive legal status, sanctions targeting central bank assets entail a significant risk of breaching fundamental principles of international law [7, p. 22]. The risk of violating international law increases substantially in the event of confiscating sovereign assets, with the doctrine of sovereign immunity constituting the main international legal barrier to such confiscation or other forms of use.

There are strong grounds to believe that the doctrine of sovereign immunity equally protects both the sovereign assets themselves and the profits derived from their use.

The modern international system is based on the equality of all states; accordingly, no single country or group of countries holds authoritative power over others [8, p. 49]. In other words, no state or coalition has the right to deem another state culpable to impose punitive measures against it.

It has been argued that confiscation of Russian sovereign property might be justified as a countermeasure.[1] International law permits the use of coercive measures by some states against others. However, such measures are unilateral and constitute a form of countermeasure as defined in the 2001 Articles on Responsibility of States for Internationally Wrongful Acts, drafted by the UN International Law Commission (Article 48).[2] Countermeasures are aimed at compelling the wrongdoing state to fulfil its obligations [9, p. 104]. In order to be lawful, countermeasures must satisfy a number of substantive and procedural requirements [10, p. 236]. A defining characteristic of such measures is their reversibility and temporary nature.[3] Although in EU political language and that of certain other states, the term 'sanctions' is commonly used in place of 'restrictive measures' [11, p. 23], such measures do not constitute sanctions in legal terms. The appropriation of profits derived from sovereign assets lacks the attribute of reversibility, as the approved mechanism does not provide for the return of funds to Russia.

[1] Akande, D., Corten, O., Hamamoto, S., Klein, P., Koh, H. H., Reichler, P., Fabri, H. R., Sands, P., Schrijver, N., Tams, C. J., Zelikow, P. 2024, On Proposed Countermeasures Against Russia to Compensate Injured States for Losses Caused by Russia's War of Aggression Against Ukraine, London: International Institute for Strategic Studies, URL: https://www.iiss.org/globalassets/media-library---content--migration/files/research-papers/2024/05-new/iiss_on-proposed-countermeasures-against-russia-to-compensate-injured-states-for-losses-caused-by-russias-war-of-aggression-aga.pdf (accessed 15.12.2024).

[2] Draft Articles on Responsibility of States for Internationally Wrongful Acts, *Report of the International Law Commission on the work of its 53rd session*, URL: https://www.un.org/ru/documents/decl_conv/conventions/pdf/responsibility.pdf (accessed 05.12.2024).

[3] Hathaway, O. A., Mills, M., Poston, T. 2023, The Emergence of Collective Countermeasures, *Lieber Institute*, URL: https://lieber.westpoint.edu/emergencecollective-countermeasures (accessed 15.01.2025).

Accordingly, from the perspective of international law, the seizure of sovereign property itself or profits derived from it cannot be classified as a countermeasure. Nevertheless, as noted above, the mechanism was adopted within the EU's competence to impose restrictive measures, i. e. countermeasures as understood within the framework of the Articles on State Responsibility.

International law, much like domestic legal systems, obliges the responsible party to make reparation to the injured party for harm inflicted. However, for a compensation mechanism to operate, there must be a legal ground — either the consent of the responsible party or a decision by a competent authority

In contemporary civil law, delictual liability requires the claimant to prove the wrongful conduct of the liable party, the occurrence of damage, a causal link between the wrongful act and the damage, and the amount of harm incurred. Similar conditions for establishing liability apply equally in international law.

Despite the prevailing narrative in the United States, the European Union, and several other countries regarding Russia's alleged liability for an aggressive war against Ukraine—as well as frequent references to terms such as 'Russian invasion' and 'Russian military aggression' [12, p. 100]—there is, at present, no internationally recognised legal ruling that formally establishes Russia's responsibility [13, p. 57]. Even the United Nations General Assembly Resolution № ES-11/5[1] of 14 November 2022, frequently cited by Western experts [14, p. 1], lacks this characteristic as it does not have binding legal force for states.

Consequently, there are no legal grounds to impose on Russia an obligation to compensate Ukraine for damages, and the likelihood of such grounds emerging in the future is extremely low. Neither collective decisions by the G7 countries and the EU, nor even United Nations General Assembly resolutions, constitute a sufficient legal basis confirming that Russia has committed unlawful acts entailing a duty to make reparations. The assertion that Russia committed an act of aggression is a subjective opinion held by certain countries or international organisations in which neither Russia nor the majority of the world's states participate. Such a qualification of Russia's actions carries legal force only within the domestic legal systems of the respective countries or international organisations. Repeated statements across various platforms about 'Russian aggression against Ukraine' contribute to shaping public opinion but do not provide the necessary legal qualification to justify coercive measures against Russian sovereign property.

[1] United Nations General Assembly Resolution ES-11/514 of November 2022. Furtherance of remedy and reparation for aggression against Ukraine, *United Nations*, URL: https://documents-dds-ny.un.org/doc/UNDOC/LTD/N22/679/17/PDF/N2267917.pdf?OpenElement (accessed 11.12.2024).

Primarily, there are no essential international legal grounds empowering the EU to impose coercive measures on the sovereign assets of the Russian Federation.

Advocates of seizing income from Russian assets, and even confiscating the assets themselves, attempt to justify such actions by Russia's purported obligation to pay reparations to Ukraine [15], assuming that this obligation is beyond dispute.[1] However, this position is based on a misunderstanding of the nature of reparations as a form of responsibility in international law. At the same time, Russia holds a clear position, denying guilt for initiating the armed conflict in Ukraine and refusing to compensate for damages.

Reparations constitute one form of material responsibility of subjects of international law for harm caused as a result of an internationally wrongful act committed against another subject of international law [16, p. 255; 17, p. 49].

In international relations, the basis for compensation, including reparations, typically derives from the consent of the relevant state, as expressed in a formal document, such as a peace treaty or an act of unconditional surrender. This implies that the state acknowledges having committed an internationally wrongful act and agrees to provide compensation for the resulting damage to a specified extent. In some cases, this basis may be a decision by an international judicial body whose jurisdiction is recognised by the state obliged to provide compensation.[2]

The emergence of a legal obligation to pay reparations or provide other forms of compensation does not arise solely from persistent demands by one or more states. The so-called international registers of damage for Ukraine[3] do not provide a legal basis for reparations, as their actions do not create any obligations for Russia.

Among existing reparation mechanisms, none can be applied to compel Russia against its will to compensate Ukraine [18, p. 993]. Moreover, reparations in the strict legal sense (i. e., voluntarily provided by Russia to Ukraine) will be impossible if the conflict does not end in Ukraine's favour.[4]

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[1] Anderson, S. R. 2024, Understanding the G7's New Plan for Funding Ukraine, *LAWFARE*, URL: https://www.lawfaremedia.org/article/understanding-the-g7-s-new-plan-for-funding-ukraine (accessed 23.01.2025).

[2] Franchini, D. 2024, Immobilised Assets, Extraordinary Profits: The EU Council Decision on Russia's Central Bank Reserves and Its Legal Challenges, *EJIL Talk!*, URL: https://www.ejiltalk.org/immobilised-assets-extraordinary-profits-the-eu-council-decision-on-russias-central-bank-reserves-and-its-legal-challenges/ (accessed 25.12.2024).

[3] Register of Damage for Ukraine, *RD4U*, URL: https://rd4u.coe.int/en/ (accessed 25.12.2024).

[4] Sexton, J. P., Kerr, V. 2024, EU Support to Ukraine through Windfall Profits: Reparative Value, International Law, and Future Pathways, *Lieber Institute*, URL: https://lieber.westpoint.edu/eu-support-ukraine-windfall-profits-reparative-value-international-law-future-pathways/ (accessed 05.01.2025).

The seizure of income from Russian property or the assets themselves is sometimes proposed as a measure of collective self-defence (Art. 51 of the UN Charter). However, serious doubts exist as to whether self-defence can be exercised by non-military means [19], such as confiscation. Moreover, measures taken in self-defence must be temporary, necessary and proportionate.[1]

## Political and legal consequences of utilising Russian sovereign assets

The legal issues outlined above, arising from the implementation of the mechanism for seizing profits derived from Russian sovereign property, are not exhaustive.

The mechanism adopted by the EU for utilising income from Russian sovereign assets raises numerous additional questions and may also engender adverse consequences for the Union and the global financial system as a whole. Even during the early discussions of this mechanism, the European Central Bank expressed concerns about the reputation of the euro and the security of European government bonds as a store of value for other central banks.[2]

The Euroclear management has also expressed concern regarding the potential consequences of seizing income from Russian property. In particular, direct trade and investment channels between Asia and the Middle East are expanding, potentially facilitating the emergence of a non-European competitor to Euroclear.[3] Such developments could undermine trust in the governments and financial systems of states that choose to confiscate either the assets themselves or profits derived from their use [13, p. 58].

The implementation of a mechanism to seize all or part of Russia's sovereign property could create a dangerous precedent, whereby one or several countries unilaterally impose financial sanctions on other states by targeting sovereign assets. This could pave the way for numerous claims for compensation from various states for damages resulting from armed conflicts. Particularly, potential new claims against the Federal Republic of Germany concerning additional reparations from World War II are frequently mentioned.[4] Germany, however, is not the only country that could potentially face such claims. Since the end of World

[1] Ibid.

[2] Legal options for confiscation of Russian state assets to support the reconstruction of Ukraine, *European Parliament*, URL: https://www.europarl.europa.eu/RegData/etudes/STUD/2024/759602/EPRS_STU(2024)759602_EN.pdf. P. 41 (accessed 05.01.2025).

[3] Valero, J. 2024, Euroclear Warns of Liability Risk in Confiscating Russian Assets, *BNN Bloomberg*, URL: https://www.bnnbloomberg.ca/investing/2024/12/10/euroclear-warns-of-liability-risk-in-confiscating-russian-assets/ (accessed 15.01.2025).

[4] Wiśniewska, I. 2024. The EU's decision to use the profits generated by frozen Russian assets, *Centre for Eastern Studies (OSW)*, URL: https://www.osw.waw.pl/en/publikacje/analyses/2024-05-24/eus-decision-to-use-profits-generated-frozen-russian-assets (accessed 25.12.2024).

War II, dozens of international conflicts involving states have occurred annually [20, p. 25], often with significantly higher casualties among military personnel and civilians. Furthermore, some of the countries involved in these conflicts participate in the development and implementation of the mechanism for seizing Russian property.

Looking ahead, states impacted by armed conflicts may seek to apply material liability mechanisms—financed through foreign-held assets—against those currently advocating such measures against Russia. As a result, the mechanism may produce a boomerang effect, raising concerns about its long-term legal and geopolitical implications.

From the perspective of establishing peace, the decision to seize profits derived from the use of Russian assets is unlikely to advance the resolution of the conflict. On the contrary, it may lead to its prolongation, as such a seizure reduces Russia's incentive to negotiate with the EU and countries of the West.[1] This appears to represent yet another attempt to exert pressure on Russia with the aim of compelling it to make concessions, without the offer of reciprocal measures. However, this tactic has repeatedly proven ineffective.

As mentioned above, the EU's decision to seize profits from Russian sovereign assets is merely one element of a broader scheme to provide a syndicated loan under the G7 arrangements. In effect, the EU and other G7 countries are granting Ukraine a loan to be repaid using the profits derived from Russian assets. Effectively, the G7 insists that the loan to Ukraine should be repaid at Russia's expense, regardless of Russia's refusal.

The implementation of this scheme engenders numerous practical challenges. In particular, there arises the issue of synchronising loan repayments with the accumulation of profits from the utilisation of Russian sovereign assets,[2] since windfall profits will only arise while restrictive measures blocking the assets of the Central Bank of the Russian Federation remain in force.

These restrictive measures are temporary and are extended every six months by unanimous decision of all EU member states. Should even one country refuse to prolong the measures, they will automatically lapse. This scenario may seem improbable at present, given the strong 'Union discipline' and mechanisms of pressure on dissenting members, yet it cannot be ruled out in the future. Moreover, calls from Hungary and Slovakia to abandon sanction policies are already becoming insistent. Furthermore, there have been cases where individual EU

[1] Proud, I. 2024, Russian asset seizure scheme will prolong war. Western officials want to 'speed up' the use of interest on Moscow's frozen funds to loan Ukraine more money, *Responsible Statecraft*, URL: https://responsiblestatecraft.org/russian-asset-seizure/ (accessed 10.01.2025).

[2] Steinbach, A. 2024, How to harvest the windfall profits from Russian assets in Europe, *Bruegel*, URL: https://www.bruegel.org/system/files/2024-06/how-to-harvest-the-windfall-profits-from-russian-assets-in-europe-10101_0.pdf (accessed 20.12.2024).

member states have blocked the adoption of restrictive measures as a means of exerting pressure on other Union members over issues beyond the remit of this study [21, p. 142].

If these restrictions are lifted or fail to be renewed, Russia will immediately withdraw its assets from the affected jurisdictions. In that event, the entire syndicated loan servicing scheme will collapse. Undoubtedly, EU leadership will make every effort to maintain the immoblisation of Russian assets, but this strategy carries numerous risks.

The question of how Russia might respond to violations of property rights is of considerable importance when analysing the potential consequences of the seizure of profits from Russian sovereign assets. Russian authorities have repeatedly stated that Russia will respond to the confiscation of its property abroad.[1]

On 23 September 2024, President of Russia adopted Decree № 442,[2] which establishes a procedure for compensating damage caused to the state and the Central Bank of Russia in response to unfriendly actions by the US. The decree provides for the possibility of judicial compensation for damage resulting from the unlawful expropriation of property by the US, through the seizure of assets owned by the US or by US persons. The decree was adopted in response to the approval by the US Congress of Bill 8038, the 21st Century Peace Through Strength Act,[3] which provides for the potential confiscation of Russian sovereign assets.[4]

At present, a draft law is being developed to regulate compensation for damage caused to Russia or the Central Bank of Russia by other countries that have frozen Russian assets.[5] In response to the freezing of Russian assets, Russia has adopted reciprocal measures targeting the assets of residents of unfriendly states. These, however, go beyond sovereign assets [22, p. 17]. According to certain

[1] Siluanov: v Rossii zamorozheno ne men'she zapadnykh aktivov, chem tam — rossiyskikh [Siluanov: In Russia, no fewer Western assets are frozen than Russian ones abroad], *Delovoy Peterburg*, URL: https://www.dp.ru/a/2024/02/26/siluanov-v-rossii-zamorozheno2 (accessed 20.01.2025).

[2] On the special procedure for compensation of damage caused to the Russian Federation and the Central Bank of the Russian Federation in connection with the unfriendly actions of the United States of America, Decree of the President of Russia of 23.05.2024 № 442, *Collected Legislation of the Russian Federation*, 27.05.2024, № 22, Article 2937.

[3] H.R.8038 — 21st Century Peace through Strength Act, *CONGRESS.GOV*, URL: https://www.congress.gov/bill/118th-congress/house-bill/8038/text?s=3&r=25&q=%7B%22search%22%3A%22H.R.+8038%22%7D (accessed 20.01.2025).

[4] Timofeev, I. N. 2024, On the new mechanism for confiscation of Russian sovereign assets: consensus of the US Administration and Congress, *Russian International Affairs Council*, URL: https://russiancouncil.ru/analytics-and-comments/analytics/o-novom-mekhanizme-konfiskatsii-rossiyskikh-suverennykh-aktivov-konsensus-administratsii-i-kongressa/?sphrase_id=171849386 (accessed 12.01.2025).

[5] Gravhev, E., Pertseva, E., 2025, Sanctions phenomenon: Russia will enshrine in law the seizure of foreign assets, *Izvestiya*, URL: https://iz.ru/1825384/evgenii-grachev-evgeniia-pertceva/sankcionnoe-yavlenie-v-rossii-zakrepyat-v-zakone-izyatie-inostrannyh-aktivov (accessed 05.01.2025).

estimates, foreign assets in Russia total $194 billion, with $90 billion owned by European companies — nearly three times the amount held by firms headquartered in the US ($32 billion). Thus, if Russia retaliates for the seizure of profits from its property, it will ultimately be European businesses that bear the cost of financing Ukraine.[1]

## Conclusion

The utilisation of Russian sovereign property has been under discussion for three years. To date, among the possible methods for utilising Russian assets, EU institutions have selected the most cautious approach, involving the transfer to the Union of ownership of windfall profits derived by central depositories from investing funds associated with redeemed securities owned by Russia. Thus, the assets themselves, in the form of securities and cash, as well as coupon income and dividends, are not subject to seizure and remain immobilised.

This decision was made within the framework of agreements reached by the G7. According to these arrangements, the EU, the US, the UK, Canada and Japan provide Ukraine with a syndicated loan, which will be serviced using profits derived from Russian sovereign assets.

During 2024, EU institutions developed the necessary legal framework to seize windfall profits derived from Russian sovereign property and direct the resulting funds to finance the military campaign in Ukraine.

The mechanism adopted by the EU for the seizure of profits from Russian sovereign assets is part of a broader scheme to finance Ukraine via a syndicated loan. During its development and implementation, experts have repeatedly expressed doubts regarding the legality and advisability of this measure. Analysis of the mechanism reveals numerous inconsistencies with national and international law, as well as with EU legal norms.

Firstly, the new mechanism for utilising Russian assets was developed and implemented within the framework of the restrictive measures policy, yet upon review, it cannot be classified as a restrictive measure. Moreover, the founding treaties do not explicitly confer upon EU institutions the competence to make such decisions. Thus, there are grounds to consider that these institutions have exceeded their powers or at least chosen an inappropriate method to achieve the stated objectives.

Secondly, the claim that windfall profits generated from the use of Russian sovereign assets belong to central depositories rather than to Russia itself appears legally contentious. Under prevailing principles of continental civil law, the fruits derived from the utilisation of property are considered to belong to

[1] Steinbach, A. 2024, How to harvest the windfall profits from Russian assets in Europe, *Bruegel*, URL: https://www.bruegel.org/system/files/2024-06/how-to-harvest-the-windfall-profits-from-russian-assets-in-europe-10101_0.pdf (accessed 20.12.2024).

its rightful owner. In any case, a precise determination requires knowledge of the terms governing the placement of Russian assets in central depositories' accounts.

Thirdly, the seizure of profits from Russian assets contravenes international law by violating the principle of sovereign immunity, since legally there is no basis to distinguish between ownership of sovereign assets and the income generated from their use. Attempts to justify the confiscation of both assets and their income as an obligation for Russia to pay reparations rest on a misunderstanding of this concept as defined in international law.

To conclude, from a legal standpoint, the EU's decision to appropriate income from Russian assets involves significant deficiencies, posing substantial direct and indirect risks that could seriously undermine the global financial system in the future.

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# GERMANY'S APPROACH TO SECURITY AND DEFENCE COOPERATION WITH POLAND BY THE MID-2020s



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*This article examines the evolution of German-Polish cooperation in the political and military spheres. Methodologically, it draws on comparative analysis and the theoretical framework of armed forces development. Against the backdrop of heightened confrontation between the Euro-Atlantic community and Russia, Poland's strategic orientation has echoed that of West Germany during the Cold War. Poland has asserted its role as the largest NATO member state on the alliance's eastern border. It has significantly expanded its armed forces, and has become a key host of the large US military contingent. Poland expects to join the group of 'Western powers'. Concurrently, Germany has also strengthened its role within NATO. This has resulted in a complex dynamic of both cooperation and strategic rivalry between Germany and Poland. Germany has conceptually and practically emphasized the Weimar Triangle as a platform for representing EU interests, particularly in the post-Soviet space. In the 2010s, however, Poland suspended the activities of the Weimar Triangle and bilateral intergovernmental consultations in an effort to limit German influence. By the mid-2020s, both formats had been reactivated, and Germany had consolidated its position in relation to the Republic of Poland (RP). This shift was driven by Germany's growing influence in Eastern Europe beyond Poland and shared concerns about the weakening of Western influence in Ukraine and the broader post-Soviet region. Poland rapidly expanded its armed forces, becoming NATO's third-largest military by personnel in 2024. Germany has been more inert in its response, yet it has employed the Bundeswehr more rationally — particularly in the region considered a 'domestic' one — by establishing a ground presence both to its north and south. The article concludes by assessing the future trajectory of German— Polish security cooperation and the implications for the defence strategies of Russia and Belarus.*

**Keywords:**
Germany, Poland, rising power, Weimar triangle, intergovernmental consultations, NATO, EU, armed forces, military expenditures, support of Ukraine

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## Introduction

Historically, German—Polish relations have been marked by prolonged periods of alienation, interrupted by relatively brief phases of cooperation. A central factor shaping collective memory and bilateral dialogue is the legacy of World War II. Key historical events include the aggression of the Third Reich against Poland in 1939 and the imposition of a brutal occupation regime, which resulted in the loss of approximately 6.028 million lives — over 21 % of the country's population [1, p. 213]. Following the Yalta and Potsdam agreements of 1945, Poland significantly expanded its western and northern borders at the expense of territories formerly belonging to defeated Germany. During the Cold War and the broader East—West confrontation, relations between the newly established Federal Republic of Germany (1949) and the Republic of Poland remained complex and often strained. A symbolic turning point was on December 7, 1970, when West German Chancellor Willy Brandt famously knelt before the monument to the victims of the Warsaw Ghetto — a gesture that became a milestone in German—Polish reconciliation.

Following the demise of the socialist bloc, official Warsaw demonstrated a strong interest in rapid rapprochement with the Euro-Atlantic community.[1] Germany assumed the role of one of Poland's key partners in facilitating this process. Two symbolic milestones in the reconfiguration of bilateral relations were the signing of the Treaty on Good Neighborship and Friendly Cooperation on June 17, 1991, which formalised a new *de jure* quality of relations, resolved the issue of recognition of Poland's western borders, and initiated a framework for intergovernmental consultations[2] — and the establishment of the Weimar Triangle (Germany, Poland, France) on August 28—29, 1991 [2, p. 123—124].With the support of its western neighbour, Poland joined NATO in 1999 and acceded to the European Union in 2004. By the mid-2010s, German—Polish dialogue in the field of security and defence appeared to be well-developed. However, longstanding unresolved issues gradually became more pronounced, particularly due to an unofficial rivalry over leadership within the bilateral partnership. Notably, the Weimar Triangle ceased to function at the highest political level for over a decade after 2011,[3] and the format of intergovernmental consultations was suspended for six years after 2018 [3, p. 63]. During this period, official Warsaw voiced criticism of Berlin both within the European Union — especially during the refugee crisis of 2015—2017 — and within NATO, particularly in the context of Donald Trump's first presidency [4, p. 20—21]. Poland also returned to con-

[1] In the article, the term "Euro-Atlantic community" refers to the collective of NATO and EU member states, as well as the institutions themselves.

[2] Vertrag zwischen der Bundesrepublik Deutschland und der Republik Polen über gute Nachbarschaft und freundschaftliche Zusammenarbeit vom 17. Juni 1991. 17.06.1991, *Auswärtiges Amt*, URL: https://www.auswaertiges-amt.de/blob/2466170/57020a2e3064c4f8b8785dbd3aced4d6/deutschpolnischer-nachbarschaftsvertrag-data.pdf (accessed 07.02.2025).

[3] Pressestatements von Bundeskanzler Scholz, dem französischen Präsidenten Macron und dem polnischen Präsidenten Duda beim Treffen im Format des Weimarer Dreiecks am 8. Februar 2022 in Berlin. 08.02.2022, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/bregde/suche/pressestatements-von-bundeskanzler-scholz-dem-franzoesischen-praesidenten-macron-und-dem-polnischen-praesidenten-duda-beim-treffen-im-format-des-weimarer-dreiecks-am8-februar-2022-in-berlin-2003880 (accessed 07.02.2025).

tentious issues of historical memory, reviving demands for substantial reparations for the atrocities committed by the Third Reich [5, p. 49—50; 6]. Germany, while firmly opposing these demands, did so with careful diplomatic restraint [7].

By the mid-2020s, interstate relations began to show signs of renewed improvement. A key factor contributing to this shift was the launch of Russia's Special Military Operation (SMO) on February 24, 2022.[1] However, despite the optimism declared by the countries, it is hardly possible to argue about the disappearance of most problems in the dialogue.

The article aims to examine the current characteristics of Germany's approach to cooperation with Poland in the field of security and defence. This involves addressing the following objectives: to analyse how modern Poland draws on the experience of West Germany during the Cold War in the context of the ongoing confrontation between the West and the Russian Federation; to explore Germany's conceptual framework regarding its policy towards Poland; to identify the specific features of political and diplomatic engagement, with particular attention to the functioning of negotiation formats; and to assess the potential and limitations of bilateral military cooperation, taking into account the structural and developmental specificities of both countries' armed forces. The analysis is conducted primarily on the basis of German official documents, given Germany's larger resource base and its highly consistent foreign policy.

The article employs comparative analysis (e. g., in examining the reasons for the interruption of bilateral negotiation mechanisms) and content analysis (focusing on the frequency and context of references to Poland in Germany's strategic and doctrinal documents). Methodologically, the study draws on the principles of the theory of armed forces development, which treats changes in organisational and personnel structures as indicators of shifting foreign policy priorities [8]. Particular attention is given to the evolution of the Bundeswehr's forward presence in Eastern Europe and the significant expansion of the Polish Armed Forces.

Scholars have traditionally devoted considerable attention to Germany's foreign policy, particularly its Polish dimension, focusing on bilateral cooperation within the frameworks of the EU and NATO [4; 5; 9—11], as well as on the functioning of diplomatic formats [7; 12]. However, much of the existing literature tends to concentrate on specific episodes or issues that, while important, are insufficient on their own to construct a comprehensive picture of interstate dialogue over an extended period. The military aspects of German-Polish cooperation remain underexplored and are generally addressed only in the context of Germany's contribution to NATO's Enhanced Forward Presence (EFP) [13].

In the study of Poland's foreign policy, particular emphasis has been placed on the transformations following the electoral victories of the right-wing conservative Law and Justice Party (PiS) in the 2015 and 2019 parliamentary elections, as well as the election and re-election of its candidate, Andrzej Duda, as President of the Republic of Poland (2015; 2020) [14—17]. By contrast, the implications of the recent return to power of a coalition government led by Donald Tusk, with the liberal Civic Platform in a leading role — while PiS retains significant parliamentary representation and the presidency — have received comparatively limited scholarly attention [18]. Nonetheless, there is broad consensus among experts that the fundamental orientation of Poland's foreign and defence policy remains unchanged. Of particular analytical value are studies focused on Poland's activities and strategic positioning near the borders of the Kaliningrad region of

[1] Ibid.

the Russian Federation [19; 20], Belarus [21; 22], and Ukraine [23], as well as its contributions to regional integration in Eastern Europe [24] and participation in efforts to 'contain' the People's Republic of China [25].

## West Germany's strategy as a guide for modern Poland

Since its creation (1949), the Federal Republic of Germany (FRG) has consistently emphasised its organic and *de jure* permanent integration into the Euro-Atlantic community, inextricably linking its success with the strengthening and spread of the community's influence. This approach has become characteristic of the Republic of Poland since the 1990s, although the degree of its readiness to incorporate the values of liberal democracy was lower than that of the FRG [10, p. 10—17].

The community of 'Western democracies' with the leading role of the USA (and the UK) was formed during the Second World War. Of course, each expansion of NATO and the EU noticeably changed the composition of the Euro-Atlantic community, but did not break the foundations of the formed structure. It may thus be considered a fact that, by the time of their respective accessions to NATO — West Germany (FRG) in 1955 and Poland (RP) in 1999 — and especially during the periods in which each country began to pursue leadership ambitions, the foundations of their roles within the Euro-Atlantic community were already in place. In the case of the Federal Republic of Germany, the relatively late articulation of such aspirations can be attributed to its historical responsibility for the atrocities committed by the Third Reich. Consequently, within the Euro-Atlantic framework, both Germany and Poland represent uncommon examples of so-called 'rising powers'.

During the Cold War, the FRG gradually enhanced its political influence: from its founding in 1949 as a state under the tutelage of the 'Western powers' (the United States, the United Kingdom, and France), to its eventual *de facto* inclusion in their leadership circle, transforming the original triumvirate into a tetrarchy. This status was cemented following the resolution of the 'German question' in 1990 — primarily in favour of the FRG and the United States — which symbolised the emergence of a post-bipolar world order. In this new geopolitical context, Germany began to assert itself as a regional power. Notable markers of this transition include the decision to relocate the capital from Bonn to Berlin — evocative of imperial legacy — implemented mainly in 1998—1999, and Germany's participation in NATO's air campaign against Yugoslavia in 1999. These developments marked the beginning of Germany's ongoing, though still incomplete, evolution toward becoming a state capable of exercising comprehensive political and military agency on the global stage.

The West—East confrontation provided the framework conditions for the successes achieved between 1949 and 1990. Official Bonn skillfully leveraged its strategic value to NATO allies, which was manifested in two main ways.

Firstly, West Germany was the largest member state in the forward part of the Alliance's area of responsibility, and was located right in its centre. Moreover, West Germany repeatedly, especially under Konrad Adenauer (1949—1963) and the 'early' Helmut Kohl (in the mid-1980s), took one of the toughest positions among Western countries concerning the USSR, and simultaneously carried out remilitarization [26, p. 193—211].

Secondly, during the 1970s and 1980s, Bonn deployed a substantial number of conventional forces — approximately 500,000 military personnel — repre-

senting over 20 % of the total strength of the United States Armed Forces at the time.[1] These forces, particularly the powerful ground troops, were well-equipped and maintained a high level of combat readiness. From the 1960s onward, the West German Bundeswehr became the largest contributor to NATO forces in the forward area of the Alliance's zone of responsibility and was fully integrated into NATO's military structure [26, p. 212—228; 27].

Concurrently, Germany hosted a significant allied military presence, which, before 1955, had the status of an occupying force. In the 1970s and 1980s, this presence numbered approximately 500,000 troops — comparable in size to the Bundeswehr — of whom roughly half belonged to the United States [27, p. 2]. Since the 1960s, official Bonn had also expressed interest in gaining indirect access to U.S. nuclear weapons stationed on West German territory [26].

In the contemporary confrontation between the Euro-Atlantic community and the Russian Federation, Poland's strategic behaviour closely mirrors that of the FRG during the Cold War. However, key differences remain: while West Germany at the time exercised only limited sovereignty, Poland enjoys full sovereign status. Nevertheless, both cases reflect a shared objective — the aspiration of national leadership in Warsaw to follow the FRG's example and secure a place among the ranks of the 'Western powers' [23].

Firstly, as a result of NATO's eastward expansion in its new forward zone of responsibility, Poland became the largest member state of the bloc. The approach of official Warsaw to 'deter' Russia (and Belarus) became one of the toughest.

Secondly, the Polish Armed Forces have followed a trajectory of accelerated militarisation since 2014, with the process gaining markedly greater speed and scale from 2021—2022 onwards. By 2023, the total strength of the Polish military exceeded 200,000 personnel, with plans underway to increase this number to 300,000.[2] When comparing these figures with those of the West German Bundeswehr, it is essential to consider the substantial difference in the size of national armed forces among NATO member states during the Cold War and the period from 2014 to 2023 — the latter being, on average, 1.8 times smaller [28].

In the current structure of the Polish Armed Forces, particular emphasis is placed on the ground forces. These have not only expanded rapidly but have also undergone extensive technical and technological modernisation, primarily through the procurement of advanced weaponry from the United States and South Korea [21, p. 39—98]. The Polish Armed Forces represent the largest value for NATO's potential in Eastern Europe. The region as a whole — and Poland in particular — has become a recipient of NATO partner deployments. By the mid-2020s, up to two U. S. Army brigade combat teams were stationed in Poland on a rotational basis (compared to only one in Germany), although the largest U.S. military presence in Europe continued to be in Germany [29, p. 70—77]. Following the example of West Germany, Poland has sought to establish particularly close and trust-based relations with the United States, securing support under both the Trump and Biden administrations [4; 14; 23].

[1] Based on: Financial and economic data relating to NATO Defence. M-DPC-2 (91) 105. 1991, *NATO*, Brussels, p. 8.

[2] Polish officer: it will take us a decade to reach 300 thousand military personnel. 15.08.2024, *Military review*, URL: https://en.topwar.ru/248250-polskij-oficer-dlja-dostizhenija-chislennosti-300-tysjach-voennosluzhaschih-nam-ponadobitsja-desjat-let.html (accessed 07.02.2025).

However, two fundamental questions arise. First, to what extent can Poland's current strategic approach — modelled on West Germany's Cold War experience — be effective in principle? The resolution of the 'German question' in 1990, consistent with the vision of official Bonn, was made possible primarily through the 'preemptive concessions' of the Soviet leadership under Mikhail Gorbachev. A repetition of such concessions by Russia, particularly if they run counter to its national interests, appears fundamentally unlikely. Second, to what extent is contemporary Germany prepared to support — or at least tolerate — the policies of another state (in this case, Poland) that aspires to challenge the Federal Republic's leadership in Europe and within NATO, drawing on strategies once employed by Germany itself? This question becomes even more pertinent given that Berlin has once again adopted deterrence-oriented policies toward the Russian Federation. The German government has declared its intention to build the largest conventional armed forces among European NATO members and has increased its focus on enhancing its military presence in Eastern Europe [30, p. 4—8].

## The basics of Germany's approach to interaction with Poland. Conceptual overview

Germany's system of strategic planning documents in the field of security and defence is structured into several hierarchical levels. At the second level — the Defence Policy Guidelines (most recently updated in 2023[1]) — and the third level — the Concept of the Bundeswehr (latest version from 2018[2]) — the focus is primarily on the priorities of the Federal Ministry of Defence and the assessment of available means for achieving these objectives. These documents, however, make virtually no mention of Germany's specific partners, including Poland.

In contrast, the most significant interstate relationships are addressed differently in first-level doctrinal documents. For example, the White Paper on Security Policy and the Future of the Bundeswehr (2016) refers to Poland on four occasions, including in the context of developing a Common Foreign and Security Policy (CFSP) of the European Union, particularly through the Weimar Triangle format.[3] Poland is also mentioned in light of the joint staffing of NATO structures and formations.[4] In this context, Poland is positioned alongside France (with which Germany operates a bilateral brigade) and the Netherlands (with which the Federal Republic of Germany maintains a bilateral corps, including its powerful 1st Armoured Division, which incorporates a Dutch mechanized brigade).[5]

Germany had initially sought to deepen cooperation with Poland through the NATO Multinational Corps Northeast Headquarters (established in 1999 with the participation of Denmark). However, by the mid-2010s, the German combat units assigned to this structure had been either disbanded or redeployed, which significantly limited the depth of trilateral operational integration. The hopes placed by official Berlin on this format thus proved illusory. This, along with Germany's

[1] Verteidigungspolitische Richtlinien 2023. 2023, Berlin, *BMVg*, 36 S.

[2] Die Konzeption der Bundeswehr. Ausgewählte Grundlinien der Gesamtkonzeption. 2018, Berlin, *BMVg*, 40 S.

[3] Weissbuch zur Sicherheitspolitik und zur Zukunft der Bundeswehr. 2016, Berlin, *Bundesregierung*, S. 74.

[4] Ibid. S. 77, 80.

[5] 1. Panzerdivision. 2025, *BMVg*, URL: https://www.bundeswehr.de/de/organisation/heer/organisation/1-panzerdivision (accessed 07.02.2025).

broader dissatisfaction with the nature of its bilateral interaction with the Republic of Poland, was reflected in the complete omission of Poland from the National Security Strategy of June 14, 2023 — a document that holds a precedent-setting status in German strategic planning. Notably, the strategy does highlight the increasing presence of the Bundeswehr in NATO's forward area of responsibility, signalling a shift in emphasis toward independent national contributions within the Alliance's eastern flank.[1] The process took place almost without reliance on any dialogue with the RP.

Official Berlin developed strategic planning documents for specific regions of the world (for example, the Arctic, 2013, 2019, 2024; the Indo-Pacific region, 2020), individual major states (primarily China in 2023). However, by 2025, such concepts had not been published either for Eastern Europe or specifically for Poland. First of all, this is due to the fact that Germany has traditionally avoided publishing separate doctrinal documents on relations with partners in the Euro-Atlantic community. In its interactions with partners, Germany primarily adhered to jointly adopted decisions within the framework of NATO (based on the outcomes of high-level summits and strategic concepts) and the European Union, reflecting its alignment with the community of Western democracies and its commitment to liberal values. Against the backdrop of the conclusion of Donald Trump's first presidential term — with its characteristic emphasis on unilateralism and pressure on Germany and the EU — official Berlin published the White Paper on Multilateralism in May 2021 [4; 5; 11]. Poland was not mentioned in the White Paper (2021),[2] unlike many of Germany's other partners. This is due to the active support of the PiS government for US pressure on Germany in the late 2010s.

The evolution of Germany's approach to cooperation with Poland is evident in the coalition agreements concluded by governing parties following each Bundestag election. In all such documents from 2013, 2018, and 2021, provisions concerning relations with Poland — presented within the broader framework of bilateral partnerships within the EU — were consistently placed in second position, immediately after references to dialogue with France[3]. Germany has repeatedly emphasised its recognition of historical responsibility for the atrocities committed by the Third Reich, for instance, by supporting the initiative to establish a World War II documentation centre under the auspices of the Bundestag.

However, this recognition did not imply any willingness to make concessions to the Republic of Poland on key strategic or political issues. In the coalition agreements of 2013, 2018, and 2021, Germany expressed a clear interest in cooperation primarily within the framework of the European Union (and, to a much lesser extent, through the OSCE), while references to NATO were almost entirely

[1] Wehrhaft. Resilient. Nachhaltig. Integrierte Sicherheit für Deutschland Nationale Sicherheitsstrategie. 2023, Berlin, *Bundesregierung*, S. 6.

[2] Gemeinsam für die Menschen. Weißbuch Multilateralismus der Bundesregierung. Berlin: *Bundesregierung*, 2021. 151 S.

[3] Deutschlands Zukunft gestalten Koalitionsvertrag zwischen CDU, CSU und SPD. 18. Legislaturperiode. 2013, Berlin, *Bundestag*, S. 165, 167, 170 ; Ein neuer Aufbruch für Europa. Eine neue Dynamik für Deutschland. Ein neuer Zusammenhalt für unser Land. Koalitionsvertrag zwischen CDU, CSU und SPD. 19. Legislaturperiode. 2018, Berlin, *Bundestag*, S. 9, 146 ; Mehr Fortschritt wagen. Bündnis für Freiheit, Gerechtigkeit und Nachhaltigkeit. Koalitionsvertrag 2021—2025 zwischen der Sozialdemokratischen Partei Deutschlands (SPD), BÜNDNIS 90 / DIE GRÜNEN und den Freien Demokraten (FDP). 2021, Berlin, *Bundestag*, S. 126, 136.

absent. This is notable, given that NATO has been a key arena for competition between the two states, where the imbalance in capabilities and influence has been less pronounced in Berlin's favour. In seeking to strengthen dialogue with Poland, Germany has placed particular emphasis on the Weimar Triangle format involving France and signalling an intention to revitalise this mechanism following a period of stagnation. Before 2014, Germany had also engaged in a similar trilateral framework that included the Russian Federation.[1] Substantively, Germany also paid increased attention to the development of public relations with Poland and cooperation in the field of youth policy. By contrast, coordination in the sphere of security and defence was mentioned only in a limited manner, and, in principle, there were no references to cooperation in this area with regard to the western part of the post-Soviet space.[2] This recorded the presence of noticeable problems in the dialogue, the desire of the FRG to ensure freedom of manoeuvre at the doctrinal level, where disputes with Poland were most acute.

Overall, the 2013 coalition agreement reflected Berlin's confidence in the possibility of maintaining a stable dialogue with Warsaw without significant disruptions. The 2018 agreement acknowledged the need to overcome a noticeable deterioration in relations, while asserting Germany's seniority in bilateral interactions. In this context, the invocation of historical memory is noteworthy: the 2018 agreement recognised the important role played by Poland and Hungary — both key critics of Germany within the EU at the time — in resolving the 'German question' in 1990, the settlement of which had significantly strengthened the Federal Republic's position. By contrast, the 2021 agreement revealed a clear note of skepticism, reflecting the persistence and escalation of 'irritants' in the bilateral dialogue. The evolution of Berlin's perception of the Polish factor is also evidenced by the frequency of its mention in coalition agreements: five times in 2013, six times in 2018, and only twice in 2021.[3]

## The political dialogue: evolution of content and institutional dimension

By the mid-2020s, the legal foundation of bilateral relations continued to rest on the Treaty on Good Neighborship and Friendly Cooperation, signed on 17 June 1991.[4] In accordance with Paragraph 3 of the Treaty, a format of intergovernmental consultations was established, which convened regularly — approximately

[1] [1] Deutschlands Zukunft gestalten Koalitionsvertrag zwischen CDU, CSU und SPD. 18. Legislaturperiode. 2013, Berlin, *Bundestag*, S. 165, 167, 170 ; Ein neuer Aufbruch für Europa. Eine neue Dynamik für Deutschland. Ein neuer Zusammenhalt für unser Land. Koalitionsvertrag zwischen CDU, CSU und SPD. 19. Legislaturperiode. 2018, Berlin, *Bundestag*, S. 9, 146 ; Mehr Fortschritt wagen. Bündnis für Freiheit, Gerechtigkeit und Nachhaltigkeit. Koalitionsvertrag 2021 — 2025 zwischen der Sozialdemokratischen Partei Deutschlands (SPD), BÜNDNIS 90 / DIE GRÜNEN und den Freien Demokraten (FDP). 2021, Berlin, *Bundestag*, S. 126, 136.

[2] Ibid.

[3] Ibid.

[4] Vertrag zwischen der Bundesrepublik Deutschland und der Republik Polen über gute Nachbarschaft und freundschaftliche Zusammenarbeit vom 17. Juni 1991. 17.06.1991, *Auswärtiges Amt*, URL: https://www.auswaertiges-amt.de/blob/2466170/57020a2e3064c4f8b8785dbd3aced4d6/deutsch-polnischer-nachbarschaftsvertrag-data.pdf (accessed 07.02.2025).

every two years — until 2018 inclusive. Within two months of the treaty's conclusion in 1991, the Weimar Triangle was formed at the level of foreign ministers. Over time, this format expanded to include meetings at the level of heads of state and government, as well as the presidents of the lower houses of national parliaments (the Bundestag, the Sejm, and the National Assembly) and the chairs of relevant parliamentary committees (Table 1). For all these formats, no fixed meeting schedule was established, allowing for flexible timing (unlike the intergovernmental consultations, which followed a more regular pattern). By the early 2010s, five high-level meetings had been held involving the presidents of Poland and France and the German Chancellor: in Poznań (1998), Nancy (1999, 2005), Hambach (2001), and Warsaw (2011).[1] During the preparation and accession of Poland to NATO (1999) and the EU (2004), the Weimar Triangle met at the highest level almost every year. Poland's accession to the Euro-Atlantic community was accompanied by a declining interest in the Weimar Triangle format, as Warsaw increasingly prioritised cooperation with the United States and the United Kingdom over engagement with Germany and France. During the 2000s, meetings within the Triangle took place with intervals of four to six years, and following the 2011 summit, there was an eleven-year hiatus. Consultations at the level of foreign ministers were held more frequently — typically once every one to two years — but even this track experienced a significant interruption: after the meeting in September 2015, the next session did not occur until October 2020.[2] What is the reason for the indicated interruptions in the work of the Weimar Triangle and intergovernmental consultations (the latter since November 2018)?

*Table 1*

**The functioning of the Weimar Triangle**

| Level of representation | Date of the first meeting | Date of last meeting (by 2025) |
|---|---|---|
| Ministers of Foreign Affairs | 1991, August | 2024, May |
| Heads of state and government | 1993, September (non-official)<br>1998, February (official) | 2024, March |
| Chairmen of the Committees of the Lower Houses of Parliament on Foreign Affairs, EU | 2007, March | 2024, November |
| Presidents of the lower houses of national parliaments | 2010, May | 2019, May |

*Source*: Die wechselseitigen Beziehungen Deutschlands, Frankreichs und Polens seit Wegfall des „Eisernen Vorhangs" unter besonderer Berücksichtigung der In-

[1] Die wechselseitigen Beziehungen Deutschlands, Frankreichs und Polens seit Wegfall des „Eisernen Vorhangs" unter besonderer Berücksichtigung der Initiative „Weimarer Dreieck", *Deutscher Bundestag, Wissenschaftliche Dienste*, WD 2-3000-075/16. 17.05.2016, S. 22, URL: https://www.bundestag.de/resource/blob/433608/974b65521ade6d93abca67ce5aec98d1/WD-2-075-16-pdf.pdf (accessed 07.02.2025).

[2] Joint statement by the Ministers for Foreign Affairs of the Weimar Triangle (France, Germany and Poland) — Jean-Yves Le Drian, Heiko Maas and Zbigniew Rau. 15.11.2020, *Auswärtiges Amt*, URL: https://www.auswaertiges-amt.de/de/newsroom/weimarer-dreieck-2405714 (accessed 07.02.2025).

itiative „Weimarer Dreieck“, *Deutscher Bundestag, Wissenschaftliche Dienste*, WD 2-3000-075/16, 17.05.2016, S. 22—23, URL: https://www.bundestag.de/resource/blob/433608/974b65521ade6d93abca67ce5aec98d1/WD-2-075-16-pdf.pdf (accessed 07.02.2025) ; Weimarer Dreieck: über 30 Jahre grenzüberschreitende Zusammenarbeit zwischen Deutschland, Frankreich und Polen. 05.02.2024, *Auswärtiges Amt*, URL: https://www.auswaertiges-amt.de/de/aussenpolitik/europa/zusammenarbeit-staaten/weimarer-dreieck-node (accessed 07.02.2025) ; Trilaterales Treffen der EU-Ausschüsse im Format „Weimarer Dreieck“. 25.11.2024, *Bundestag*, URL: https://www.bundestag.de/ausschuesse/a21_eu/texte/20241124-weimarer-dreieck-1031168 (accessed 07.02.2025) ; Schäuble: Überwindung der Teilung Europas nicht gefährden. 13.05.2019, *Bundestag*, URL: https://www.bundestag.de/dokumente/textarchiv/2019/kw20-weimarer-dreieck-642244 (accessed 07.02.2025).

The interruption was preceded by the active involvement of the Weimar Triangle in supporting the Ukrainian opposition during the protests in Kyiv that began in late November 2013. This involvement included facilitating an agreement with President Viktor Yanukovych on February 21, 2014. However, the subsequent violent seizure of power on February 22, 2014, constituted a violation of the agreement. The document signed on February 21 was guaranteed by Frank-Walter Steinmeier, the Foreign Minister of Germany and Radosław Sikorski, the Foreign Minister of Poland, and the head of the department of the French Ministry of Foreign Affairs.[1] The very fact that the agreements were broken the very next day did not cause any noticeable concern among the triumvirate of guarantor states.

In March 2014, Germany, Poland and France continued to use the format to support the new authorities in Ukraine, condemning the establishment of Russian sovereignty over the Crimean Peninsula.[2] Thus, the Weimar Triangle emerged as a significant expression of the position of EU member states — and of the Union itself — on one of the most important issues for ‘Western democracies’. This use of the format was fully aligned with Germany’s strategic guidelines and objectives in its dialogue with Poland.

However, against the background of the armed conflict in the then eastern Ukraine, the positions of official Berlin and Warsaw began to differ noticeably. The consensus remained on long-term priorities — to ensure Ukraine’s rapprochement with the Euro-Atlantic community, to maximally spread its influence in the post-Soviet space. The difference manifested itself in the strategies (partly) and tactics for achieving these goals.

In a situation where the new Ukrainian authorities were unable to suppress resistance in the People’s Republic of Donbass and People’s Republic of Lugansk by force, the German-French tandem decided to go for demonstratively forced interaction with the Russian Federation [31]. As practice showed, and then an inter-

[1] Die wechselseitigen Beziehungen Deutschlands, Frankreichs und Polens seit Wegfall des „Eisernen Vorhangs” unter besonderer Berücksichtigung der Initiative „Weimarer Dreieck”, *Deutscher Bundestag, Wissenschaftliche Dienste*, WD 2-3000-075/16. 17.05.2016, S. 25, URL: https://www.bundestag.de/resource/blob/433608/974b65521ade6d93abca67ce5aec98d1/WD-2-075-16-pdf.pdf (accessed 07.02.2025).

[2] Joint Statement on Ukraine of the Weimar Triangle Foreign Ministers Frank-Walter Steinmeier (Germany), Laurent Fabius (France), and Radoslaw Sikorski (Poland) in Weimar. 31.03.2014, *Auswärtiges Amt*, URL: https://www.auswaertiges-amt.de/en/newsroom/news/140331-gemeinsame-erklaerung-zur-ukraine-261272 (accessed 07.02.2025).

view with Angela Merkel after her resignation,[1] official Berlin and Paris did not advocate for a settlement aimed at fully eliminating the root causes of the conflict through non-military means. Instead, they pursued a strategy of regulation, maintaining the conflict at a controlled, albeit non-zero, level of violence, which was inherently unsustainable in the long term. This approach allowed official Kyiv time to prepare for a forceful resolution of the conflict. However, such a strategy necessitated considerable flexibility in relations with the Russian Federation as a systemic adversary — an approach that was not supported by the authorities in Warsaw.

For this reason, Germany and France, without the third party of the Weimar format, established the 'Normandy Four' (with the participation of Russia and the new authorities of Ukraine) on June 6, 2014. Subsequently, the two Western European powers refused to satisfy Poland's requests to include it in the negotiating format.[2] The extremely tough anti-Russian position of Poland inevitably made the already difficult work in the Normandy format much more difficult. If Germany used this platform to be forced to interact with the Russian Federation, then the Weimar Triangle was used to increase pressure on Russia through the EU. This scheme of using platforms strengthened Germany's position as the senior party in the dialogue with Poland. For it, this entailed tangible costs: due to its non-participation in the Normandy Four, Poland was partially removed from determining the West's strategic line on Ukraine. This was most clearly demonstrated during the signing of the Minsk-2 agreements on February 12, 2015, for which Germany and France assumed the role of guarantors [31].

Official Warsaw began to respond with particular intensity to the evolving political landscape following the victory of the Law and Justice Party (PiS) in the parliamentary elections of October 2015. The new government initiated steps to suspend the activities of the Weimar format, aiming to exert pressure on Germany. Amid the crisis of mass, uncontrolled migration to the European Union between 2015 and 2017, Polish authorities sharply criticized Chancellor Angela Merkel for her adherence to the 'open-door' policy, leveraging the platform of the Visegrád Group (V4 — Hungary, Slovakia, Poland, and the Czech Republic) to articulate their position [10; 11]. In the late 2010s, attempts by Germany to strengthen ties with the V4 were met with resistance from official Warsaw and Budapest. Nevertheless, Berlin succeeded in improving bilateral relations with the Czech Republic and Slovakia.

The PiS government sought to assert a leadership role in the dialogue with Germany during the 15th round of intergovernmental consultations, held in Warsaw on 2 November 2018 and symbolically aligned with the centenary of Poland's restoration as an independent state on parts of the former territory of the Second Reich. During the negotiations, the Polish delegation — which included both government representatives and PiS party officials — raised the issue of

[1] Angela Merkel: Hatten Sie gedacht, ich komme mit Pferdeschwanz? 07.12.2022, *Die Zeit*, URL: https://www.zeit.de/2022/51/angela-merkel-russland-fluechtlingskrise-bundeskanzler (accessed 07.02.2025).

[2] Die wechselseitigen Beziehungen Deutschlands, Frankreichs und Polens seit Wegfall des „Eisernen Vorhangs" unter besonderer Berücksichtigung der Initiative „Weimarer Dreieck", *Deutscher Bundestag, Wissenschaftliche Dienste*, WD 2-3000-075/16. 17.05.2016, S. 25, URL: https://www.bundestag.de/resource/blob/433608/974b65521ade6d93abca67ce5aec98d1/WD-2-075-16-pdf.pdf (accessed 07.02.2025).

reparations from Germany for the crimes of the Second World War. This demand was firmly rejected by the Federal Republic of Germany [3, p. 63; 5]. As a result, the intergovernmental consultations were subsequently suspended.

In the first half of the 2020s, the activities of both formats were gradually resumed. In October 2020, the Weimar Triangle was reactivated at the level of foreign ministers, followed by a meeting of heads of state and government in February 2022. Subsequently, in June 2024, new intergovernmental consultations between Germany and Poland took place (Table 1). The trilateral platform resumed its functions first, followed by the bilateral format. The interval between each pair of events was approximately 1.5 to 2 years, indicating a deliberate and gradual process in which the parties carefully anticipated and subsequently evaluated the implications of each stage.

What accounts for the resumption of these formats? The change in government, particularly in the Republic of Poland, does not appear to have been the decisive factor. The Weimar Triangle reconvened at senior and highest levels well before the Polish parliamentary elections of September 2023, which led to the formation of a coalition government headed by Donald Tusk, representing the Civic Platform (since December 13, 2023). Preparations for the 16th round of intergovernmental consultations had also begun prior to the transition of power. Moreover, the influence of the Law and Justice Party on foreign policy has remained considerable, both indirectly — as the largest faction in the Sejm — and directly, through President Andrzej Duda.

The recognition of Joe Biden from the Democratic Party as the winner of the US presidential election on November 3, 2020, is an important factor, although this happened a little later than the restart of the Triangle at the level of foreign ministers. Official Warsaw regarded the United States (and partly Great Britain) as its most important ally, assigning Germany a secondary importance.

The events of the 2000s — 2010s showed that cooperation between the Republic of Poland and the United States developed most dynamically under Republican administrations. The most illustrative is the advanced bilateral cooperation during the presidency of Donald Trump (2017—2021). It was based, among other things, on the proximity of values. Like the 45th President of the United States, the Law and Justice Party (PiS) represented right-wing conservative forces and adopted a cautious stance toward liberal values, particularly in matters concerning the individual, family, and society [4, p. 20—21; 17]. One area of alignment between PiS and the U.S. administration at the time was the coordination of pressure on Germany, especially with the aim of compelling it to significantly increase military spending [11]. However, by the late 2010s, official Berlin had demonstrated its capacity to resist pressure from both the Republic of Poland and the United States, effectively distinguishing its opposition to each in both temporal and functional terms. While Germany did increase its defence expenditures, it did so according to a timeline aligned with its own strategic preferences rather than in response to external demands from Washington and Warsaw. German diplomacy also worked to prevent Poland from negotiating a separate agreement with the United Kingdom on Brexit, distinct from the collective position of the other EU member states [32]. As a result, the final terms proved more favourable to the European Union than to London, and the overall impact of Brexit was less detrimental than initially anticipated.

The Biden administration (2021—2025) generally had a favourable effect on German—Polish relations, contributing to a more constructive diplomatic climate. Under the 46th president, the United States continued to actively encourage

continental European partners to significantly increase the burden of 'deterrence' of the Russian Federation, but did so not through harsh pressure, but in carefully calibrated forms [28; 29]. This trend, along with Germany's gradually but steadily increasing willingness to expand its contribution and adopt a tougher stance in the confrontation with the Russian Federation, created the preconditions for overcoming the downturn in German—Polish dialogue.

Particularly significant were the large-scale transformations taking place in the western part of the post-Soviet space, notably the growing risk of a halt in the expansion of the Euro-Atlantic community's influence in the region. While official Warsaw was actively strengthening its armed forces, this effort alone proved insufficient to prevent setbacks in achieving strategic objectives regarding Belarus and Ukraine. Consequently, the Republic of Poland found itself increasingly reliant on the support of its partners, including Germany. This renewed interest in cooperation was largely reciprocal, driven by similar underlying concerns, albeit to a lesser extent on the German side.

The overall strengthening of Germany's position within the forward area of NATO's zone of responsibility was also a significant factor contributing to the resumption of cooperation formats. Notably, Berlin achieved this increased influence without substantial support from Poland. Germany's most prominent successes occurred in its relations with Vilnius and the Baltic States more broadly. In contrast to formats involving Poland, the 'B3+1' mechanism (comprising the three Baltic republics and Germany), which was launched in 1994, continued to function regularly throughout the latter half of the 2010s. Since 2017, German Bundeswehr units have been stationed in Lithuania, serving as the core of NATO's multinational battalion tactical group (BTG) deployed under the Forward Presence initiative.

Official Berlin effectively leveraged this military engagement by elevating the 'B3+1' dialogue: starting in 2018, meetings began to take place not only at the foreign minister level (on an annual basis) but also, albeit irregularly, at the level of heads of state and government [33, p. 70—75]. Germany's increasing influence in Lithuania was particularly salient from Poland's perspective, given the historical precedent of Polish leadership in relations with its eastern neighbour. From the late 14th century onward, the Polish Crown gradually asserted dominance over the Grand Duchy of Lithuania, culminating in their formal union as the Polish-Lithuanian Commonwealth (a federation of 'principality' and 'crown', with the latter prevailing) from 1569 to 1795. During the interwar period (1920—1939), the re-established Polish state annexed extensive Lithuanian territories, including the city of Vilnius.

In this context, Germany's provision of concrete security and defence guarantees to Lithuania — particularly within the NATO framework — was a powerful demonstration of influence that did not go unnoticed in Warsaw. This development contributed to Poland's growing readiness to resume structured formats of cooperation with Germany. In general, the tactics of suspending the work of the Weimar Triangle and intergovernmental consultations chosen by Poland in the second half of the 2010s did not bring the expected results in terms of pressure on Germany. This was also facilitated by holding bilateral negotiations at the highest and high levels outside the formats, which means the most common form of interstate dialogue. These contacts were usually annual, and in terms of the breadth of the agenda and significance, they were often noticeably inferior to meetings on the sidelines of the platforms in question. Overall, Germany succeeded in consolidating its position within the Euro-Atlantic community, and most notably

within the region traditionally considered Poland's immediate sphere of interest. This was achieved despite a noticeable decline in bilateral dialogue with the Republic of Poland and without demonstrating a willingness to offer concessions to the latter.

The Weimar Format meeting at the foreign ministerial level in October 2020 occurred in the context of the pro-Western opposition in Belarus failing to seize power following the presidential elections held on August 9, 2020.

The Weimar Triangle negotiations with the participation of heads of state and government took place on 8 February 2022, ahead of the start of the SMO. The venue for the consultations was Berlin, which, together with the very fact of their resumption, reflected the strengthening of Germany's position with respect to the Republic of Poland. By this time, the Normandy format had ceased to work, and the likelihood of implementing 'Minsk-2' was close to zero. Chancellor Olaf Scholz effectively acknowledged these provisions during his visit to Russia on 15 February 2022.[1] Consequently, significant obstacles in German-Polish relations were resolved. More importantly, the leadership of the Federal Republic of Germany demonstrated a readiness to adopt a markedly firmer stance to deter the Russian Federation, including through military means. This position was communicated to the authorities of the Republic of Poland during the Weimar Format negotiations on February 8, 2024. Within merely three days of the commencement of the Special Military Operation, official Berlin initiated arms supplies to Ukraine and announced the establishment of a special fund amounting to 100 billion euros to support the Bundeswehr's needs.[2] The speed and scale of the decisions taken by Germany indicated that the supplies had been planned in advance. On April 28, 2022, the Bundestag formally lifted the ban on supplying weapons and military equipment to Ukraine, thereby legalizing the ongoing practice of deliveries in increasing volumes,[3] expanding the range of equipment, and enhancing the firepower and range of the transferred systems. In June 2022, Germany, ahead of all other NATO member states, initiated the transformation of the multinational battalion tactical group of Forward Presence, led by the Bundeswehr, into a brigade.[4]

The sharp increase in Germany's military involvement in the confrontation with the Russian Federation, especially under the auspices of the Alliance, was both beneficial and inconvenient for Poland. Germany's plans to substantially expand its military capabilities and adopt a more assertive posture in Eastern Europe have not only bolstered Poland's security and defence but also reignited interstate rivalry. A key manifestation of this competition is Poland's ambition not only to outpace Germany in military modernisation but also to surpass it in

[1] Press conference following Russian-German negotiations. 15.02.2022, *Administration of the President of the Russian Federation*, URL: http://www.kremlin.ru/events/president/news/67774 (accessed 07.02.2025).

[2] Regierungserklärung von Bundeskanzler Olaf Scholz. 27.02.2022, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/suche/regierungserklaerung-von-bundeskanzler-olaf-scholz-am-27-februar-2022-2008356 (accessed 07.02.2025).

[3] Namentliche Abstimmung. Frieden und Freiheit in Europa verteidigen — Umfassende Unterstützung für die Ukraine. Plenarprotokoll 20/31. 28.04.2022, Deutscher Bundestag, 20, Wahlperiode, Stenografischer Bericht 31. Sitzung, S. 2743A—2745D.

[4] „Russland darf und wird diesen Krieg nicht gewinnen". 07.06.2022, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/suche/bundeskanzler-in-litauen-2047754 (accessed 07.02.2025).

the strength of its ground forces. Moreover, in 2022—2023, a certain division of military and practical responsibilities began to emerge. Germany, traditionally 'dissolving' its military efforts in multilateral ones, claimed the role of the leading assembler and leader (the so-called 'framework nation') for a wide range of NATO multilateral groups. First of all, the Bundeswehr was deployed as part of formations intended to advance from the rear of the Alliance's zone of responsibility to its forward areas in the event of a crisis. These included the NATO Response Force and, starting from July 1, 2024, the Allied Reaction Force, which was established on its basis. The contingents of NATO Forward Presence, especially the brigade being formed (by 2027) in Lithuania, were considered by official Berlin as reinforced vanguards.[1] Official Warsaw sought to leave the majority of its armed forces under national command, participated to a limited extent in the staffing of multinational groups, but showed a noticeable interest in their use in Eastern Europe. Until the early 2020s, the irritants for Poland included Germany's willingness to agree only to a rotational deployment of NATO Forward Presence. From 2022—2023, Berlin changed its approach, especially when using the Bundeswehr: the brigade being created in Lithuania (45th Armoured) should not only consist almost entirely of German units, but also be stationed on a permanent basis.[2]

The Weimar Format summit on 8 February 2022 was one of many reasons why Poland joined the leading 'Western democracies' when they were discussing the situation in Ukraine in February—April 2022. However, the informal group was not institutionalised,[3] and since May 2022, the meetings have ceased. Instead, the Ramstein format emerged with the participation of all NATO and EU member states [34, p. 8, 32—35]. Poland achieved only short-term success, but overall did not make any significant progress in its intention to join the group of 'Western powers'. On the contrary, Germany strengthened its position in it by continuing to show intransigence on the most important contentious issues with the Republic of Poland: Berlin made it clear that it considered the issue of reparations closed forever. Germany strengthened its noticeable influence in the Baltic countries: on May 6, 2024, the next negotiations in the 'B3 + 1' format were held at the level of heads of state and government.[4] The listed trends set the changed framework conditions for interstate dialogue with the Republic of Poland.

New negotiations of the heads of state and government of the Weimar Triangle took place on June 12, 2023, in Paris and on March 15, 2024, in Berlin. The annual frequency of meetings, as well as the fact that they were held in Germany in both 2022 and 2024, reflected the trend of Germany strengthening its position

[1] Bundeswehr in Litauen: In großen Schritten zur deutschen Kampfbrigade. 2025, *BMVg*, URL: https://www.bundeswehr.de/de/aktuelles/meldungen/bundeswehr-litauen-grosse-schritte-deutsche-kampfbrigade (accessed 07.02.2025).

[2] Ibid.

[3] Pressekonferenz von Bundeskanzler Scholz zur Telefonschaltkonferenz am 19. April 2022. 19.04.2022, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/suche/pressekonferenz-von-bundeskanzler-scholz-zur-telefonschaltkonferenz-am-19-april-2022-2026400 (accessed 07.02.2025).

[4] Pressekonferenz von Bundeskanzler Scholz, Ministerpräsidentin Siliņa, Ministerpräsidentin Kallas und Ministerpräsidentin Šimonytė am 6. Mai 2024 in Riga. 06.05.2024, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/suche/pressekonferenz-von-bundeskanzler-scholz-ministerpraesidentin-silina-ministerpraesidentin-kallas-und-ministerpraesidentin-šimonytė-am-6-mai-2024-2277440 (accessed 07.02.2025).

in the dialogue with the Republic of Poland. The substantive focus of the negotiations, especially in 2024, was on coordinating military assistance for Ukraine (supplies of weapons and military equipment, personnel training)[1] in the context of the ongoing offensive of the Russian Armed Forces on the fortified areas of the Ukrainian Armed Forces in the western part of the People's Republic of Donbass. Germany once again, as in 2014—2015, used the Weimar format as an expression of the EU's interests in the western part of the post-Soviet space.

On July 2, 2024, the 16th intergovernmental consultations took place. As with the previous round (the 15th, held in 2018), the meeting was held in Warsaw, which constituted a violation of the established protocol of alternating host countries. However, this deviation was advantageous not so much for the Republic of Poland as for Germany: having suspended the consultations for an extended period, Poland demonstratively agreed to their resumption, ultimately failing to assert seniority in the dialogue. At the 16th intergovernmental consultations, the parties repeatedly noted the high level of trust, thereby indirectly indicating that the decline in relations has been largely overcome. Mutually welcoming the significant contribution to supporting the Ukrainian Armed Forces, the states agreed on the need to further expand the EU as an association; the willingness to cooperate along NATO lines has noticeably increased.[2]

The listed provisions were manifested in the very fact of the adoption of a bilateral action plan (which was an innovation for the practice of German-Polish consultations) and the content of the document. Security and defence issues were singled out in a separate section. The parties indicated their readiness to mutually take into account the interests and support when discussing the transformation of the UN, especially its Security Council.[3] Since the 1990s, Germany has made unsuccessful attempts to become a permanent member, but until the early 2020s, Poland took a *de facto* negative position on this issue.

Germany and Poland agreed to deepen cooperation in the field of engineering and naval forces (where Germany possessed considerable potential), as well as to establish coordination between territorial defence brigades and regional territorial commands. In this regard, Poland had created a large reserve, while its neighbour was only beginning to recreate the network of these formations and headquarters that had been disbanded after the Cold War. It is logical that in military-technical terms, the focus was on modernising the German-made Leopard tanks that the Polish Army had. Moreover, according to Poland's plans, the most common tanks in its armed forces in the future will be the South Korean Black Panthers and the US Abrams, while the number of Leopards will be significantly reduced [21, p. 39—98].

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[1] Pressestatements von Bundeskanzler Scholz, Präsident Macron und Ministerpräsident Tusk beim Treffen der Staats- und Regierungschefs im Format des Weimarer Dreiecks am 15. März 2024 in Berlin. 15.03.2024, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/suche/pressestatements-von-bundeskanzler-scholz-praesident-macron-und-ministerpraesident-tusk-beim-treffen-der-staats-und-regierungschefs-im-format-des-weimarer-dreiecks-am-15-maerz-2024-2265726 (accessed 07.02.2025).

[2] „Gute Nachbarn, enge Partner und verlässliche Freunde". 02.07.2024, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/suche/deutsch-polnische-regierungskonsultationen-2024-2295270 (accessed 07.02.2025).

[3] Deutsch-Polnischer Aktionsplan. 02.07.2024, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/resource/blob/992814/2295276/b5e9e128f9d0909349fd9a57f04cbe69/2024-07-02-deu-pol-aktionsplan-de-data.pdf?download=1 (accessed 07.02.2025).

## Opportunities and challenges of military cooperation

Among NATO member states, the United States (1,338 thousand in 2014 and 1,317 thousand in 2022) and Turkey (427 thousand and 456 thousand personnel, respectively) have traditionally had the largest armed forces.[1] In the context of confrontation with the Russian Federation, the third position has acquired considerable practical and image significance — namely, the status of the state capable of claiming and maintaining it. Until 2022, this position was held by France; however, its Armed Forces did not expand, maintaining a stable personnel level of approximately 207,000—208,000 service members since 2014.[2] Since 2022, Germany has been openly declaring its ambition to claim this position, while Poland has been de facto competing for it.

In the late 2010s, Germany was somewhat ahead of Poland in terms of publishing plans for strengthening its armed forces, particularly the land forces, which were assigned an increasingly prominent role in NATO's strategic planning and operational concepts. Both countries outlined similar ambitions: to double the number of divisions (from three to six) and to significantly expand the number of brigades, especially among combat troops. However, the pace at which each country moved toward achieving these objectives differed markedly. By 2025, Poland had already deployed three full divisions, was actively staffing a fourth, had begun creating a fifth, and was preparing to deploy a sixth. All existing divisions (11th Armoured, 12th Mechanized, 16th Mechanized) had 3 brigades each, and the new ones (1st Polish Legions and 18th Mechanized) had 4 brigades each. Taking into account the 2 airborne brigades, the RP had 22 military brigades [35].

By 2025, Germany had not created a single new brigade or division. The Bundeswehr continued to consist of the 1st Panzer Division and the 10th Panzer Division, which together comprised approximately 5.5 tank and mechanized infantry brigades. In addition, the Rapid Forces Division remained operational, comprising two brigades: one airborne and one specializing in mountain infantry.[3] Even considering that a Bundeswehr brigade (excluding the airborne brigade) typically comprises 5—6 battalions, while a brigade in the Polish Armed Forces consists of 3—4 battalions, the difference remains significant [35]. Germany plans to establish one regular brigade in Lithuania by 2027, and, regarding the creation of a new division, German authorities are contemplating relying on reserve servicemen.

Between 2014 and 2023, the Polish Armed Forces expanded by 108 %, whereas the Bundeswehr increased by only 5 % by 2022 (Table 2). Consequently, by 2024, Poland ranked third among NATO member states in terms of personnel numbers. In the medium term, Germany has limited prospects of closing this gap, let alone surpassing Poland. Of the total number of armed forces of NATO member states excluding Canada and the United States, the Bundeswehr accounted for 9.6 % in 2022, while the Polish Army accounted for 9.3 %. In 2024, based on preliminary data, this will be 9 % and over 10.5 % (Table 2). Of the total increase in the armed forces of European member states and Turkey in 2014—2024 (216 thousand military personnel), more than half (117 thousand personnel) came from Poland.

[1] Defence expenditures of NATO countries (2014—2024). 2024, Brussels, *NATO*, P. 13.
[2] Ibid.
[3] Deutsches Heer. 2025, *BMVg*, URL: https://www.bundeswehr.de/de/organisation/heer (accessed 07.02.2025).

*Table 2*

**Dynamics of the number of German and Polish armed forces, thousands, military personnel**

| Category / year | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023* | 2024* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Germany | 178.8 | 177.2 | 177.9 | 179.8 | 181.5 | 183.8 | 183.9 | 183.9 | 183.2 | 181.7 | 185.6 |
| Poland | 99.0 | 98.9 | 101.6 | 105.3 | 109.5 | 113.1 | 116.2 | 166.8 | 176.0 | 206.5 | 216.1 |
| NATO without USA. Canada | 1825 | 1741 | 1718 | 1787 | 1823 | 1812 | 1827 | 1900 | 1901 | 1967 | 2041 |
| NATO as the whole | 3229 | 3125 | 3090 | 3163 | 3210 | 3213 | 3243 | 3317 | 3285 | 3320 | 3418 |

*Source*: Defence expenditures of NATO countries (2014—2024). 2024, Brussels, *NATO*, P. 13.

*Note*: * For 2023 and 2024, the data is preliminary.

At the same time, the Republic of Poland has been rapidly increasing its defence spending. Poland's defence spending accounted for approximately or slightly above 2 % of GDP in the mid-2010s to early 2020s, and is projected to exceed 4 % by 2025. Warsaw was noticeably ahead of the absolute majority of NATO partners, especially Germany: its indicator at the end of the 2010s was at 1.5 %, and in 2024 it should be above 2 % for the first time (Table 3).

*Table 3*

**Military spending as a share of GDP for Germany and Poland, %**

| Category / year | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023* | 2024* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Germany | 1.19 | 1.19 | 1.20 | 1.23 | 1.25 | 1.35 | 1.51 | 1.45 | 1.51 | 1.64 | 2.12 |
| Poland | 1.88 | 2.23 | 2.00 | 1.89 | 2.02 | 1.99 | 2.23 | 2.22 | 2.23 | 3.26 | 4.12 |
| NATO without USA | 1.42 | 1.43 | 1.44 | 1.48 | 1.51 | 1.54 | 1.72 | 1.66 | 1.66 | 1.78 | 2.02 |
| NATO as the whole | 2.58 | 2.48 | 2.48 | 2.39 | 2.40 | 2.52 | 2.69 | 2.63 | 2.51 | 2.53 | 2.71 |

*Source*: Defence expenditures of NATO countries (2014—2024). 2024, Brussels, *NATO*, P. 9.

*Note*: * For 2023 and 2024, the data is preliminary.

Poland's substantial increase in annual military spending between 2014 and 2024—amounting to an additional 25 billion euros—elevated its position among NATO member states from 10th to 5th place by 2025. This rise allowed Poland to surpass the Netherlands, Spain, Canada, Italy, and Turkey, positioning it close to the core group of leading Western powers.

Nonetheless, Germany's military budget growth during 2014—2022 was even more pronounced, with an increase exceeding 50 billion dollars, twice the amount

of Poland's rise (Table 6). Consequently, by 2025, Germany secured second place after the United States in terms of specialized military expenditures. This significant budgetary advantage underscores Germany's superior volume and resource capacity. The approach toward annual military spending near 100 billion dollars provides the necessary conditions for comprehensive qualitative and quantitative modernization of the Bundeswehr, enabling it to address and overcome multiple challenges in enhancing its combat readiness.

*Table 4*

**Military expenditures of Germany and Poland: volumes (USD) and position (descending) in the NATO countries' rating, mln**

| Year | Germany | Poland |
|---|---|---|
| 2014 | 46 176 (IV place) | 10 107 (X place) |
| 2017 | 45 470 (IV place) | 9940 (IX place) |
| 2021 | 62 054 (III place) | 15 099 (VIII place) |
| 2022 | 61 405 (III place) | 15 338 (VIII place) |
| 2024* | 97 686 (II place) | 34 975 (V place) |

*Source*: Defence expenditures of NATO countries (2014—2024). 2024, Brussels, *NATO*, P. 8.

*Note*: * For 2024, the data is preliminary.

By the mid-2020s, Poland had gained a very high speed in building up its military power. However, this process also creates certain challenges for the country. Firstly, it began to approach the objective, without the condition of transition to the mobilization model of development, the limits of growth of various parameters of the Armed Forces. The West German Bundeswehr at the peak of its capabilities during the Cold War accounted for 0.8 % of the total population of the country (about 500 thousand military personnel and 63 million people, respectively) [26, p. 193—228]. The same indicator appears applicable to the modern Republic of Poland: with a population of approximately 38 million, 0.8 % corresponds to about 300,000 military personnel. This figure aligns precisely with the benchmark target set by official Warsaw for its armed forces. The question is what it will do when it reaches this level, not being objectively capable of increasing it further, while other NATO member countries (primarily Germany) will, albeit slowly, approach it. Official Warsaw may advocate not only for an increase in the U.S. military presence to complement its sizable conventional forces, but also for the deployment of U.S. nuclear weapons on Polish territory. This would effectively grant Poland indirect access to nuclear capabilities — akin to the arrangement with West Germany during the Cold War — which would significantly raise regional tensions and pose serious risks to strategic stability.

Secondly, by the mid-2020s, a similar challenge emerges for the Republic of Poland in the sphere of military spending: sustaining a level of 4 % of GDP or higher is likely to exert a noticeable distorting effect on the national economy. In contrast, the inertia characteristic of the German 'military machine' carries not only disadvantages, such as slower responsiveness, but also certain advantages — primarily the ability to leverage Germany's significantly larger resource base in a much more optimal manner.

Germany's advantage in rationalism — and the resulting political and image dividends — was also evident in matters concerning the deployment and use of its Armed Forces, particularly in the forward area of NATO's zone of responsibility. This is all the more remarkable given that official Warsaw avoided the appearance of ground contingents of the Bundeswehr on Polish territory. Here, at the request of the Republic of Poland, the US and British troops formed the basis of the presence of the bloc's SPR and forces during the largest military exercises. At the Anakonda 16 maneuvers (June 2016, a total of 31 thousand soldiers were involved), the Bundeswehr's contribution was limited to only one engineer battalion (0.4 thousand people).[1]

Germany successfully circumvented this obstacle through several tactics. Firstly, in February 2015, the headquarters of the trilateral (Denmark, Germany, Poland) Multinational Corps Northeast was elevated to serve as the command of a NATO multinational division bearing the same name.[2] This staff led the Alliance's Forward Presence tactical groups in Poland and Lithuania. As a result, the Bundeswehr staff personnel was not only stationed in Poland but also began to play a significant role in commanding the troops stationed there under the bloc's flag.

Secondly, Germany has been developing a diversified system of ground military presence in Eastern Europe, largely bypassing Poland. To the north of Poland, this included the Bundeswehr contingent in Lithuania, which was being expanded into a full brigade by 2027. This formation was organizationally integrated with NATO Forward Presence units stationed in Poland, all subordinated to the command structures of the Multinational Division and Corps 'North—East'. To the south of Poland, between 2022 and 2024, the Bundeswehr participated in staffing NATO's battalion tactical group in Slovakia; during the initial phase of this formation's existence (spring—summer 2022), the German contingent was the largest.[3] Since at least 2024, the deployment of Bundeswehr ground units in Romania has also been under practical consideration.

Thirdly, by the mid-2020s, Germany had established elements of its military presence in Poland in the fields of air force and air defence, responding to requests from official Warsaw. Poland's strategic focus on expanding its ground forces, coupled with comparatively less dynamic development in other branches of its armed forces, necessitated support from NATO partners in these areas, particularly neighbouring Germany. In May 2021, a bilateral interstate agreement was signed authorizing German fighter aircraft to operate in Polish airspace for patrol purposes.[4] This activity intensified significantly from March 2022 onward, at the initiative of the Republic of Poland. In January 2025, the Bundeswehr deployed two Patriot air defence systems along with their personnel to areas ad-

[1] See: Anakonda 16. 2016, *DVIDS*, URL: https://www.dvidshub.net/feature/Anakonda16 (accessed 07.02.2025).

[2] Trilateral Statement on HQ Multinational Corps Northeast at NATO Defence Ministers Meeting. 05.02.2015, *NATO*, p. 1—2.

[3] Ende des operativen Auftrages in der Slowakei. 31.05.2024, *BMVg*, URL: https://www.bundeswehr.de/de/einsaetze-bundeswehr/eva-uebergabe-slowakei-rueckbau-5788720 (accessed 07.02.2025).

[4] Deutsch-Polnische Zusammenarbeit im Luftraum gefestigt. 18.05.2021, *BMVg*, URL: https://www.bundeswehr.de/de/organisation/luftwaffe/aktuelles/deutsch-polnische-zusammenarbeit-imluftraum-gefestigt-5083332 (accessed 07.02.2025).

jacent to the Ukrainian border.[1] In this way, Germany began to contribute to the security and defence of the Republic of Poland in two significant technical and technologically complex segments, which strengthened Berlin's position as the senior player in the dialogue.

This advantage was manifested in the difference in both the volume and composition of military equipment supplied by each side to Ukraine. In 2022—2023, military aid from the Republic of Poland amounted to approximately 3.5 billion dollars,[2] and Germany — 6.6 billion euros. This means that the difference in the volume of aid was nearly twofold in favour of Germany. In 2024, Germany allocated another 7.1 billion euros,[3] maintaining 2nd position (after the USA) in terms of the volume of weapons and military equipment sent. Having significantly fewer resources, Poland directed the majority of them to support the Ukrainian Armed Forces. This is especially clear in the example of ground equipment, especially tanks: by 2025 Germany transferred 14 Leopard 2A6, 88 Leopard 1A5 to Ukraine,[4] a total of 102 tanks. In turn, the RP sent 270 T-72, 40 PT-91 (modernized T-72), 14 Leopard 2A4, i. e. 324 tanks.[5] Moreover, in other, non-land categories (primarily air defence systems), Germany was significantly ahead of its neighbour. Poland had the same focus on training personnel for the Ukrainian Armed Forces. At the end of 2022, under the auspices of the EU, the *EUMAM UA* military training mission was deployed, with two states at once taking on the leading role in its activities: Germany and Poland,[6] and the largest centres were located respectively in the eastern and western parts of the neighbouring countries.

## Conclusion

In the second half of the 2010s, Poland adopted a strategy of active pressure to bolster its position vis-à-vis Germany. This approach included interrupting the Weimar Triangle and the format of intergovernmental consultations, coordinating pressure with the United States, raising the issue of reparations, and accelerating the growth of its armed forces and military spending. Conversely, Germany pursued a strategy of active defence, consolidating and enhancing its seniority in the dialogue during the first half of the 2020s.

[1] Einsatzbereit: Bundeswehr unterstützt NATO-Luftverteidigung in Polen. 07.02.2025, *BMVg*, URL: https://www.bundeswehr.de/de/einsaetze-bundeswehr/unterstuetzung-nato-luftverteidigung-polen-5888214 (accessed 07.02.2025).

[2] The Ukrainian Prime Minister announced $3.5 billion in aid received from Poland since 2022. 22.01.2024, *Izvestiya*, URL: https://iz.ru/1638185/2024-01-22/premer-ukrainy-soobshchil-o-35-mlrd-poluchennoi-ot-polshi-pomoshchi-s-2022-goda (accessed 07.02.2025).

[3] Diese Waffen und militärische Ausrüstung liefert Deutschland an die Ukraine. 2025, *Bundeskanzleramt*, URL: https://www.bundesregierung.de/breg-de/aktuelles/lieferungen-ukraine-2054514 (accessed 07.02.2025).

[4] Ibid.

[5] Number of disclosed main battle tanks committed to Ukraine as of January 2024, by type and donor country. 2024, *Statista*, URL: https://www.statista.com/statistics/1364974/ukraine-military-aid-tanks/ (accessed 07.02.2025).

[6] Germany — EUMAM UA. 2025, *BMVg*, URL: https://www.bundeswehr.de/en/organization/further-fmod-departments/bundeswehr-homeland-defence-command/germany-eumam-ua (accessed 07.02.2025).

Geographically, official Berlin primarily confined the scope of its negotiations with Warsaw to the Baltic Sea region, Eastern Europe, and the western segment of the post-Soviet space. This delineation underscored the contrast between the Federal Republic of Germany, which aspired to establish itself as a global power, and the Republic of Poland, which remained a regional actor without integrating into the tetrarchy of leading NATO states. Overall, cooperation between the two was intricately interwoven with various facets of competition.

In the development and use of its armed forces Poland has focused primarily on quantitative aspects, and Germany — on qualitative ones, compensating for the advantage of the Polish Army in numbers by deploying a presence system in Eastern Europe, including a ground presence to the north and south of the Republic of Poland. Moreover, the two states have been actively seeking an effective division of competencies, with the Federal Republic of Germany functioning as a 'framework state' for a broad spectrum of multilateral NATO formations, including the Forward Presence units, while Poland has concentrated on building robust forces within its own territory. A particularly salient example of this practical cooperation is evident in the 'Suwalki Corridor', where the Bundeswehr's 45th Armoured Brigade stationed in Lithuania collaborates closely with units from the 16th and 18th Mechanized Divisions of the Polish Army. This coordinated effort is simultaneously directed against potential threats from the Kaliningrad region and the Republic of Belarus. Importantly, this instance represents a significant yet specific manifestation of the broader security challenges posed to the Russian Federation and Belarus by Poland's rapid military expansion alongside Germany's increasing military footprint in Eastern Europe.

The second presidency of Donald Trump (beginning in 2025) is likely to exert a comparatively lesser negative impact on the Republic of Poland's willingness to cooperate with Germany than during his first term. This is attributable, at least in part, to the mutually heightened interest of both Warsaw and Berlin in safeguarding their strategic positions in Ukraine and preventing any weakening of their influence in the region. In the longer term, Ukraine's potential accession to the European Union would stand to benefit Germany no less than Poland. Furthermore, such an enlargement would result in a partial diminution of Poland's leading role within the 'New Europe', thereby objectively enhancing Germany's standing in its bilateral and multilateral engagement with Ukraine.

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# RURAL DEVELOPMENT IN THE BALTIC STATES: ASSESSMENT OF THE CURRENT STATE

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*The article assesses the development level and current state of rural areas in the Baltic States, with a particular focus on Latvia, Lithuania, and Estonia. The primary objective of the study is to identify key aspects of agricultural production, demographic trends in rural areas, and the socio-economic challenges these territories face, as well as to develop recommendations for their sustainable and inclusive growth. The research methodology adopts an interdisciplinary approach, incorporating demographic, economic, social, and environmental dimensions of rural development. The study employs comparative, systemic and statistical data analyses. For a more in-depth examination, methods of economic-geographical analysis and document analysis of European Union policies — particularly the Common Agricultural Policy (CAP) — are utilized. The findings highlight both shared and country-specific issues affecting rural areas in the Baltic States, such as depopulation, aging of the population, high unemployment, low employment rates, and disparities in infrastructure. Special attention is given to agricultural trends, including the impact of EU agricultural policies, structural transformations in the agricultural sector, and the adoption of innovative technologies. The study underscores the importance of enhancing government support for agriculture, implementing sustainable production practices, and improving the overall quality of life in rural areas. This article provides a foundation for future research, including the exploration of the role and significance of integrating rural areas into national and European economic frameworks, enhancing governmental and international support mechanisms, and developing targeted programs aimed at improving rural living standards. These programmes are intended to involve local communities, including parish councils, farmers' unions, and business associations.*

**Keywords:**
rural areas, non-urbanized areas, agriculture, rural population, sustainable development, regional economy, spatial development, Baltic States

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## Introduction. Problem statement

In the context of modern geopolitical and geo-economic changes, non-urbanized territories are in the focus of close scientific attention due to their demographic, economic and social characteristics [1—4], and their socio-economic development is one of the key aspects of the formation of a balanced spatial development of the country [5—8].

Countries of the Baltic region are of particular interest[1] because their geographical location at the junction of Eastern and Western Europe determines their unique socio-economic characteristics. The challenges of rural development are especially pronounced in Latvia, Lithuania, and Estonia. After regaining independence and integration into the European Union, the Baltic States have come a long way in modernising their economic models.[2] However, this process was often accompanied by the deterioration of rural areas. The shift away from central planning, the reorientation towards a market economy, and the opening of borders have led to large-scale changes, including the outflow of the population from rural areas, a decrease in employment and an increase in regional disparities. The introduction of rural development programmes in the EU, including subsidies and grants for agricultural modernisation, infrastructure and sustainable development, has become an important step in supporting rural areas [11—13]. However, despite these efforts, rural areas of the Baltic States continue to face a number of acute problems, including demographic decline, population ageing, job cuts, and infrastructural imbalances [14—16].

The relevance of this article is due to a number of contradictions that arise in the process of analysing and evaluating rural development in the Baltic States. Firstly, despite the significant agricultural potential of rural areas (in Estonia, agricultural land occupies 1.2 million hectares, in Latvia — 2.5 million hectares (about 40 % of the country's territory), in Lithuania — 3.3 million hectares (more than 50 % of the territory), economic activity in these regions remains limited. One of the key problems is the low level of agricultural modernization (for example, in Latvia there are only 0.15—0.20 units of agricultural machinery per 1 hectare, in Lithuania — 0.18, in Estonia — 0.25), which indicates insufficient equipment for agricultural production, despite efforts to introduce innovations supported by European subsidies and programs [17]. Secondly, infrastructure projects do not always solve the problems of accessibility of education, healthcare and digital technologies, which hinders the improvement of the quality of life of rural residents [18]. Thirdly, the demographic crisis, expressed in the ageing of the population and the emigration of youth, increases the gap between urbanised and non-urbanised territories, which poses a threat to the sustainability of rural communities [19; 20]. Fourth, EU programmes provide significant resources for

[1] The study uses the concept of the 'Baltic Region' in its well-established modern international political understanding — the region around the Baltic Sea, formed by the countries that are members of the Council of the Baltic Sea States at the beginning of 2022 [9; 10].
[2] Swistek, G., Paul, M. 2023, Geopolitics in the Baltic Sea Region, *SWP Comment*, № 9, February, URL: https://www.swp-berlin.org/10.18449/2023C09/ (accessed 10.11.2024).

rural development, but the effectiveness of their development and application at the local level remains controversial due to bureaucratic barriers and a lack of coordination [21; 22]. And finally, rural areas play an important role in maintaining ecological balance, but also face challenges related to climate change, soil degradation and reduced biodiversity [23; 24]. In general, these contradictions require in-depth analysis in order to develop strategies that can ensure the harmonious and sustainable development of rural areas in the Baltic States.

The article aims to conduct a comprehensive assessment of the level of rural development in the Baltic States, examining their agricultural potential, socio — economic status and the impact of European programmes on rural modernisation. The study focuses on demographic changes, migration processes, the state of the labour market, as well as the impact of European policy on rural development in Latvia, Lithuania and Estonia.

To achieve this goal, the article outlines the following key aspects:

— Economic potential of rural areas of the Baltic States: analysis of natural and agricultural resources of Estonia, Latvia and Lithuania;

— Problems and challenges of rural areas: consideration of demographic changes such as depopulation, population ageing, migration, as well as problems with infrastructure and access to modern technologies;

— The impact of European support and programmes: an analysis of the effectiveness of using EU funds and other international resources for agricultural development and infrastructure modernisation;

— Prospects and recommendations: development of strategies and recommendations to stimulate rural growth, optimise policies aimed at improving the quality of life and sustainable rural development.

## Research methodology

Anticipating the results of the study, it is important to note that there are significant differences between the concepts of “rural” and “non-urbanised” territories, despite their intersection. Rural areas, including farmlands, farms and agro-industrial enterprises, are directly related to agricultural activities. Non-urbanised territories cover a wider range of lands, including conservation areas, forests, and ecotourism areas. The focus of this study is on rural areas, as they are the backbone of the agricultural sector. Their analysis provides a deeper understanding of the key economic, demographic, and infrastructural processes affecting agricultural development. A clear distinction of terms ensures the accuracy of the study and allows us to focus on the problems and prospects of rural areas in the Baltic States in the context of their sustainable development.

In recent decades, significant transformation processes have taken place in the Baltic States, which have led to the formation of unique national economic models reflecting the basic principles and features of the functioning of their economic systems [25] and serving as indicators of the ability to adapt to global, regional and internal changes [26]. The formation of such models was the result of the interaction of many factors: historical heritage, economic restructuring after se-

cession from the USSR, integration into the European and global economic space, as well as adaptation to the challenges of globalisation [27; 28]. In this regard, it is advisable to assess the level of development and the current state of rural areas of the Baltic States through the prism of their national economic models, since this approach allows taking into account the multilevel and multicomponent nature of both internal and external aspects affecting their development trends.

When analysing the economic models of the Baltic States, it should be understood that any economic model is a simplified representation of the main economic and political processes, which allows for a better understanding of their functioning under certain conditions [29—32]. Comparative monitoring of national economic models [33; 34] confirms that there are no universal approaches to macroeconomic regulation. Each country adapts its methods in response to specific internal and external factors [35; 36]. It is important to consider the economic models of the Baltic states as market systems, where the key aspects are market openness, integration into the international economy, as well as participation in the European Union, which has significantly influenced their economic development and adaptation to global trends [37; 38]. The Latvian model is focused on the openness of the economy with an emphasis on foreign trade and attracting foreign investment. The main sectors are transport, logistics and financial services. It makes the economy vulnerable to external shocks. Active integration into the European Union, including financing of infrastructure projects and innovations, has become an important part of the Latvian model. The Estonian model stands out as a digital economy that actively implements new information technologies and digital services. With a high degree of economic liberalisation, the country focuses on innovative development, providing leadership in electronic public services and digital technologies. In this model, government intervention plays an important role by supporting startups and digitalisation. The Lithuanian model is more balanced, combining market mechanisms with support for domestic production and industry. Lithuania is actively developing the agro-industrial complex, biotechnologies and pharmaceuticals, while using the EU infrastructure to strengthen regional ties and economic integration [39; 40].

Thus, being highly integrated into international markets, such small open socio-economic systems as rural areas of Latvia, Lithuania and Estonia are characterised by a close relationship between regional economic processes and global socio-economic, political and technological trends [41]. Despite their relatively small size and remoteness from large urban centres, rural areas are influenced by a wide range of factors that shape their socio-economic development model [42; 43]. In this regard, assessing the level of development and the current state of agriculture and rural populations in the Baltic States is important not only for understanding internal processes but also for determining their role in the implementation of the European regional development policy and their successful integration into the global economic system.

The methodology of this research, in addition to general scientific methods (analysis, synthesis, induction and deduction), as well as principles (objectivity, relevance, verifiability and historicism), includes a set of historical and economic methods that allow creating a holistic picture of the historical development and continuity of the socio-economic state of rural areas of Latvia, Lithuania and Estonia. The application of these approaches makes it possible to identify long-term trends and key points in the development of rural and remote regions of these countries. Additionally, the research uses an interdisciplinary methodological synthesis that allows for the integration of scientific approaches and techniques from various humanities disciplines, including political science, sociology, and economics. Statistical data from the Central Statistical Office of Latvia, the Department of Statistics of Lithuania, and Statistics of Estonia were used to assess the level of development and current state of agriculture and rural populations in the Baltic States.

## The results of the study and their discussion

Historically, the Baltic States, due to their location at the intersection of European and Eurasian economic and political interests, have played an important strategic role in the socio-economic and political space of Europe [44]. After gaining independence in 1991, Latvia, Lithuania and Estonia were able not only to integrate into the global economy but also to achieve impressive results in the transformation from a centrally planned economy to a market system. The rapid growth in the 2000s, characterised by significant amounts of foreign investment and the active development of key industries, allowed these countries to receive the unofficial name of the "Baltic tigers", demonstrating high and stable economic growth [45; 46].

However, as of 2024 (since the Baltic States joined the European Union in 2004), Eurostat statistics classify Latvia, Lithuania and Estonia as countries with a high degree of inequality and a small middle class.[1] Latvia is currently included in the group of nine low-income countries, while Lithuania and Estonia belong to the category of countries with an average level of material well-being.[2]. This limits their economic and social stability [47]. Despite the goal set out in the Treaty on the Functioning of the EU aimed at sustainable convergence of the economic parameters of the member States, the process of equalising the indicators of socio-economic development of these countries is still far from complete. The economies of the Baltic states are still largely subsidised, and the quality of life of the population has deteriorated significantly [48; 49]. Instead of a steady increase in well-being, there are high levels of social inequality, poverty, and limited access

[1] European macroeconomic policies amidst shifting priorities, 2024, *Benchmarking Working Europe 2024*, ETUI and ETUC.

[2] Special Eurobarometer 546. Social Europe. Eurobarometer report fieldwork, 2024, *European Commission*, URL: https://europa.eu/eurobarometer/surveys/detail/3187 (accessed 10.11.2024).

to social benefits [50]. To address these problems, the EU initiated the European Pillar of Social Rights program, designed to serve as a guideline for the development and implementation of national strategies aimed at reducing social inequality and creating a sustainable social system [51]. However, its implementation faces challenges related to the gaps in the levels of social and economic development of the member countries, limited resources and difficulties in coordinating national and European priorities.

In addition, the economic challenges of recent years, including the global financial crisis of 2008, the COVID-19 pandemic, and increased geopolitical tensions, have had a diverse impact on the economic development of the Baltic States, which is clearly demonstrated by the GDP figures of the three countries (Table 1). However, macroeconomic dynamics reflect not only the general state of national economies but also their ability to support the sustainable development of rural areas, which are an important part of the socio-economic structure of the region.

*Table 1*

**GDP indicators of the Baltic States, 2005—2024, as of January 1, 2025**

| Indicator | 2005 | 2010 | 2015 | 2020 | 2024 | Growth rate, 2024 to 2005, % |
|---|---|---|---|---|---|---|
| *Latvia* | | | | | | |
| The volume of GDP, million euros | 4.87 | 5.07 | 6.81 | 6.54 | 7.81 | 160.4 |
| GDP growth rate, % | 6.0 | – 10.7 | 4.5 | – 1.3 | 0.1 | 1.7 |
| GDP per capita, thousand euros | 10.5 | 11.0 | 13.8 | 15.3 | 16.9 | 160.9 |
| *Lithuania* | | | | | | |
| The volume of GDP in comparable prices, million euros | 9.06 | 9.06 | 11.1 | 13.5 | 14.8 | 163.4 |
| GDP growth rate, % | 5.5 | – 1.0 | 1.4 | 2.9 | 3.0 | 54.5 |
| GDP per capita, thousand euros | 9.77 | 1.11 | 14.3 | 17.2 | 18.2 | 186.3 |
| *Estonia* | | | | | | |
| The volume of GDP in comparable prices, million euros | 4.72 | 4.72 | 5.62 | 6.63 | 6.66 | 141.1 |
| GDP growth rate, % | 4.5 | – 1.7 | 1.0 | – 1.0 | – 2.2 | – 48.8 |
| GDP per capita, thousand euros | 14.6 | 14.6 | 17.4 | 20.1 | 20.2 | 121.7 |

Calculated based on the data Central Statistical Bureau of Latvia;[1] Statistics Lithuania;[2] Statistics Estonia.[3]

[1] Latvia — GDP: 1987—2023. Data, 2024—2025, forecast. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/latvia/gdp (accessed 11.11.2024).

[2] Lithuania — GDP: 1990—2023. Data, 2024—2025, forecast. 2024, URL: https://ru.tradingeconomics.com/lithuania/gdp, *Trading Economics*, URL: https://ru.tradingeconomics.com/lithuania/gdp (accessed 11.11.2024).

[3] Estonia — GDP, 1987—2023. Data, 2024—2025. forecast, 2024, URL: https://ru.tradingeconomics.com/estonia/gdp (accessed 11.11.2024).

A comparative analysis of the GDP dynamics of the Baltic States shows that Lithuania has the most stable economy, capable of recovering faster from crises, while Latvia and Estonia face significant challenges that slow down their economic development. Lithuania is showing the most stable and dynamic growth among the Baltic States. From 2005 to 2024, its GDP grew from 9.06 billion to 14.8 billion euros. GDP per capita has almost doubled, reaching 18.2 thousand euros. Lithuania's growth rates during the crisis years are particularly noteworthy. So, in 2024, an increase of 3.0 % was recorded, which indicates successful adaptation to external and internal challenges. Latvia also showed a significant increase in GDP (from 4.87 to 7.81 billion euros, an increase of 224.4 %). However, the country's economic development was accompanied by periods of significant instability. For example, the recession in 2020 (– 1.3 %) and low growth in 2024 (0.1 %) indicate structural problems and low investment activity. Estonia showed the most modest GDP growth among the Baltic States (from 4.72 billion euros in 2005 to 6.66 billion euros in 2024). Despite the high per capita GDP (20.2 thousand euros in 2024), the country's economy has been suffering from a prolonged recession in recent years. In 2024, the GDP growth rate was – 2.2 %, which is associated with a reduction in investment and private consumption.

Against the background of a slowdown in GDP growth and, in some cases, a decline, the cost-of-living crisis has had a severe impact on rural households, making many of them particularly vulnerable to economic shocks. Rising prices for basic goods and services (food, fuel, utilities, and housing) have increased the financial burden on families, especially members of the lower and middle classes, which in turn has exacerbated poverty, increased social stratification, and led to the marginalization of a significant portion of the population.[1]

It is important to pay attention to key economic indicators that play a central role in shaping the macroeconomic stability of the Baltic States (Table 2). This is especially relevant in the context of rural areas, where the macroeconomic situation can significantly affect access to finance, investment in infrastructure and agriculture, as well as opportunities for labour migration and employment.

*Table 2*

**Key economic indicators of the Baltic States, 2005—2024, as of January 1, 2025**

| Indicator | 2005 | 2010 | 2015 | 2020 | 2024 | Growth rate, 2024 to 2005, % |
|---|---|---|---|---|---|---|
| *Latvia* | | | | | | |
| Trade balance, million euros | – 150.2 | – 112.1 | – 122.5 | – 113.4 | 61.6 | – 41.0 |
| Exports, million euros | 268.9 | 380.3 | 801.2 | 1080.0 | 1670.0 | 621.0 |

[1] European macroeconomic policies amidst shifting priorities. 2024, *Benchmarking Working Europe 2024*, ETUI and ETUC, URL: https://www.etui.org/publications/benchmarking-working-europe-2024 (accessed 02.12.2024).

*The end of Table 2*

| Indicator | 2005 | 2010 | 2015 | 2020 | 2024 | Growth rate, 2024 to 2005, % |
|---|---|---|---|---|---|---|
| Imports, million euros | 419.2 | 492.4 | 923.7 | 1200.0 | 1600.0 | 381.6 |
| Foreign direct investment, million euros | 66.0 | – 4.0 | 90.0 | 78.00 | 203.0 | 307.5 |
| Industrial production index, % | 1.9 | 4.9 | – 2.8 | – 4.2 | – 2.7 | – 142.10 |
| The rate of inflation, % | 6.7 | – 3.3 | 0.4 | – 0.7 | 0.9 | 13.4 |
| *Lithuania* | | | | | | |
| Trade balance, million euros | – 92.7 | – 133.2 | – 172.0 | – 103.5 | – 273.9 | – 295.4 |
| Exports, million euros | 653.6 | 900.5 | 1530.0 | 2230.0 | 3120.0 | 477.3 |
| Imports, million euros | 746.3 | 1030.0 | 1710.0 | 2330.0 | 3390.0 | 454.2 |
| Foreign direct investment, million euros | 221.1 | 232.7 | 211.1 | 69.4 | 431.3 | 195.1 |
| Industrial production index, % | 4.9 | – 5.8 | – 2.0 | – 4.0 | 0.4 | 8.16 |
| The rate of inflation, % | 2.9 | 1.0 | – 1.5 | 3.0 | 0.7 | 24.1 |
| *Estonia* | | | | | | |
| Trade balance, million euros | – 91.0 | – 27.7 | – 47.3 | – 19.1 | – 264.6 | – 290.1 |
| Exports, million euros | 495.3 | 519.5 | 864.1 | 1150.0 | 1330.0 | 268.5 |
| Imports, million euros | 515.4 | 547.3 | 966.1 | 1170.0 | 1600.0 | 310.4 |
| Foreign direct investment, million euros | 920.0 | 272.2 | 230.8 | 498.6 | – 569.6 | – 61.9 |
| Industrial production index, % | 4.7 | 0.7 | – 0.8 | – 8.2 | – 10.2 | – 217.0 |
| The rate of inflation, % | 4.2 | – 0.7 | – 0.3 | 1.6 | 4.7 | 111.9 |

Calculated based on the data of the Central Statistical Bureau of Latvia;[1] Statistics Lithuania;[2] Statistics Estonia.[3]

The economic performance of the Baltic States reflects not only differences in the sustainability of their economic models but also the specific challenges these countries face in the context of global and regional economic changes. Lithuania demonstrates the most stable development. The export growth rate (+ 477.3 %) is evidence of the competitiveness of Lithuanian goods on international markets, which is associated with the development of key industries such as the food industry, electronics manufacturing and chemical products. The stability of consumer sentiment (+ 150.0 %) in Lithuania indicates a stable level of domestic demand, which stimulates economic activity. However, against the background of

[1] Latvia Indicators. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/latvia/ (accessed 11.11.2024).

[2] Lithuania Indicators. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/lithuania/ (accessed 11.11.2024).

[3] Estonia Indicators. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/estonia/ (accessed 11.11.2024).

the growth of foreign trade, a negative trade balance remains (– 295.4 %), which is caused by an increase in imports of goods for the development of infrastructure and production facilities. Latvia, in turn, demonstrates positive changes in the trade balance: the transition from a significant deficit (– 150.2 million euros in 2005) to a positive value (61.6 million euros in 2024) indicates significant efforts in optimising exports and imports. The growth of foreign direct investment (+ 307.5 %) shows an increase in the attractiveness of the country for foreign investors, which is associated with a favourable tax policy and integration into the eurozone. However, the low growth rate of the industrial production index (– 142.1 %) indicates the need to modernise the industrial base and stimulate innovation. Estonia, on the other hand, is facing a number of structural problems. The decrease in the inflow of foreign direct investment (– 61.9 %) was caused by uncertainty in the investment climate and competition from other countries in the region. The decrease in industrial production (– 217.0 %) reflects a decrease in production activity, which negatively affects overall economic growth. The trade deficit (– 290.1 %) remains a challenge, indicating the country's dependence on imported goods. However, exports show moderate growth (+ 268.5 %), which demonstrates the potential for expanding foreign markets, especially in high-tech industries.

Of course, the slowdown in economic growth inevitably led to a deterioration in the socio-economic situation, which manifested itself in a decrease in the birth rate, demographic decline, increased migration processes and a weakening of the stability of a number of key sectors of the economy. One of the most noticeable consequences is the steady decline in the rural population in the Baltic States, which is due to both natural demographic processes and external migration (Table 3).

*Table 3*

**Population in the Baltic States, 2000—2024, as of January 1, 2025, people**

| Indicator | 2005 | 2010 | 2020 | 2023 | 2024 | Growth rate, 2024 to 2000, % |
|---|---|---|---|---|---|---|
| *Latvia* | | | | | | |
| The entire population | 2 381 715 | 2 120 504 | 1 907 675 | 1 891 000 | 1 873 000 | 78.6 |
| Urban population | 1 619 566 | 1 463 148 | 1 293 197 | 1 315 000 | 1 307 000 | 80.7 |
| Rural population | 762 149 | 657 356 | 614 478 | 568 000 | 566 000 | 74.3 |
| *Lithuania* | | | | | | |
| The entire population | 3 355 220 | 3 329 039 | 2 794 300 | 2 860 002 | 2 851 853 | 84.9 |
| Urban population | 2 517 338 | 2 230 456 | 1 882 000 | 1 966 000 | 1 930 992 | 76.7 |
| Rural population | 1 184 629 | 1 098 582 | 912 300 | 894 002 | 920 861 | 77.7 |

*The end of Table 3*

| Indicator | 2005 | 2010 | 2020 | 2023 | 2024 | Growth rate, 2024 to 2000, % |
|---|---|---|---|---|---|---|
| *Estonia* | | | | | | |
| The entire population | 1 401 250 | 1 333 290 | 1 328 889 | 1 365 884 | 1 374 687 | 98.1 |
| Urban population | 952 850 | 919 970 | 900 365 | 928 773 | 899 574 | 94.4 |
| Rural population | 448 400 | 413 320 | 428 524 | 437 111 | 475 113 | 105.9 |

Calculated based on the data of the Central Statistical Bureau of Latvia;[1] Statistics Lithuania;[2] Statistics Estonia.[3]

In general, all three countries face demographic challenges, but problems related to depopulation and rural population decline are particularly pronounced in Latvia and Lithuania. The rural population of Latvia decreased by 25.7 % (from 762 thousand people in 2005 to 566 thousand in 2024), due to the deterioration of life in rural areas, where migration to cities and abroad is an urgent problem. In Lithuania, the rural population declined by 22.3 %, from 1.18 million in 2005 to 920,000 in 2024, primarily due to workforce outmigration and a shortage of employment opportunities. These factors have contributed to the continued outflow of residents to more urbanised areas and abroad.

Unlike other countries, Estonia shows a slight increase in the rural population (105.9 % of the 2005 level), which is due to the improvement of the economic situation in rural areas and the development of infrastructure.

Of course, the Baltic States' accession to the European Union has opened up new opportunities for their citizens in the European labour market, providing access to higher incomes and better living conditions in the developed EU countries (Norway, Ireland, Germany, Great Britain, and the Scandinavian countries). However, EU membership has also brought significant problems, primarily related to migration [52]. In recent years, these problems have acquired a political dimension and have become one of the most acute for the Baltic States. For example, Latvia and Lithuania have faced a high trend of emigration to the EU, where migrants from these countries account for a significant part of the emigration flow (Table 4).

[1] Latvia — GDP: 1987—2023. Data, 2024—2025, forecast. 2024, *Trading Economic*, URL: https://ru.tradingeconomics.com/latvia/gdp (accessed 11.11.2024).

[2] Lithuania — GDP: 1990—2023. Data, 2024—2025, forecast. 2024, URL: https://ru.tradingeconomics.com/lithuania/gdp, *Trading Economic*, URL: https://ru.tradingeconomics.com/lithuania/gdp (accessed 11.11.2024).

[3] Estonia — GDP, 1987—2023. Data, 2024—2025, forecast. 2024, URL: https://ru.tradingeconomics.com/estonia/gdp (accessed 11.11.2024).

*Table 4*

**Migration processes in the Baltic States, 2005—2024, as of January 1, 2025, people**

| Indicator | 2005 | 2010 | 2015 | 2020 | 2024 |
|---|---|---|---|---|---|
| *Latvia* | | | | | |
| Emigration | 17 643 | 39 651 | 20 119 | 13 953 | 11 600 |
| Immigration | 6691 | 4011 | 9479 | 3147 | 2415 |
| Net migration (balance) | – 10 952 | – 35 640 | – 10 640 | – 10 806 | – 9185 |
| *Lithuania* | | | | | |
| Emigration | 57 885 | 83 157 | 44 533 | 43 100 | 38 800 |
| Immigration | 6789 | 5213 | 22 130 | 20 800 | 22 000 |
| Net migration (balance) | – 51 096 | – 77 944 | – 22 403 | – 22 300 | – 16 000 |
| *Estonia* | | | | | |
| Emigration | 4610 | 5294 | 13 003 | 12 427 | 12 543 |
| Immigration | 1436 | 2810 | 15 413 | 16 209 | 26 399 |
| Net migration (balance) | – 3174 | – 2484 | 2410 | 3782 | 13 856 |

Calculated based on the data of the Central Statistical Bureau of Latvia;[1] Statistics Lithuania;[2] Statistics Estonia.[3]

Unlike Lithuania and Latvia, Estonia demonstrates a steady positive migration balance, increasing it from – 3174 in 2005 to + 5718 in 2024 due to an increase in immigration (from 1,436 to 20,209 people), and a relatively stable emigration rate (14,491 people in 2024). The country is actively developing the high-tech sector, which attracts qualified specialists. However, the massive outflow of the working-age population, especially young people aged 20—29, is a serious challenge for all Baltic States. Latvia experienced the highest loss in this age group, with a decline of 31 %, followed by Lithuania at 20 % and Estonia at 17 %.

The migration behaviour of the population, in turn, exacerbates the problem of ageing, since high levels of emigration contribute to a decrease in the proportion of young people. At the same time, a decrease in the birth rate and an increase in life expectancy in the studied countries lead to an increase in the number of elderly citizens. According to UN projections, by 2050, about 30 % of the population of Latvia, Lithuania and Estonia will be over 65 years old. Such a demographic shift poses a serious challenge to the social and pension systems of the Baltic States, which are already under pressure due to the decline in the number of eco-

[1] Latvia — GDP: 1987—2023. Data, 2024—2025, forecast. 2024, *Trading Economic*, URL: https://ru.tradingeconomics.com/latvia/gdp (accessed 11.11.2024).

[2] Lithuania — GDP: 1990—2023. Data, 2024—2025, forecast. 2024, URL: https://ru.tradingeconomics.com/lithuania/gdp, *Trading Economic*, URL: https://ru.tradingeconomics.com/lithuania/gdp (accessed 11.11.2024).

[3] Estonia — GDP, 1987—2023. Data, 2024—2025, forecast. 2024, URL: https://ru.tradingeconomics.com/estonia/gdp (accessed 11.11.2024).

nomically active people and migration processes. Nevertheless, the Governments of these countries have not yet made sufficient efforts to remedy the situation. For example, in Latvia, the program for the return of young professionals was discontinued, for which 72 thousand euros were allocated as part of the support for the re-emigration of educated youth. In Estonia, the budget of the Our People Integration and Migration Fund (MISA), aimed at facilitating the repatriation and re-emigration of compatriots, is only 80 thousand euros per year, which is not enough to solve the problem. In Lithuania, there are no state assistance programs for the return of compatriots at all, which increases the staff drain and perpetuates negative demographic trends.[1]

The outflow of labour in the Baltic States has had a noticeable impact on the labour market, especially in rural areas, where the labour situation is already particularly tense. The rural population of these countries, which is already experiencing demographic decline, has faced additional difficulties, as a large number of young people and qualified professionals are leaving their native territories in search of work in more developed regions of Europe.

In response to the challenge of bridging the gap in the socio-economic development of non-urbanized territories, the Baltic States are implementing a Common Agricultural Policy (CAP), which supports farm incomes, introduces measures regulating agricultural markets (First Pillar), and uses tools to positively influence rural areas (Second Pillar Pillar).[2]

Confirming the importance of rural areas for the development of the Baltic States, statistics show an increase in the added value of agriculture in all three countries, the main reason for which is a combination of several factors: higher production costs, increased productivity, lower costs and increased processing of agricultural products. However, it is worth noting that there are certain differences in the dynamics of other key indicators depending on the country (Table 5).

*Table 5*

**Key indicators of agriculture in the Baltic States, 2017—2024, as of January 1, 2025**

| Indicator | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, 2024 to 2017, % |
|---|---|---|---|---|---|---|---|---|---|
| *Latvia* | | | | | | | | | |
| The share of agriculture in GDP, % | 3.26 | 3.55 | 3.60 | 3.76 | 4.00 | 4.14 | 5.01 | 4.17 | 127.9 |
| Added value of agriculture, billion euros | 0.92 | 1.08 | 1.24 | 1.29 | 1.38 | 1.63 | 2.02 | 1.82 | 197.8 |

[1] Analytical portal RuBaltic. 2016, URL: http://www.rubaltic.ru/article/politika-i-obshchestvo/301216-itogiemigratsii-2016 (accessed 11.11.2024).

[2] The common agricultural policy (CAP) is about food, the environment and the countryside. 2024, URL: https://agriculture.ec.europa.eu/common-agricultural-policy_en (accessed 11.11.2024).

*The end of Table 5*

| Indicator | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, 2024 to 2017, % |
|---|---|---|---|---|---|---|---|---|---|
| Agricultural lands, % | 30.08 | 30.28 | 31.03 | 31.06 | 31.14 | 31.50 | 31.64 | 31.66 | 105.2 |
| Crop production index, % | 112.1 | 105.6 | 107.8 | 71.00 | 106.5 | 117.2 | 100.5 | 105.2 | 93.8 |
| Food production index, % | 107.2 | 104.0 | 106.1 | 83.60 | 104.8 | 110.7 | 101.4 | 103.9 | 96.9 |
| Livestock production index, % | 100.1 | 101.7 | 103.7 | 101.6 | 102.2 | 101.3 | 102.5 | 102.0 | 101.8 |
| *Lithuania* | | | | | | | | | |
| The share of agriculture in GDP, % | 3.11 | 3.51 | 2.88 | 3.10 | 3.51 | 3.40 | 3.97 | 2.99 | 96.1 |
| Added value of agriculture, billion euros | 1.34 | 1.68 | 1.55 | 1.70 | 2.00 | 2.27 | 2.82 | 2.32 | 173.1 |
| Agricultural lands, % | 47.13 | 47.98 | 47.16 | 46.86 | 47.05 | 47.51 | 46.99 | 46.92 | 99.5 |
| Crop production index, % | 108.6 | 100.3 | 102.9 | 76.20 | 94.50 | 117.7 | 99.30 | 105.1 | 96.7 |
| Food production index, % | 106.0 | 99.00 | 100.7 | 83.80 | 94.40 | 107.6 | 96.10 | 99.50 | 93.8 |
| Livestock production index, % | 102.0 | 97.10 | 97.50 | 95.00 | 94.60 | 92.60 | 91.40 | 91.20 | 89.4 |
| *Estonia* | | | | | | | | | |
| The share of agriculture in GDP, % | 2.11 | 2.39 | 2.09 | 2.31 | 2.00 | 1.97 | 2.49 | 2.17 | 102.8 |
| Added value of agriculture, billion euros | 0.51 | 0.64 | 0.64 | 0.72 | 0.63 | 0.73 | 0.95 | 0.89 | 174.5 |
| Agricultural lands, % | 22.41 | 22.84 | 23.07 | 22.97 | 23.04 | 23.12 | 23.04 | 23.09 | 103.0 |
| Crop production index, % | 122.8 | 81.30 | 103.7 | 71.10 | 120.3 | 122.4 | 101.9 | 119.0 | 96.9 |
| Food production index, % | 111.2 | 91.40 | 99.60 | 84.70 | 106.8 | 107.7 | 98.20 | 105.7 | 95.0 |
| Livestock production index, % | 101.6 | 99.80 | 96.10 | 95.80 | 95.60 | 95.60 | 95.00 | 94.60 | 93.1 |

Calculated based on the Business and Economic Data for 200 countries.[1]

[1] Latvia: The share of agriculture in GDP. 2023, *Global economy, world economy,* URL: https://ru.theglobaleconomy.com/Latvia/Share_of_agriculture (accessed 11.11.2024) ; Lithuania: The share of agriculture in GDP. 2023, *Global economy, world economy*, URL: https://ru.theglobaleconomy.com/Lithuania/Share_of_agriculture/ (accessed 11.11.2024) ; Estonia: Share of agriculture in GDP. 2023, *Global economy, world economy*, URL: https://ru.theglobaleconomy.com/Estonia/Share_of_agriculture/ (accessed 11.11.2024).

The highest growth in agricultural development is observed in Latvia. The share of agriculture in GDP increased from 3.26 to 4.17 % (+ 27.9 %), and the value added of agriculture almost doubled (+ 197.8 %), reflecting increased efficiency and possible improved market access. However, the low growth in the indices of crop production (– 6.2 %) and food (– 3.1 %) indicates the need for technological modernisation and stimulation of domestic production. Lithuania shows moderate growth in agricultural value added (+ 173.1 %), but the share of agriculture in GDP decreased to 2.99 % (– 3.9 %), indicating structural changes in the economy. There is a decrease in the production indices of crop production (– 3.3 %), food (– 6.2 %) and especially livestock (– 10.6 %), which is associated with problems in export markets. Estonia has the lowest share of agriculture in GDP (from 2.11 to 2.17 %, + 2.8 %), due to its lower dependence on the agricultural sector. However, the added value of agriculture increased by 74.5 %, reflecting the introduction of innovative approaches and higher productivity. Nevertheless, the reduction in the indices of food production (– 5.0 %) and animal husbandry (– 6.9 %) indicates the need for further diversification of the industry and active government support.

Currently, special attention is being paid to supporting rural areas through the mechanisms of two key financial instruments: the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD). Structurally, the expenditures of the Common Agricultural Policy (CAP) program look like this: about 70 % is allocated to direct support for farmers, which includes subsidies for production, ensuring income stability and compensating for risks associated with fluctuations in agricultural prices; about 5 % is allocated to market measures such as price stabilization and ensuring the competitiveness of the agro-industrial sector in in the context of global challenges; The remaining 25 % is used for rural development, including infrastructure projects, support for small rural enterprises, modernization of agricultural machinery and the introduction of sustainable environmental practices (Fig. 1).

It should be emphasized that within the framework of the CAP in recent years, considerable attention has been paid to the development of rural infrastructure, the preservation of ecological balance and the support of local communities. However, in the new planning period, the focus began to be on the EU's ''green course'', sustainable development goals and the promotion of innovative solutions for rural areas. These trends are reflected in the launch and support of initiatives such as Small Places Matter, Smart Rural 21, and the Digital Europe Programme, aimed at comprehensive modernisation of rural areas, including digitalization, and the development of environmentally friendly production., support for small farms and improvement of living standards in rural areas [53]. This approach demonstrates the EU's growing commitment to creating a balanced and sustainable rural development system in which traditional farming support measures are combined with the introduction of modern technologies and practices to enhance rural competitiveness in the context of global challenges.

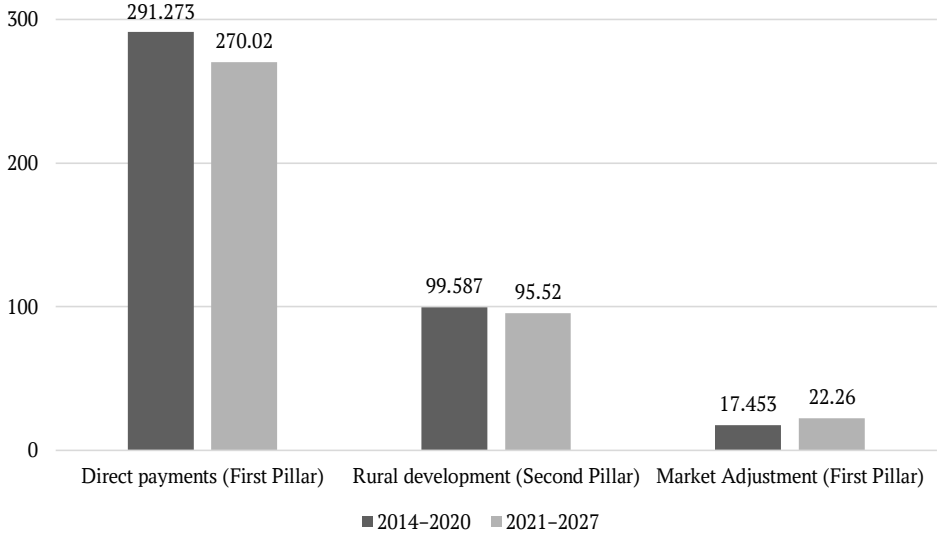


Fig. 1. CAP cost structure for rural support in the Baltic States, billion euros

Calculated based on Regulation (EU) № 1305/2013;[1] Regulation (EU) 2017/2393;[2] Regulation (EU) 2021/690.[3]

However, despite the active implementation of the CAP, the economic development of rural areas in the Baltic States is facing a number of challenges, such as a decline in the economically active population, high youth unemployment and labour shortages. At the same time, each country has its own characteristics (Tables 6—8).

*Table 6*

**The level of economic development of rural areas of Latvia, 2020—2024, as of January 1, 2025**

| Indicator | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, 2024 to 2020, % |
|---|---|---|---|---|---|---|
| Economically active population, thousand people | 430.1 | 453.0 | 469.0 | 386.2 | 389.9 | 90.6 |
| The level of economic activity, % | 70.0 | 67.0 | 68.1 | 68.0 | 68.9 | 98.4 |

[1] European Agricultural Fund for Rural Development (EAFRD). 2012, EUR-Lex, URL: https://eur-lex.europa.eu/EN/legal-content/summary/european-agricultural-fund-for-rural-development.html) (accessed 11.11.2024).
[2] Information (1782/EU XXVI.GP). 2017, *Parlament Österreich*, URL: https://www.parlament.gv.at/gegenstand/XXVI/EU/14659 (accessed 11.11.2024).
[3] Regulation — 2017/2393 — EN — EUR-Lex. 2017, EUR-Lex, URL: https://eur-lex.europa.eu/eli/reg/2017/2393 (accessed 11.11.2024).

*The end of Table 6*

| Indicator | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, 2024 to 2020, % |
|---|---|---|---|---|---|---|
| Employment rate of the population, % | 64.7 | 61.6 | 63.2 | 63.7 | 64.0 | 98.9 |
| Unemployed, thousand people | 58.8 | 72.6 | 62.3 | 55.3 | 51.2 | 87.1 |
| Unemployment rate, % | 7.6 | 8.1 | 7.3 | 6.4 | 7.2 | 94.7 |
| Youth unemployment rate, % | 13.4 | 14.7 | 11.2 | 15.2 | 11.1 | 82.8 |
| The need for employees, stated by employers, thousand people | 18.5 | 21.5 | 27.9 | 23.6 | 24.2 | 130.8 |
| Vacancy rate, % | 2.1 | 2.4 | 3.2 | 2.7 | 2.8 | 133.3 |
| Labor productivity, % | 110.4 | 120.6 | 121.5 | 118.4 | 119.0 | 107.7 |

Calculated based on the Eurostat data.[1]

*Table 7*

**The level of economic development of rural areas of Lithuania, 2020—2024, as of January 1, 2025**

| Indicator | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, 2024 to 2020, % |
|---|---|---|---|---|---|---|
| Economically active population, thousand people | 574.7 | 550.0 | 580.0 | 556.1 | 581.1 | 101.1 |
| The level of economic activity, % | 63.0 | 61.7 | 62.1 | 62.2 | 63.1 | 100.2 |
| Employment rate of the population, % | 73.0 | 71.4 | 72.6 | 71.5 | 72.2 | 98.9 |
| Unemployed, thousand people | 157.8 | 282.0 | 177.3 | 160.8 | 165.8 | 105.1 |
| Unemployment rate, % | 9.2 | 16.4 | 10.2 | 9.2 | 9.3 | 101.1 |
| Youth unemployment rate, % | 15.2 | 15.5 | 12.2 | 12.7 | 16.2 | 106.6 |
| The need for employees, stated by employers, thousand people | 15.0 | 21.0 | 26.9 | 26.5 | 27.4 | 182.6 |
| Vacancy rate, % | 1.1 | 1.6 | 2.0 | 1.9 | 2.0 | 181.8 |
| Labor productivity, % | 118.5 | 125.2 | 125.1 | 120.8 | 119.9 | 101.2 |

Calculated based on the Eurostat data.[2]

[1] Latvia Indicators. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/latvia (accessed 11.11.2024).

[2] Lithuania Indicators. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/lithuania/ (accessed 11.11.2024).

*Table 8*

**The level of economic development of rural areas in Estonia, 2020—2024, as of January 1, 2025**

| Indicator | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, 2024 to 2020, % |
|---|---|---|---|---|---|---|
| Economically active population, thousand people | 307.2 | 305.2 | 316.9 | 320.4 | 352.5 | 114.7 |
| The level of economic activity, % | 71.7 | 70.9 | 73.1 | 73.3 | 74.2 | 104.4 |
| Employment rate of the population, % | 68.1 | 65.9 | 69.0 | 69.4 | 68.4 | 100.4 |
| Unemployed, thousand people | 36.6 | 56.6 | 45.3 | 54.3 | 55.6 | 151.9 |
| Unemployment rate, % | 5.0 | 7.1 | 5.5 | 5.3 | 7.8 | 156.0 |
| Youth unemployment rate, % | 9.5 | 17.9 | 19.9 | 15.9 | 17.2 | 181.1 |
| The need for employees, stated by employers, thousand people | 3.6 | 3.4 | 6.8 | 4.1 | 3.3 | 91.6 |
| Vacancy rate, % | 1.4 | 1.5 | 2.1 | 1.9 | 1.6 | 114.3 |
| Labour productivity, % | 119.3 | 127.0 | 126.5 | 115.4 | 115.8 | 97.1 |

Calculated based on the data of Statistics Estonia.[1]

Comparative monitoring of indicators of rural economic development shows that in Latvia, despite stable employment and productivity growth, problems with unemployment, especially among young people, and a shortage of jobs remain relevant. The need for labour in rural areas of Latvia increased by 30.8 %, from 18.5 thousand people in 2020 to 24.2 thousand people in 2024, indicating a growing demand for labour. Nevertheless, the unemployment rate in Latvia decreased from 7.6 % in 2020. up to 7.2 % in 2024, which can be interpreted as a slight improvement in the labour market. However, despite the overall decline in the unemployment rate, the Latvian economy continues to face the challenge of high youth unemployment. Although it fell from 13.4 % in 2020 to 11.1 % in 2024, it remains a significant concern. At the same time, the employment rate in Latvia is relatively stable (64.0 % in 2024 compared to 64.7 % in 2020), which indicates that the employment of the population in rural areas does not experience sharp fluctuations, but continues to decline gradually in the context of labor migration and a decrease in the number of economically active population.

Lithuania, despite the increased need for labour, is facing high unemployment. In 2020-2024, the need for workers increased by 82.6 %, from 15 thousand people to 27.4 thousand people. However, the unemployment rate remained significant, ranging from 9.2 % in 2020 to 9.3 % in 2024, reflecting the problem of underemployment with increasing demand for labour resources. Youth unemployment is also a serious problem, having increased from 15.2 % in 2020 to 16.2 % in 2024.

[1] Estonia — data — economic indicators. 2024, *Trading Economics*, URL: https://ru.tradingeconomics.com/estonia/ (accessed 11.11.2024).

A decrease in the employment rate from 73.0 % in 2020 to 72.2 % in 2024. indicates difficulties in finding employment for the rural population. Despite the increase in labour productivity from 118.5 % to 119.9 %, the labour market remains tense, which indicates the difficulty of combining the growing need for workers with the actual provision of jobs for all categories of the population, especially for young people.

Unlike Lithuania and Latvia, Estonia shows the greatest growth in the economic activity of the rural population, increasing it from 71.7 % in 2020 to 74.2 % in 2024 (an increase of 104.4 %). However, the employment rate remained relatively stable (falling from 68.1 % in 2020 to 68.4 % in 2024), indicating some difficulty in creating new jobs, despite growing economic activity. The demand for labour increased, but its dynamics were less pronounced than in other Baltic countries. For example, the need for employees in 2024 was 3.3 thousand. people, which is less than in previous years, and indicates problems with the supply of jobs in rural areas. At the same time, the youth unemployment rate increased from 9.5 % in 2020 to 17.2 % in 2024 (an increase of 81.1 %), indicating serious problems with the employment of young people in rural areas.

It is important to emphasise that rural areas of the Baltic States have historically been dependent on the agricultural sector, small and medium-sized businesses, as well as rural tourism. However, with the decline in the number of able-bodied people and the massive outflow of young people, all these industries faced a shortage of labour. Employers in rural areas, whether farmers or small business owners, are increasingly forced to seek workers from other countries or shut down their businesses due to labour shortages. In addition, schools, shops, and medical facilities are closing in rural areas due to migration, which worsens the quality of life on the periphery and makes rural areas less attractive to the remaining residents. In turn, this creates a vicious circle where population decline leads to lower demand for goods and services, which increases economic stagnation in the regions. As a result, the outflow of labour from rural areas of the Baltic States leads to a deepening of social and economic depopulation in these areas, which further increases the gap between urban and rural areas and hinders the sustainable development of the economy as a whole. In general, all three countries face a shortage of rural labour, which poses challenges to the economic development and social stability of non-urbanised territories.

The monitoring allows us to identify both general and specific features of the socio-economic development of rural areas of the Baltic States, which reflects both the similarity of their trends due to historical and geographical factors, as well as features related to differences in economic policies, structural priorities and the level of integration into European and global processes (Table 9).

*Table 9*

**Trends in the socio-economic development of rural areas in the Baltic States**

| Category | Common features | Specific features |
|---|---|---|
| Agriculture and natural resources | Important role of agriculture in the economy. Sustainable use of agricultural land | Latvia: high share of agriculture in GDP and steady growth of value added. Lithuania: balanced development of the agro-industrial sector with a focus on biotechnology. Estonia: smaller share of agriculture, focus on digitalization |
| Demographics | Depopulation due to migration and aging of the population. Migration of young people to cities and abroad. Lower demand and higher infrastructure costs. Demographic losses are offset by innovation, digitalization, and infrastructure modernisation | Latvia: there is a more pronounced migration of young people to other EU countries. Lithuania: moderate migration rates due to government support for young families. Estonia: rural population growth is linked to the improvement of the economic situation in rural areas and the development of infrastructure |
| EU Support (CAP) | Active use of CAP (EAGF, EAFRD) funds to support farmers and modernise infrastructure. Ind creasing the competitiveness of rural areas | Latvia: significant support for export-oriented agriculture. Lithuania: the use of EU funds for agro-industrial development, the development of agricultural processing. Estonia: implementation of digitalisation and innovation programs within the framework of Smart Rural 21 |
| Environmental focus | Active implementation of EU Green Deal initiatives. Focus on biodiversity, sustainable use of resources and renewable energy sources | Latvia: an increase in the share of environmentally friendly practices in crop production. Lithuania: integration of environmentally friendly technologies into the agro-industrial sector, development of renewable energy infrastructure. Estonia: innovations within the framework of Smart Rural 21, monitoring and management of environmental projects |

Thus, the identified trends confirm that, despite the common challenges and strategic directions of rural development in the Baltic States, each of them demonstrates unique approaches and priorities determined by specific national

characteristics, the availability of resources and the effectiveness of using European support. In all Baltic countries, rural development relies on innovation, environmental initiatives, and infrastructure modernisation. In particular, Latvia focuses on bioenergy and digital solutions in agriculture. Precision farming technologies and digital solutions in the agricultural sector (using drones, satellite data and IoT devices), as well as projects on the use of biogas and organic fertilizers, are actively developing in the country. European programs fund initiatives to expand Internet access in rural areas, which contributes to the development of e-commerce and remote employment. Lithuania is focused on environmental sustainability and the development of smart villages. Thanks to EU subsidies, the country is implementing programs for the transition of farmers to organic agriculture and the introduction of artificial intelligence technologies for soil monitoring. In addition, digital services are being created for rural residents to improve access to medical, educational, and administrative services. Estonia is a leader in the digitalisation of agriculture and the introduction of automated solutions. Farms are actively using robotic technologies, drones, and artificial intelligence-based agricultural enterprise management systems. The Government is also investing in the development of renewable energy sources such as solar and wind power plants, which contributes to the creation of energy-efficient rural areas.

In the medium term, the socio-economic development of rural areas in the Baltic States should take into account significant changes in the global and regional economic environment within the framework of the ATS policy, caused by the structural and technological transformation of national economies. In addition, the Baltic States are forced to adapt their socio-economic strategies in the face of changing geopolitical and geo-economic realities. Such changes affect not only foreign trade but also the internal economic structure of rural areas. For example, increasing uncertainty in international markets, changes in EU policy, as well as the increasing impact of external economic sanctions and trade barriers, are forcing countries to look for new markets and develop alternative export-oriented agricultural products. In such conditions, for the effective development of rural areas, it is necessary to develop individual strategies that can take into account local features, trends in technological change and external economic challenges. Local authorities should adapt national strategies, coordinate programs and support infrastructure, businesses should innovate and create jobs, scientific and educational institutions should develop new technologies and train specialists, European foundations should provide financing and support for projects, and local communities should be involved in decision — making and implementation of initiatives. The joint efforts of these entities will ensure the sustainable development of rural areas, which, in turn, will help prevent

migration from rural areas to more urbanised regions. The main promising areas of socio-economic development of rural areas of the Baltic States are shown in Table 8.

*Table 8*

**Promising directions of socio-economic development in rural areas of the Baltic States**

| Direction | Characteristic | Result | Effect |
|---|---|---|---|
| Development of rural entrepreneurship | Creating conditions for the growth and support of small and medium-sized enterprises, and the introduction of new business models | Increase in the number of jobs, stimulating the local economy | Decrease in unemployment, increase in local economic activity |
| Digitalisation of rural areas | Development of digital platforms and Internet services for rural populations | Access to digital services for residents, improved communication and interaction | Increase in the availability of educational and medical services, improving rural life |
| Development of the green economy and eco-technologies | The introduction of innovative, environmentally friendly technologies in agriculture and production | Sustainable development, creation of ''green'' jobs | Increase in the sustainability of the economy, attracting investments in environmental projects |
| Attracting investments to rural areas | Creation of infrastructure to attract investors to rural areas, and improvement of business conditions | Development of new economic sectors in rural areas | Sustained economic growth, reduced migration to major cities, and improved quality of life |
| Sustainable development of agrotourism | Development of tourism based on natural and cultural resources, integration of rural areas into the tourism industry | Increased attractiveness of rural areas for tourists | The growth of tourist attractiveness and the development of related industries (hotel business, trade) |
| Infrastructure modernisation | Development of transport and social infrastructure: roads, communications, schools, hospitals | Improved living and working conditions in rural areas | Reduction in migration to cities, improving the quality of life in rural areas |
| Developing sustainable supply chains | Creation of local and regional supply chains for agriculture and manufacturing industries | Reduced dependence on external supplies, increasing local production | Resilience to external economic and political risks, strengthening local markets |
| Social support for the population | Programmes aimed at improving social support, healthcare and education in rural areas | Improved quality of life and education in rural areas | Elimination of social inequality, improving the level of education and healthcare |

In general, the implementation of these areas will strengthen the sustainability and competitiveness of rural areas in the Baltic States, ensuring their integration into the EU's pan-European sustainable development and green policies. An effective combination of traditional and innovative industries, investments in infrastructure and business support will contribute to the sustainable development of rural areas and increase their competitiveness.

## Conclusion

The research showed that, despite many external and internal challenges, rural areas of the Baltic States have significant potential for sustainable development and improving the quality of life of local communities. Although EU resources are actively involved in the development of agriculture, their impact on the labour market and the unemployment rate remains ambiguous. Nevertheless, financing agriculture contributes to its modernisation, which in the long term can have a positive impact on the rural economy. Special attention is paid to such aspects as the introduction of innovative technologies, support for environmental initiatives and infrastructure development, which contributes not only to improving living conditions in rural areas but also to strengthening their positions in international markets. Digitalisation programmes, sustainable agriculture, and the creation of conditions for social inclusion and human capital growth are the most important development vectors that contribute to reducing social and economic instability in these territories.

However, despite the positive trends, it is necessary to take into account existing problems, such as low investment in infrastructure and insufficient access of rural populations to modern technologies and services, which requires further work to optimize policies aimed at developing non-urbanised territories in general, with an emphasis on their integration into common European processes. For example, Estonia is actively developing an initiative to improve digital accessibility in rural areas, which allows local authorities to create ''smart'' villages and improve the quality of services provided. In Latvia and Lithuania, the Ministries of Economy, Agriculture and Regional Development are developing national programs to improve infrastructure and develop agriculture, including the use of European subsidies for infrastructure modernisation and the introduction of innovative technologies. It is also important to continue working to reduce inequality and ensure equal opportunities for all segments of the population, which will become the basis for their sustainable and harmonious development. In addition, strategies for the socio-economic development of non-urbanised territories should take into account new challenges associated with changes in the external economic situation, sanctions, and increased economic mosaic, which will require flexibility in decision-making at both the regional and national levels.

The prospects of the study are to further analyse and develop flexible strategies aimed at reducing social and economic inequality in rural areas, which will become the basis for sustainable and harmonious development of the non-urbanised territories of the Baltic States. It is important to take into account the impact of global changes, which requires adaptability at all levels of government, from local and regional authorities to the national level. It is also of interest to evaluate the effectiveness of government support programmes aimed at sustainable rural development. Equally important is the study of issues of social justice, equality and accessibility of social services, which also has a significant impact on the sustainability of the development of non-urbanised territories in general.

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# STATE OF AUTOMOBILE TRANSPORT DEVELOPMENT OF LATVIAN TERRITORIES IN THE CONTEXT OF SPATIAL INEQUALITY



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*This study is dedicated to the analysis of the state of automobile transport development of Latvian territories within the broader context of spatial inequality regarding economic productivity and environmental sustainability. The object of analysis comprises 43 Latvian municipalities, examined using statistical and fiscal data from 2022—2023. Given the country's pronounced monocentric structure and population density asymmetries, correlation analysis and two-step hierarchical cluster analysis were employed to typologise territories based on characteristics of automobile transport infrastructure, economic indicators, and ecological risks. As a result, five stable territorial types were identified, displaying significant differences in levels of automobile transport provision, integration into the national economic space, and environmental load. Central cities generally benefit from concentrated investment and denser transport networks, while peripheral areas are characterised by limited infrastructure access and less favourable environmental conditions. A notable exception is Ventspils, which — despite its peripheral geographical position — was classified as a central-type territory owing to its infrastructure and economic attributes. The study concludes that a differentiated transport policy is essential — one that accounts for the unique characteristics of different territories and seeks to mitigate the effects of the center-periphery divide. The proposed empirical model provides a basis for formulating territorially sensitive strategies to promote the development of automobile transport, while concurrently aligning with sustainable development goals.*

**Keywords:**
state of automobile transport development, spatial inequality, population density, economic productivity, environmental sustainability, center-periphery, Latvia

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## Introduction

The key concepts addressed by the authors in this study include the state of transport development within a given territory [1; 2], with particular emphasis on automobile transport development; spatial inequality [3; 4] in relation to economic productivity [5; 6] and ecological sustainability [7]; and broader issues of environmental sustainability [8]. Attempts to conceptualise and empirically interpret these notions were undertaken in previous studies by one of the authors of this article [9—11], though without focusing on Latvia's state of transport development in the context of spatial inequality regarding economic productivity and environmental sustainability. Nevertheless, this specific context is especially relevant for Latvia today. For instance, Mauris, an economist at the Bank of Latvia, emphasises that in recent years, several sectors of the Latvian economy have grown rather rapidly, while the transport sector has been one of the slowest. The gradual decline in the transit sector has significantly undermined the role of transport in the Latvian economy.[1]

Furthermore, the transport sector is considered a major polluter, as it accounts for a significant share of greenhouse gas (GHG) emissions [12; 13]. In Latvia, the agricultural and transport sectors contribute the highest per capita GHG emissions.[2] Latvia is among the EU countries with the oldest vehicle fleet,[3] a fact often cited as a reason for the high volume of transport-related GHG emissions in the country.[4] According to OECD experts, renewing Latvia's vehicle fleet requires innovative financial solutions to increase the accessibility of new transport vehicles [14]. Paula, an economist at the Bank of Latvia, notes that Latvia is a catching-up economy: income levels are low, the number of vehicles is relatively small, and the overall volume of GHG emissions is not particularly high. In this context, the fact that environmental goals apply to everyone highlights the costs of comparison — when trying to 'catch up' with countries with a higher standard of living, the desired prospects for growth often conflict with the levels of phy-

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[2] Paula, D. 2021, Strengthening the Green Deal in Latvia: what could we expect from electrical mobility?, in: *Macroeconomics,* 20/04, URL: https://www.macroeconomics.lv/raksti/strengthening-green-deal-latvia-what-could-we-expect-electrical-mobility (accessed 04.11.2024).

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sical and material resource consumption. At the same time, Latvia produces less added value per unit of GHG emissions compared to other EU countries, especially in the agricultural and transport sectors.[1]

When analyzing the state of automobile transport development of Latvian territories in the context of spatial inequality regarding economic productivity and environmental sustainability, it is essential to consider one important characteristic — namely, the monocentric nature of the spatial distribution of population density in Latvia [15; 16], which has a significant impact on the state of automobile transport development of the country's territory. In Latvia, the population density is very high in the capital and its surroundings (and continues to grow) compared to other regions, especially those located near the national border.[2] For the state of automobile transport development of Latvian territories, it is particularly important that practically uninhabited areas (1—3 inhabitants per $km^2$) are located not only near the borders with Russia and Belarus (where the possibilities for cross-border automobile transportation and economic cooperation have been almost entirely eliminated due to current geopolitical conditions), but also along the borders with Lithuania and Estonia (EU countries), as well as along the Baltic Sea coast. Almost the entire Latvian economy (including the transport sector and labour force) is concentrated around the capital, and the distance to Riga becomes the main determinant of Latvia's transport development, shaping the economic productivity and environmental sustainability of its territories.

The aim of this study is to analyse the state of automobile transport development of Latvian territories within the broader context of spatial inequality regarding economic productivity and environmental sustainability. The research also seeks to examine how the specific spatial distribution of population density in Latvia affects the state of automobile transport development — particularly the pronounced concentration of residents in the capital and its surroundings, and the low population density (in rural areas, near-uninhabited conditions) in territories near the borders with neighboring countries, including EU member states.

## Literature review and a brief analysis

The literature review and brief analysis in this study aim to provide a foundation for the further conceptualisation and empirical interpretation of the key concepts used by the authors: the state of transport (specifically automobile trans-

[1] Paula, D. 2021, Strengthening the Green Deal in Latvia: what could we expect from electrical mobility?, in: *Macroeconomics*, 20/04, URL: https://www.macroeconomics.lv/raksti/strengthening-green-deal-latvia-what-could-we-expect-electrical-mobility (accessed 04.11.2024).

[2] Central Statistical Bureau (Latvia), IRD062: Usually resident population density in regions, cities and towns, municipalities, and rural territories, *Statistical Database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__POP__IR__IRD/IRD062/ (accessed 04.11.2024).

port) development of a territory, spatial inequality regarding economic productivity and environmental sustainability. Furthermore, the literature review focuses on the main task of identifying gaps in the research on the state of automobile transport development in the context of spatial inequality and substantiating the methodology for further empirical investigation.

A significant contribution to the development of the methodology for assessing the state of transport development of a territory was made by the approach [9], in which the state of transport development is presented as a multi-component phenomenon encompassing the level of transportisation,[1] the degree of internationalisation of the transport system, the quality of transport infrastructure, and the efficiency of transport services. As part of the study [9], an integrated Territory Transport Development Index (TTDI) was developed and tested using the example of EU countries. Its advantage lies in its ability to combine various quantitative and qualitative indicators — from road and inland waterway density to assessments of port infrastructure quality and the efficiency of rail transport — into a unified comparative scale [9]. Particularly valuable in the context of spatial analysis is the index's ability to identify not only traditional 'centres' of transport activity but also cases of functional mismatch with territorial location, which highlights the relevance of a typological approach based not on geographic proximity but on systemic characteristics.

A study [10] holds particular significance for developing a deeper methodology of spatial analysis of the state of transport development of a territory, as it examines the interrelations between the development of transport infrastructure and the level of territorial production. The authors identify two levels of interpreting the state of transport development — the classical (infrastructure of roads, ports, aviation) and the innovative (logistics and digital services). The results demonstrate the stability of typologies: the most developed EU countries consistently show high values across all indices, while Latvia shows consistently low ones. An important contribution of the study [10] is the identification of a reverse causal relationship: developed infrastructure becomes a determinant of production growth, rather than its consequence. This study also emphasises the need to consider not only economic and logistical, but also environmental and institutional factors when assessing territorial development — a point especially relevant for small and remote regions with limited access to centralised investment and administrative resources.

A significant contribution to the study of the relationship between transport infrastructure and economic development at the subnational level in Latvia was made by analysis [11], which focused on municipal budget expenditures on transport and production in the context of increasing local economic activity. Study

[1] This refers to the density of transport routes per 1 $km^2$ of territory; the term is chosen by analogy with terms like "electrification" and "gasification" and differs in meaning from the term "transportation" [1; 2].

[11] disproved the initial hypothesis that funding priorities are determined by the current level of economic development: it turned out that municipal budget priorities depend more on geographic or geoeconomic location than on the internal state of the economy. In Latvia, there is a stable clustering of municipalities based on the dominant type of expenditure, with a growing trend toward "transport-production" restructuring observed in 2022, likely related to the geopolitical situation in Eastern Europe.

Of particular interest to this study is the work dedicated to South Asian countries [17], which demonstrates that population density has a significant impact on the relationship between the state of automobile transport infrastructure, the extent of the road network, the level of energy provision, and quality of life. In conditions of high population density, the growth of automobile transport infrastructure without adequate development of public transport leads to a deterioration of environmental and social conditions, increased pollution, and traffic congestion. Study [17] argues that transport policy planning must take into account not only the availability of roads and energy supply but also the functional integration with the settlement structure, including the development of accessible and environmentally friendly public transport. These conclusions are also relevant to the Latvian context, where a high concentration of population in the capital region is observed, along with the need to shift toward functionally oriented transport development strategies.

Contemporary studies [18; 19] emphasise the dual nature of the impact of the state of automobile transport development on the environmental sustainability of territories. For example, an analysis of ten countries transitioning to green energy [18] found that investments in environmentally friendly road transport contribute to reducing the ecological footprint and, consequently, to lowering the level of environmental degradation. The impact of green automobile transport is evident both in the direct reduction of greenhouse gas emissions and in the increased energy efficiency of urban mobility, while factors such as institutional quality, innovation activity, and domestic investment also help improve the ecological balance. However, urbanisation, on the contrary, increases pressure on the environment, requiring a comprehensive policy to align growth rates with environmental constraints [18]. At the same time, a study based on the Hainan Province in China [19] shows that the impact of transport development depends on the nature of land use changes: improving land use efficiency can mitigate negative effects, whereas intensive development of new areas, on the contrary, leads to increased pollution [19]. Thus, the sustainable effect of transport investments is determined not only by their scale but also by the nature of territorial policy.

Returning to the economic aspects of the state of automobile transport development in the Baltic region, it should be emphasised that virtually all modern studies confirm a direct relationship between the state of transport infrastructure

and macroeconomic dynamics. For instance, study [20] argues that investments in Latvian transport infrastructure contribute not only to GDP growth but also to the intensification of foreign trade, including export-import relations with Poland and other EU countries. Analysis [21] shows that the effectiveness of transport policy largely depends on the state's ability to establish sustainable mechanisms for investment decision-making under conditions of limited budgetary resources. At the same time, high-quality infrastructure promotes entrepreneurial activity, increases employment, and enhances the competitiveness of the economy. Study [22] adds to this picture by modeling the contribution of the transport and logistics sector to Latvia's economic development: the authors record a significant share of added value (9.2 %) and a strong correlation between freight turnover fluctuations and GDP dynamics, emphasising the role of Latvia as a regional transit hub. Finally, study [23] highlights that the sustainable development of the Lithuanian transport sector has a multiplier effect on the economies of neighbouring countries, including Latvia, confirming the need to consider regional interconnections when formulating national transport strategies. All these studies underline that road transport infrastructure serves not merely as a logistical resource but as a strategic instrument of spatial economic development.

The OECD study on the climate impact of transport investments in Latvia [14] proposes a more differentiated strategy (taking spatial inequality into account) for transitioning from car-based transport to more sustainable forms of public transportation. This includes investments in expanding public transport infrastructure (such as railways) and improving urban transport systems (such as trams and trolleybuses), particularly in the capital region, where road congestion and emissions are significant. For peripheral areas with lower population density, OECD experts recommend focusing on investments that enhance the connectivity and efficiency of existing transport infrastructure [14]. In turn, for territories with the lowest population density, the experts emphasise the need to develop transport policies that reflect local needs (for example, promoting car-sharing services) [14]. These recommendations aim to improve transport development across regions while simultaneously supporting economic growth and environmental sustainability, both in the capital and in Latvian peripheral territories.

In this context, it is appropriate to refer to the theoretical 'centre—periphery' model, widely used in academic literature on spatial inequality [24; 25]. It describes a structure in which central regions (in this case, Riga and the surrounding areas) concentrate resources, infrastructure, and economic activity, while peripheral areas are characterised by lagging behind in key indicators. At the same time, uneven territorial development is not a result of backwardness or a lack of resources but is shaped through structural dependency, both in terms of external economic relations and institutional factors [24].

Empirical confirmation of the applicability of the 'centre—periphery' model in transport research is provided by an analysis of the connectivity of rural settlements in the Kaliningrad region [25]. The authors note that insufficient transport connectivity contributes to the deepening of peripheral status, reduces access to social and economic services, and limits the development potential of remote areas. Study [25] shows that investments in automobile transport infrastructure aimed at overcoming isolation and restoring connections with the centre serve not only as a transport measure but also as a socio-economic tool for reducing territorial inequality. Thus, the 'centre—periphery' concept can serve not only as a theoretical framework but also as an analytical tool for interpreting the differences observed in the road transport development of Latvian territories.

Studies on the transport infrastructure of the Kaliningrad region [26—28] demonstrate a systemic interrelation between its geopolitical position, economic resilience, and logistical connectivity. The region is considered a unique semi-exclave of Russia, isolated from the country's main territory while being in close proximity to industrially developed European states, which defines its dual economic-geographical role [26]. Research [27; 28] emphasises that weak transport connectivity and insufficient density of ground infrastructure limit the region's economic potential and increase its vulnerability under sanction pressure. Significant disparities have been identified among federal, regional, and local roads, which require reconstruction and expansion despite the relatively high proportion of paved roads. Special attention is given to the role of the special economic zone as an institutional mechanism of adaptation: it provides partial compensation for the region's isolation and stimulates the creation of additional transport and logistics potential in the territory [26].

Summarising the results of the reviewed theoretical and empirical studies, it can be concluded that the state of transport development of territories is a multi-level and multifactorial phenomenon that exerts a complex influence on the economic productivity and environmental sustainability of regions. The monocentric population structure of Latvia, the persistent dominance of the capital region, and the significant disparity in access to transport infrastructure intensify spatial inequality, which necessitates a more nuanced and typologized analysis. The approaches presented in the literature, along with the identified interrelations between transport characteristics, population density, and economic-environmental indicators, provide a foundation for the empirical validation of the systemic model proposed in this study. This model will, in turn, serve as the basis for formalising a methodology for the analysis of the territories of Latvian municipalities.

## Conceptual framework and research methodology

Based on the results of the literature review and brief analysis, we propose dividing Latvia into three distinct (unequal) types of territories for further conceptualization and definition of the notion of the state of transport development (separately for each type of territory in Latvia) in the context of spatial inequality regarding economic productivity and environmental sustainability. The object of this study is the territories of Latvian municipalities. The administrative division of Latvia into municipal territories (36 counties and 7 state-level cities not included in the counties) was implemented on July 1, 2021, in accordance with the Law of the Republic of Latvia "On Administrative Territories and Populated Areas".[1] All Latvian municipalities — both counties and state-level cities — are included in the sample of this study, which ultimately consists of 43 entities and coincides with the total population (overall number) of Latvian municipalities. This relatively small number of entities can be analysed using statistical methods [29], though special attention must be paid to the statistical significance of the obtained results.

The systemic analysis of the object and subject of the study begins with the forces (processes) that influence Latvian municipalities, and vice versa. These forces include, on one hand, traditional practices and established expectations regarding the environment and economic productivity, and on the other hand, innovative practices and new demands for environmental sustainability and economic performance. As a result of this mutual influence, it is theoretically possible to identify three types of territories in Latvia in the context of spatial inequality: the capital region, peripheral areas with lower population density, and remote areas with very low population density. The main potential determinants of the typology of Latvian municipalities (which must be empirically tested through further quantitative analysis of statistical data) are considered to be population density, distance from Riga, and the characteristics of transport and its infrastructure. The next methodological issue in the empirical verification of the above theoretical systemic analysis is the empirical interpretation of the conceptual constructs used in the study, with the aim of making them practically measurable in the territories of Latvian municipalities.

Table 1 presents both the conceptual constructs used in the systemic analysis of the object and subject of the study, as well as their empirical interpretation, based on ideas drawn from the reviewed scientific literature and data from Latvian statistics.

[1] Saeima of Latvia 2020, Law on administrative territories and populated areas, *Latvijas Vēstnesis = Bulletin of Latvia*, 119C, 22/06, URL: https://likumi.lv/ta/en/en/id/315654 (accessed 04.11.2024).

*Table 1*

**Conceptual constructs of the study and their empirical interpretation**

| Conceptual constructs | Empirical interpretation within the study, data for 2022—2023 |
|---|---|
| Economic productivity (in the territory) | GDP per capita, euros<br>Average annual personal income tax per capita, euros |
| Environmental sustainability (in the territory) | Greenhouse gas (GHG) emissions ($CO_2$, $N_2O$, $CH_4$, HFC, and $SF_6$) per capita, kg in $CO_2$ equivalent<br>GHG emissions per km$^2$ of territory, thousand tons in $CO_2$ equivalent |
| Transport characteristics (in the territory) | Share of passenger electric vehicles, % of the total number of registered passenger cars |
| Transport infrastructure characteristics (in the territory) | Share of asphalt and other bitumen-covered roads, % of the total length of roads<br>Road density, km of roads (streets, state and municipal roads) per km$^2$ of territory |
| General characteristics potentially determining the typology of territories | Population density, number of residents per km$^2$ of territory<br>Distance to Riga (by road), km |

Developed based on [1; 2; 9; 11], as well as data from Latvian statistics[1] and the State Treasury of Latvia.[2]

[1] Central Statistical Bureau (Latvia), IRD062: Usually resident population density in regions, cities and towns, municipalities, and rural territories, *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__POP__IR__IRD/IRD062/ (accessed 04.11.2024) ; IKR060: Gross domestic product and gross value added by region, State city and municipality at current prices (after administrative-territorial reform in 2021), *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__VEK__IK__IKR/IKR060 (accessed 04.11.2024) ; GPE020: Greenhouse gas emissions in regions, State cities and municipalities, *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__ENV__GP__GPE/GPE020 (accessed 04.11.2024) ; TRC011: Stock of vehicles by type in regions, State cities and municipalities, *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__NOZ__TR__TRC/TRC011/ (accessed 04.11.2024) ; TRC012: Registered electric vehicles in regions, State cities and municipalities, *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__NOZ__TR__TRC/TRC012/table/tableViewLayout1/ (accessed 04.11.2024) ; TRS020: Length of state and municipal roads and streets in regions, State cities and municipalities, *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__NOZ__TR__TRS/TRS020 (accessed 04.11.2024) ; DRT011: Total and land area of regions, cities, municipalities, towns and rural territories, *Statistical database*, URL: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__ENV__DR__DRT/DRT011 (accessed 04.11.2024).

[2] State Treasury of Latvia, *Basic Budget Implementation Report (2PB_Pasv)*, URL: https://e2.kase.gov.lv/pub5.5_pasv/code/pub.php?module=pub (accessed 04.11.2024).

Since the interaction between Latvian municipalities/the state of transport development of their territory and the practices / demands related to environmental sustainability and economic productivity is a two-way process, Pearson correlation [30] analysis can be used for the quantitative assessment of the above-mentioned interrelationships (Fig. 1). Subsequently, those among the main potential determinants of the typology of Latvian municipalities that show statistically significant correlation with the selected indicators of economic productivity and environmental sustainability will be included in a cluster analysis aimed at identifying empirical types of Latvian territories (Fig. 1, Table 1). Based on the literature review and brief analysis, it can be concluded that the state of transport development for each type of identified Latvian territory has its specific characteristics, determined by the particularities of the economic productivity and environmental sustainability of these types of territories.

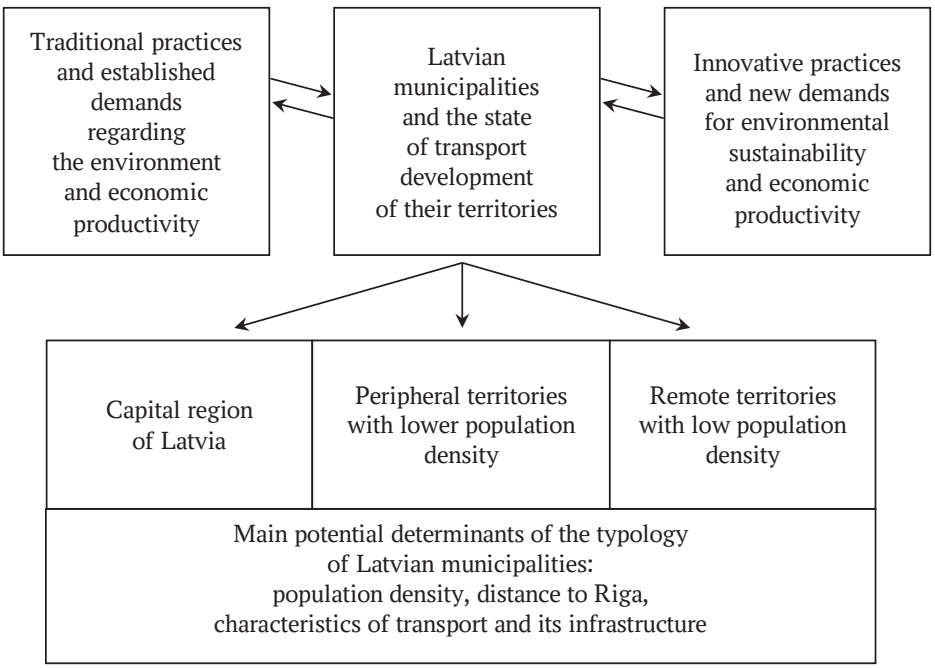


Fig. 1. Systemic analysis of the object (Latvian municipalities) and the subject (the state of transport development of their territories) of the study, including the forces acting upon them (and vice versa), and the result of this interaction

Developed based on the literature review and brief analysis.

## Results and discussion

The analysis of the research results begins with the examination of the correlation between the characteristics of transport and its infrastructure in Latvian municipalities, the general characteristics of the municipalities, and the economic productivity / environmental sustainability of their territories (Table 2).

*Table 2*

**Correlation between the main potential determinants of the typology of Latvian territories and their indicators of economic productivity / environmental sustainability, n = 43, 2022—2023**

| Correlated indicators | Correlation analysis coefficients | Indicators of economic productivity (in the territory) | | Indicators of environmental sustainability (in the territory) | |
|---|---|---|---|---|---|
| | | GDP per capita | Average annual personal income tax per capita | GHG emissions per capita | GHG emissions per km$^2$ of territory |
| Share of passenger electric vehicles | Pearson correlation coefficient | 0.400** | 0.800** | −0.505** | 0.134 |
| | Significance (2-tailed) | 0.008 | < 0.001 | < 0.001 | 0.392 |
| Share of asphalt and other bitumen-covered roads | Pearson correlation coefficient | 0.511** | 0.544** | −0.705** | 0.679** |
| | Significance (2-tailed) | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Road density | Pearson correlation coefficient | 0.241 | 0.208 | −0.575** | 0.856** |
| | Significance (2-tailed) | 0.119 | 0.180 | < 0.001 | < 0.001 |
| Population density | Pearson correlation coefficient | 0.427** | 0.215 | −0.497** | 0.969** |
| | Significance (2-tailed) | 0.004 | 0.167 | < 0.001 | < 0.001 |
| Distance to Riga (by road) | Pearson correlation coefficient | −0.494** | −0.832** | 0.432** | 0.001 |
| | Significance (2-tailed) | < 0.001 | < 0.001 | 0.004 | 0.993 |

** 2-tailed correlation is significant at the 0.01 level.

Developed using IBM SPSS Statistics based on data from Latvian statistics and the State Treasury of Latvia.

The results of the correlation analysis presented in Table 2 highlight the relationship between characteristics of transport / its infrastructure and the economic/environmental indicators of Latvian municipalities. Higher-quality road infrastructure and a greater share of electric vehicles are associated with increased economic productivity ($r = 0.400$, $p = 0.008$ for GDP and $r = 0.800$, $p < 0.001$ for personal income tax) and reduced GHG emissions per capita ($r = -0.505$, $p < 0.001$). However, an increase in road density and population density leads to higher GHG emissions per unit area ($r = 0.856$, $p < 0.001$ and $r = 0.969$, $p < 0.001$, respectively), which poses challenges for environmental sustainability. Proximity to Riga plays a crucial role (showing the highest correlation coefficients) in the

economic productivity of Latvian municipalities ($r = -0.494$, $p < 0.001$ for GDP and $r = -0.832$, $p < 0.001$ for personal income tax) and correlates with higher per capita GHG emissions as the distance increases ($r = 0.432$, $p = 0.004$). In any case, all five correlated indicators demonstrate statistically significant relationships with one or another aspect of economic productivity or environmental sustainability in Latvian municipalities and will be included in the subsequent cluster analysis.

The results of the cluster agglomeration process (the first step in the implementation of hierarchical cluster analysis) showed that the optimal number of clusters, calculated based on identifying the step in the agglomeration process after which the coefficient increases sharply [30] (in our case, from 8.879 at step 39 to 14.064 at step 40), is 4 (calculated using IBM SPSS Statistics software). The main results of the cluster analysis are presented in Table 3.

*Table 3*

**Typological groups of Latvian municipalities obtained as a result of cluster analysis, n = 43, 2022—2023**

| Parameter | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 |
|---|---|---|---|---|
| Name of the cluster | The capital of Latvia | Central cities | All Latvian counties | Remote cities |
| Number of objects | 1 | 3 | 36 | 3 |
| Names of participants | Riga | Ventspils, Yelgava, Yurmala | Group of 36 county-level municipalities requiring further classification | Daugavpils, Liepaya, Rezekne |
| Share of passenger electric vehicles, % | 5.7 | 7.7 | | 1.4 |
| Share of asphalt and other bitumen-covered roads, % | 72.3 | 69.5 | | 69.9 |
| Road density, km | 3.96 | 3.91 | | 4.88 |
| Population density, persons | 2,309 | 724 | | 1364 |
| Distance to Riga (by road), km | 0 | 83 | | 223 |

Developed using IBM SPSS Statistics based on data from Latvian statistics.

The results of the cluster analysis presented in Table 3 reveal distinct typological groups among Latvian municipalities. Clusters 1, 2, and 4 show a similar level of automobile transport infrastructure development, while remote cities (Cluster 4) face additional challenges such as low adoption of electric vehicles and greater distance from the economic centre, which is reflected in their econo-

mic and environmental profiles (Table 4). Remote cities in Latvia exhibit a more "industrial" profile, with relatively higher population density and road density compared to central cities.

*Table 4*

**Economic and environmental indicators of Latvian city groups, n = 7, 2022—2023**

| Economic / environmental indicators | The capital of Latvia, Riga | Central cities (Ventspils, Yelgava, Yurmala) | Remote cities (Daugavpils, Liepaya, Rezekne) |
|---|---|---|---|
| GDP per capita, euros | 28,943.00 | 12,454.67 | 13,283.67 |
| Personal income tax per capita, euros | 1,159.68 | 992.17 | 645.66 |
| GHG emissions per capita, kg | 3,712.09 | 2,630.55 | 3,306.92 |
| GHG emissions per $km^2$ of territory, ths. t | 7.42 | 1.71 | 4.12 |

Developed using IBM SPSS Statistics based on data from Latvian statistics and the State Treasury of Latvia.

Riga demonstrates the highest economic productivity and income levels, highlighting its central role in the Latvian economy. Central cities benefit from their proximity to Riga, showing moderate economic productivity, while remote cities have a slightly higher GDP per capita but a lower average annual personal income tax per capita (Table 4). Regarding environmental profiles, it is important to note that Riga's high economic productivity is accompanied by high levels of GHG emissions both per capita and per $km^2$ of territory. In contrast, central cities exhibit the most favourable environmental indicators, with the lowest GHG emissions per capita and per $km^2$, indicating a balance between economic productivity and environmental sustainability in this type of Latvian territory.

Particular attention should be given to the position of the city of Ventspils in the typology. Despite its considerable geographical distance from Riga, it was placed in the cluster of "central cities" alongside Jelgava and Jūrmala. At first glance, this may seem methodologically questionable; however, the sample and the logic of clustering were based not on geographical criteria but on complex socio-economic and infrastructure indicators. Ventspils demonstrates a high share of electric vehicles, a well-developed road network, relatively strong economic performance, and moderate GHG emissions per unit of area. Furthermore,

its specialisation as a port city grants it functional proximity to the centre of the national economy. Therefore, its inclusion in this cluster should be interpreted as a reflection of functional rather than purely spatial centrality.

In turn, the remote cities of Latvia, despite having lower economic productivity, exhibit significant GHG emissions per capita, highlighting their environmental unsustainability, even though their overall GHG emission density per $km^2$ is lower compared to Riga (Table 4). The results of this analysis reveal the economic advantages and environmental challenges faced by different groups of Latvian cities. Riga's economic leadership contrasts with its environmental impact, while the central cities demonstrate a more balanced relationship between economic productivity and environmental sustainability.

As for the 36 Latvian counties, a second stage of cluster analysis was conducted, during which the 7 city municipalities were excluded from the analysis. The results of the agglomeration process (the first step in implementing hierarchical cluster analysis) showed that the optimal number of clusters — calculated by identifying the step in the agglomeration process after which the coefficient increases sharply [30] (in our case, from 16.864 at step 34 to 43.970 at step 35) — is 2 (calculated using IBM SPSS Statistics software). The main results of the cluster analysis are presented in Table 5.

*Table 5*

**Typological groups of Latvian counties obtained as a result of cluster analysis, n = 36, 2022—2023**

| Parameter | Cluster 1 | Cluster 2 |
|---|---|---|
| Name of the cluster | Central counties | Remote counties |
| Number of objects | 17 | 19 |
| Names of participants | Adazi, Aizkraukle, Bauska, Cesis, Dobele, Jelgava, Kekava, Limbazi, Marupe, Ogre, Olaine, Ropazi, Salaspils, Saulkrasti, Sigulda, Tukums, and Valmiera counties | Aluksne, Augšdaugava, Balvi, Dienvidkurzeme, Jekabpils, Gulbene, Krāslava, Kuldīga, Līvāni, Ludza, Madona, Preiļi, Rēzekne, Saldus, Smiltene, Talsi, Valka, Varakļāni, and Ventspils counties |
| Share of passenger electric vehicles, % | 3.8 | 1.0 |
| Share of asphalt and other bitumen-covered roads, % | 37.3 | 24.7 |
| Road density, km | 1.05 | 0.81 |
| Population density, persons | 53 | 10 |
| Distance to Riga (by road), km | 52 | 182 |

Developed using IBM SPSS Statistics based on data from Latvian statistics.

As shown by the data presented in Table 5, central counties are characterised by a higher level of electric vehicle adoption, more developed transport infrastructure, relatively high population density, and proximity to Riga. These factors contribute to better economic opportunities, access to services, and environmental technologies, making the central counties more dynamic and integrated into Latvia's overall economic structure. In contrast, remote counties demonstrate lower levels of electric vehicle adoption, less developed transport infrastructure, low population density, and are located significantly farther from Riga (Table 5). These factors contribute to economic isolation, slower development, and limited access to modern infrastructure and environmental technologies, making remote Latvian counties less competitive and more dependent on traditional transportation methods. Overall, the typological groups of Latvian counties mirror the typology of cities, with central counties also benefiting from proximity to the capital / central cities and better infrastructure, while remote counties face challenges related to distance from Riga, lower quality transport infrastructure, and comparatively low population density.

As shown by the data in Table 6, central counties demonstrate better economic indicators, with higher GDP per capita and personal income tax per capita, reflecting a more developed economy, better access to markets, and higher income levels among the population. Regarding environmental sustainability, these counties have lower GHG emissions per capita but higher GHG emissions per $km^2$ of territory due to concentrated economic activity. On the other hand, remote counties face economic challenges in the form of comparatively low GDP per capita and personal income tax per capita, contributing to their isolation — not only economically, but also socially, politically, etc. [11; 31; 32] — lower economic productivity, and limited access to economic opportunities. Meanwhile, the higher GHG emissions per capita in the remote Latvian counties indicate less efficient energy use, although the overall GHG emissions per $km^2$ are lower due to the relatively large size and low population density of these territories.

*Table 6*

**Economic and environmental indicators of Latvian county groups, n = 36, 2022 — 2023**

| Economic / environmental indicators | Central counties, n = 17 | Remote counties, n = 19 |
|---|---|---|
| GDP per capita, euros | 13,499.24 | 10,042.32 |
| Personal income tax per capita, euros | 925.28 | 586.83 |
| GHG emissions per capita, kg | 5,106.35 | 6,865.78 |
| GHG emissions per $km^2$ of territory, ths. t | 0.20 | 0.07 |

Developed using IBM SPSS Statistics based on data from Latvian statistics and the State Treasury of Latvia.

Figure 2 visually presents five types of territories in Latvia identified through the two-level cluster analysis:

(1) Riga, the capital of Latvia and its geographical, transport, economic, and other central hub;

(2) central cities of Latvia (Ventspils, Yelgava, Yurmala), located close or relatively close to Riga (except for Ventspils);

(3) remote cities (Daugavpils, Liepaya, Rezekne), located far from Riga;

(4) central counties (17 municipalities), located close or relatively close to Riga;

(5) remote counties (19 municipalities), located far from Riga.


Fig. 2. Cartographic visualisation of the typology of territories of Latvian municipalities

Developed using ArcGIS software and the results of the cluster analysis; serves as an illustration for Tables 3 and 5.

Relatively speaking, economically active and transport-developed Latvia can be outlined on a geographical map (Fig. 2) almost with a compass, placing its point on Riga. As for the rest of the country — if not for the presence of three fairly large industrial cities (Daugavpils, Liepaya, Rezekne) — the Latvian political elite would likely prefer to forget about it altogether, as many remote areas of Latvia have already become nearly inaccessible by land transport, es-

pecially under unfavorable weather conditions and during the off-season [33]. Thus, the specifics and essence of the state of automobile transport development in Latvian central and remote territories are determined by monocentric spatial inequality (with elements of polycentrism — some state-level cities may be considered growth poles to some extent) regarding economic productivity and environmental sustainability, as well as by the unique spatial distribution of population density.

Central Latvian territories are characterised by an improved state of automobile transport development due to a well-developed road network, high road density, and better quality of transport infrastructure. The transport development of central territories supports economic productivity in these areas but requires careful management to balance economic growth with environmental sustainability.

In contrast, the state of automobile transport development of remote Latvian territories is lower due to less developed transport infrastructure, low road density, and minimal adoption of electric vehicles. The state of automobile transport development challenges in these territories are further exacerbated by long distances and higher transportation costs, making it difficult to achieve high economic productivity and environmental sustainability.

## Conclusions

This study emphasizes the significant differences between central and remote Latvian territories (at both the city and county levels), highlighting the need for a targeted transport policy that takes into account the unique context of spatial inequality regarding economic productivity and environmental sustainability, as well as the specific spatial distribution of population density in Latvia. Central Latvian cities and counties benefit from their proximity to the capital and its infrastructure, while remote cities and counties face economic isolation and environmental inefficiency. In fact, the 100-kilometre zone surrounding the Latvian capital represents a 'different world' compared to remote Latvia, located more than 100 kilometres from Riga. It is noteworthy that the current geopolitical situation and sanctions/restrictions against Russia and Belarus are not the determining factors of this condition, as remote Latvian counties near the borders with Estonia and Lithuania share a similar context in terms of economic productivity and environmental sustainability, as well as comparably low population density and limited state of automobile transport development, to those near the borders with Russia and Belarus.

The state of automobile transport development in central and remote Latvian territories largely depends on the economic and environmental characteristics of

each of these territory types, as well as on population density and their distance from Riga. To improve the state of automobile transport development in Latvia, targeted strategies are needed separately for the central and remote parts of the country. For central territories, the focus should be on optimising road transport networks, promoting electric vehicles, and implementing sustainable urban transport solutions. In contrast, remote territories require investments in automobile transport infrastructure, such as the modernisation of rural roads and the introduction of innovative, localised transport solutions (e. g., shared vehicle services). These measures can help balance economic productivity with environmental sustainability and tailor development to the specific needs and capabilities of both central and remote Latvian territories.

Thus, the identified differences confirm the existence of a persistent 'centre — periphery' structure in Latvia, where Riga and the surrounding areas function as the centre, while remote territories act as the periphery, limited in access to economic and transport resources.

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# ADAPTATION OF SPATIAL STRATEGIES OF THE LARGEST DEVELOPERS OF RESIDENTIAL REAL ESTATE IN ST. PETERSBURG TO ANTI-RUSSIAN SANCTIONS



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*Anti-Russian sanctions have had varied and multidirectional impacts across multiple sectors of the national economy, including the housing construction sector — most notably, the development of multi-apartment residential buildings. As a consequence of these sanctions, foreign developers employing advanced management and marketing practices withdrew from the Russian market, while domestic developers were forced to rapidly adapt to both new and intensifying pre-existing factors shaping the primary housing market. This study seeks to identify the adaptation trajectories of major residential developers operating within the St. Petersburg agglomeration under the constraints imposed by anti-Russian economic sanctions. To this end, several research objectives were pursued: compiling and analyzing data on residential projects from the Unified Housing Construction Information System (UHCIS); mapping the territorial distribution of completed and ongoing residential developments; examining changes in the intensity of land development across different territorial zones; and evaluating developers' spatial strategies using the Herfindahl–Hirschman Index (HHI) and other analytical tools. The empirical foundation of the study is drawn primarily from UHCIS data provided by DOM.RF (including the map of new construction), complemented by information from media sources. Through cartographic analysis, territorial clusters of residential construction were delineated, and the share of housing commissioned in each cluster was assessed for three time periods: 2016— 2020, 2020— 2024, and 2025— 2028. Developer concentration within these clusters was further evaluated using the HHI. The study identifies five major crisis factors induced by sanctions and outlines nine distinct adaptation trajectories among various groups of developers. The most immediate response was the withdrawal of*

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*foreign developers from the market. The research further proposes four strategic models adopted by domestic developers, each characterized by specific strengths, limitations, and implications for urban development. Among the most influential factors was the sharp increase in the Central Bank's key interest rate, which led to a significant decline in suburban development due to reduced mortgage affordability. Conversely, development activity intensified in parts of the so-called 'grey belt', targeting segments of higher-income demand. This reorientation has contributed to greater spatial integration within the agglomeration and the ongoing expansion of the urban core.*

**Keywords:**
adaptation trajectories, strategies, developers, anti-Russian sanctions, housing market, St. Petersburg agglomeration, Unified Housing Construction Information System (UHCIS)

## Introduction and problem setting

A new round of geopolitical and geo-economic tensions, beginning in 2022, resulted in the imposition of severe anti-Russian sanctions that significantly impacted not only the financial sector but also the real sector of the Russian economy — its regions, urban agglomerations, and individual economic actors. However, these sanctions did not originate in 2022; they have been in effect since 2014, which reflects the broader temporal scope of the study. Moreover, external negative influences are closely intertwined with internal factors, including those triggered or exacerbated by external pressures.

A substantial body of empirical data, analytical materials, and research has been accumulated to assess the impact of anti-Russian sanctions on the Russian economy as a whole, along with studies examining the adaptation strategies employed by Russian companies.

Given the multi-vector and diverse impact of anti-Russian sanctions on the Russian economy, it is worth focusing on several key vectors that directly affect the real economy both at the national, regional and urban levels.

Firstly, transaction costs have increased — particularly in terms of logistics and the final cost of imported goods — while opportunities for importing related products have diminished. Simultaneously, the demographic crisis and the growing role of the military-industrial complex have led to a decline in the number of foreign migrants and a transformation of the labour market, resulting in rising wages [3]. As a consequence, unmet demand is growing across the economy, partly due to supply shortages, which is contributing to rising inflation.

In response, the Central Bank of Russia has sought to curb inflation by adjusting the national key interest rate. After a relatively rapid stabilization of the rate in 2022, returning to pre-February levels and remaining below 10 % for over a year (from June 14, 2022, to August 15, 2023), the rate began to rise steadily from August 2023 onward. As of late October 2024, it reached 21 %.[1]

[1] Discount rate of the Bank of Russia. 2025, *Bank of Russia*, URL: https://cbr.ru/hd_base/KeyRate/ (accessed 08.01.2025).

Accordingly, the imposition of severe anti-Russian sanctions and the increase in the key interest rate have had a significant impact on many sectors of the real economy, including the residential real estate market. The COVID-19 pandemic caused labour shortages in the construction industry and disruptions in the supply of building materials — challenges that further intensified in 2022. At the same time, the financial importance of the housing market has been growing both globally and within Russia.

In 2018—2019, Russia underwent a transition to project financing in the construction sector, accompanied by a substantial increase in the role of the banking sector. As a result of the rising key interest rate, the cost of development projects increased due to higher project financing expenses. Moreover, the discontinuation of extended preferential mortgage programs triggered a crisis in the real estate market, particularly affecting apartment construction in 2020.

By the end of 2024, demand in the primary residential real estate market declined as expected. The decrease was 22 %, with the number of transactions under equity participation agreements falling to 565,000 apartments. Taking into account transactions in already completed buildings, the total volume of the primary housing market in Russia in 2024 is estimated at approximately 700,000 apartments.[1]

In market conditions, the key role in the development of housing construction and the real estate market is played by the largest developers, whose positions are only strengthening in the context of the development of project financing [5]. Major developers in the market pursue various spatial development strategies by implementing projects in specific types of locations. These may include similar urban zones — for instance, Setl Group's projects in the 'rust belt' of St. Petersburg; particular segments of urban agglomerations — such as A101 Group's projects in the middle suburbs; or 'core' or 'anchor' territories — for example, the investment and construction group Mavis's developments in the Murino area.[2] Simultaneously, developers pursue diverse strategies in the construction of apartment complexes, encompassing building design, landscaping, and infrastructure, driven not so much by governmental directives as by their marketing considerations,[3] i. e. they make different contributions to the development of the urban

[1] "Macon Real Estate Consulant" report: the state of the primary residential apartment real estate market in the Russian Federation in early 2025 (January 2025). 2025, URL: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://macon-realty.ru/files/uploaded/bc1330c8-3445-494e-9f70-46a844befddd.pdf (accessed 08.01.2025).

[2] Map of new apartment complexes. 2025, *Unified Housing Construction Information System, DOM.RF*, URL: https://наш.дом.рф/сервисы/каталог-новостроек/список-объектов/карта (accessed 08.01.2025).

[3] Pole shift: how the approach of developers is changing in the new realities, the urban development complex of Moscow, 2025, *Stroi.Mos*, URL: https://stroi.mos.ru/articles/smiena-poliusov-kak-mieniaietsia-podkhod-zastroishchikov-v-novykh-riealiiakh?ysclid=m5o90mafes113845673&from=cl (accessed 08.01.2025).

environment [6]. On the scale of agglomeration, housing construction in cities affects the development of the settlement system, the distribution of places of employment, traffic flows and ensures the migration attractiveness of territories [7].

Ultimately, the stringent anti-Russian sanctions and the economic crisis of 2022 — which they have exacerbated — are affecting major developers and influencing the spatial dynamics of housing construction in the country's largest urban agglomerations. The 2022 crisis also threatens the attainment of Russia's national development goals, including: "increasing housing construction to at least 120 million square meters per year"[1], and "ensuring that by 2030 each citizen has access to housing with a total area of at least 33 square meters, and at least 38 square meters by 2036"[2]. To meet these targets, approximately 6—7 million square meters of residential space must be constructed annually in St. Petersburg and the Leningrad region between 2024 and 2030[3], necessitating the development of extensive suburban areas within the St. Petersburg agglomeration [8].

Accordingly, this study analyses how the recent economic crises (the COVID-19 pandemic in 2020 and the anti-Russian sanctions of 2022) have affected the spatial expansion strategies of the largest property developers in the St. Petersburg agglomeration, which has accounted for around 7—8 % of Russia's housing completion volume over the past 5 years. This is a timely and relevant line of research, given the complex impact of housing construction on the development of both urban agglomerations and the country as a whole.

The identification of crisis factors stemming from the stringent anti-Russian sanctions of 2022 — which have amplified certain structural trends in the industry — serves as a basis for tracing the adaptive strategies adopted by major housing developers. These strategies may subsequently inform practices in other major agglomerations. Furthermore, the study will assess how these adaptation patterns shape the broader territorial development of the St. Petersburg agglomeration.

## Materials and methods

The analysis of housing construction and the real estate market relies on diverse spatial and economic data sources, thereby facilitating an interdisciplinary research approach. This study employs data from the Unified Housing Construc-

[1] On the national development goals of the Russian Federation for the period up to 2030, Presidential Decree № 474 of 21.07.2020, 2020, President of Russia, URL: http://www.kremlin.ru/acts/news/63728 (accessed 08.01.2025).

[2] On the National Development Goals of the Russian Federation for the period until 2030 and for the Prospect up to 2036, Presidential Decree № 309 of 07.05.2024, 2024, President of Russia, URL: http://www.kremlin.ru/acts/bank/50542 (accessed 08.01.2025).

[3] Unified Plan for Achieving the National Development Goals of the Russian Federation for the period until 2024 and for the planning period until 2030, 2024, Ministry of Economic Development of the Russian Federation, URL: https://www.economy.gov.ru/material/file/ffccd6ed40dbd803eedd11bc8c9f7571/Plan_po_dostizheniyu_nacionalnyh_celey_razvitiya_do_2024g.pdf (accessed 08.01.2025).

tion Information System (UHCIS), maintained by DOM.RF.[1] Within the framework of the Unified Housing Construction Information System, Russian developers publish design declarations and commissioning permits, which serve as the basis for generating data on the spatial location of housing projects (at the level of individual points with geographic coordinates), as well as detailed information on apartment complexes, including total floor area, apartment layouts, and other characteristics. The system also aggregates data on apartment sales by developers — data that is increasingly used not only in the consulting sector [12], but also in academic research [13]. As part of the study, the following types of data were used from the UHCIS:

1) *Localization and basic information about housing projects of developers in St. Petersburg and the Leningrad region*. This information covers the majority of apartment buildings constructed in St. Petersburg and the Leningrad region between 2017 and 2024 and under construction in 2025—2028 (about 3 thousand records). Apartment complexes, which are essentially one large-scale project but have several design declarations for different buildings and were commissioned in one of the three periods studied, are grouped into clusters.

• 2016—2020, i.e. before new crises in the industry and the full transition to project financing. A relatively stable period, with the same duration as the two periods.

• 2020—2024, when the housing construction industry and the housing market were transformed by the transition to project financing and the introduction of preferential mortgages. At the same time, the industry was affected by the crises of 2020 and 2022.

• after 2024, the housing construction industry is entering a new phase shaped by changing conditions, including the termination of preferential mortgage programs and IT-mortgages, as well as the continued high interest rate, which constrains access to financing for both developers and the general public.

To determine the period of housing construction, the parameter of 'key issuance' was employed. This serves as a crucial temporal indicator within the framework of project-based housing finance, signifying the full completion and readiness of an apartment complex. Data on real estate objects from the Unified Housing Construction Information System (UHCIS) were obtained through HTML parsing. For this purpose, the Beautiful Soup library in the Python programming language was utilised, enabling the extraction of information from markup languages (HTML, XML) [14]. The analysis primarily focuses on apartment buildings, as information on the construction of single-family housing (SFH) is rarely published in the UHCIS, given that such homes are often built independently by private individuals.

2) *Analytical information on the housing market*: the number of loans issued, published advertisements and construction volumes.

[1] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

Publications in the media, including specialized ones on the real estate market, became an additional source of information. Information from the media made it possible to clarify the history of the purchase and sale of apartment complexes and the plans of developers, as well as to find out information on land transactions.

The use of apartment complex-level data in this study aligns with the broader trend in geo-urban research toward the application of point-level data, as opposed to aggregated information at the municipal level. This methodological shift has been actively employed by Kurichev and Kuricheva in their studies of the Moscow agglomeration. Notably, it enabled analysis of housing intensity across agglomeration belts and sectors [15], as well as by distance from the urban core [16]. Such an approach allows researchers to operate with flexible territorial units — whether elements of the planning structure or cells of a regular spatial grid — rather than being limited to administrative boundaries. This flexibility facilitates better control over, and mitigation of, the modifiable areal unit problem (MAUP) [17]. It should also be noted that there are emerging risks associated with the potential reduction in the availability of official statistical data, as government agencies may limit data access in response to sanctions-related concerns.[1] Therefore, the introduction of alternative data sources for geographical research, including in geo-urban studies, is necessary [18].

A significant advantage of the data provided by the Unified Housing Construction Information System (UHCIS) is the availability of information linking apartment complexes to specific developers. Earlier studies relied on data from the housing registry of the State Information System of Housing and Communal Services [19], which limited analysis to the territorial level. In contrast, UHCIS data enable the application of corporate geography approaches [20], particularly for examining the spatial strategies of developers operating in the real estate market. The corporate approach to analysing territorial structures within agglomerations is already being employed, for example, in studies on the spatial distribution of logistics facilities developed by retailers pursuing various location strategies [21; 22]. This study pays particular attention to the growing number of land transactions and transfers of apartment complex projects between developers, which signals shifts in the structure and dynamics of the real estate market.

## The results of the study

The activity of companies in the housing construction market during the crisis of 2020 and 2022 was characterized by seasonality, as well as reactions to institutional factors, primarily preferential lending programs and the level of the discount rate (Fig. 1).

[1] Parliament allowed the Government not to disclose statistics. 2023, *RBC*, URL: https://www.rbc.ru/rbcfreenews/63f5eb2c9a79474bcd973dd8 (accessed 08.01.2025).

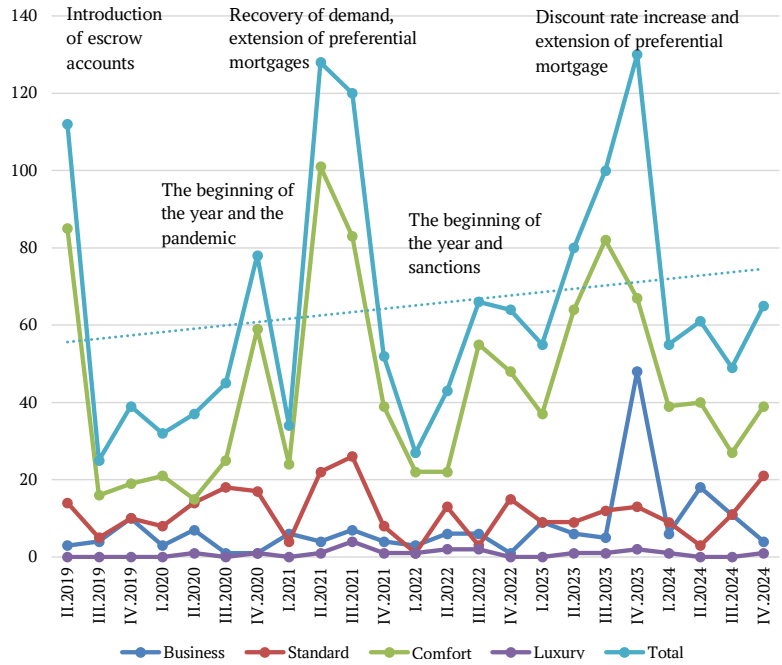


Fig. 1. Dynamics of the number of advertisements by developers about new apartment complexes, in total and by housing class, by quarter for 2019—2024

Based on the data UHCIS.[1]

Figure 1 shows 4 housing classes. These housing classes do not have a regulatory status in the legislation. In the UHCIS, they are determined by the developers themselves. That is, it is possible to consider the structures of housing commissioning, only taking into account the positioning on the part of the developer. An indicative comparison of housing classes can be drawn from the following apartment complexes: *Oktyabrskaya Naberezhnaya* (standard), *Aeronavt* (comfort), *Lermontovsky 54* (business), and *Neva Residence* (luxury). This sequence reflects the gradation of residential quality, amenities, and market positioning across different segments of the housing market.

*Even before the crises of 2020 and 2022, the transition to escrow accounts and, consequently, project financing in the industry had a significant impact on the industry.* Developers massively published project declarations of projects and ensured the availability of 10 % of the concluded equity construction contracts to reduce the volume of transactions on escrow accounts.[2] Citizens, in turn, showed increased demand, trying to buy cheaper apartments under equity participation agreements rather than more expensive escrow accounts [23]. Project financing

[1] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

[2] From escrow in theory to nuances in practice. 2019, *Forbes*, URL: https://blogs.forbes.ru/2019/12/09/ot-jeskrou-v-teorii-k-njuansam-na-praktike/ (accessed 08.01.2025).

has led to an increase in the cost of projects for developers and an increase in the cost of housing for buyers, but has increased the sustainability of the housing construction sector [24]. The decline in the industry intensified during the COVID-19 pandemic, when restrictions led to problems not only with hiring employees (including immigrants) and the supply of building materials [25], but also with the shutdown of construction projects in general [26]. Since the end of 2020, developers have become more active, because the demand in the housing market began to recover due to government support for the construction industry, including through preferential mortgages.

After a relative recovery from the crisis in 2020 (removal of most restrictions in Russia and the world), from the second quarter of 2021, the discount rate level began to rise: apartment prices began to rise further, and demand for real estate began to fall.[1] By the onset of the crisis in 2022, the volume of advertisements published by developers had declined. Although the industry subsequently experienced a recovery, the market activity of developers intensified markedly in 2023. As the gap between the preferential mortgage interest rate and the key discount rate widened, announcements regarding the planned termination of the long-standing preferential mortgage emerged, prompting developers to respond by rapidly launching new projects. By the first quarter of 2024, when the decision not to extend the preferential mortgage was confirmed, the number of developer advertisements decreased significantly. A modest increase observed in the fourth quarter of 2024 can be attributed to seasonal factors — specifically, the strategic launch of projects at year-end to capitalize on peak demand — as well as developers' efforts to adjust to prevailing market conditions.

The territorial distribution of housing commissioning by developers within the St. Petersburg agglomeration has undergone notable changes over the period under study. Several territorial clusters, representing areas with the highest volumes of commissioned housing, were identified within the agglomeration. These clusters were delineated using the DBSCAN density-based clustering algorithm, which enables the identification of spatial groupings of point-based objects [27; 28], while also considering building morphology. In most cases, these clusters do not correspond to municipal boundaries, which are often arbitrary [29] but remain the units for which official statistics are typically collected [18]. Furthermore, not all identified territorial clusters possess official names or clearly defined borders.

As part of the study, it was decided to name the territories based on their well-established names in the media. Accordingly, these are either names of localities (for example, Novosele), near which they are located, or hydrographic objects (for example, the Slavyanka River) or transport objects (for example, Pulkovskoe Highway), or historically formed names ("Grey belt" for a typical rust belt in cities). These clusters are shown in Figure 2.

[1] Apartment prices in Russia have started to decline. 2021, *Lenta.ru*, URL: https://lenta.ru/news/2021/09/01/price_to_rise/?ysclid=m5pto0qoy4499520041 (accessed 08.01.2025).

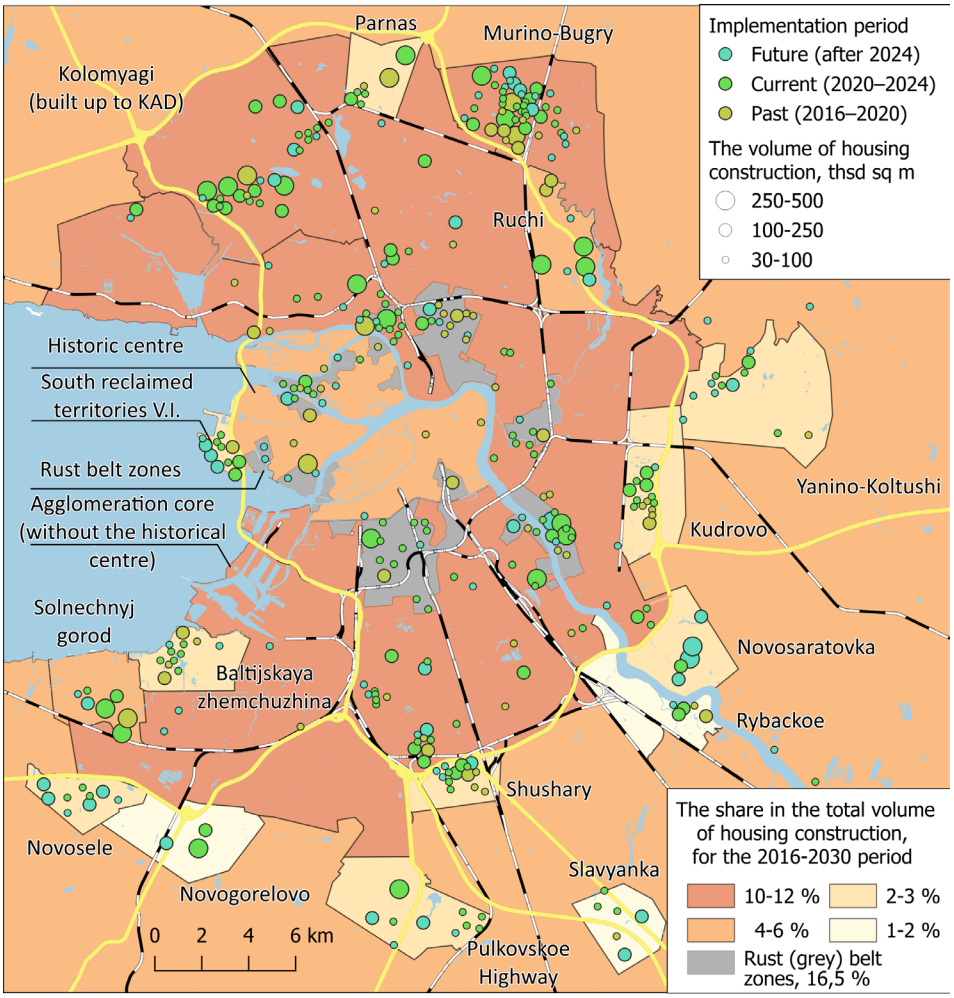


Fig. 2. The territorial structure of apartment complexes built and under construction by developers in the St. Petersburg agglomeration, for 2016—2030

Based on the data UHCIS.[1]

The intensity of construction within the clusters varied. This is due both to the priority of developing these clusters for developers and to the availability of free space for development, which in some areas has already been practically exhausted. The intensity of development in the main territorial clusters is shown in Figure 3.

A key factor influencing housing commissioning is the territorial proximity to the agglomeration core, alongside the availability of land reserves and the presence of other developers in the area. Land reserves have been largely depleted in prominent mass residential development zones such as Kudrovo and Parnas,

[1] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

which were developed before the construction of the Ring Road. Similarly, the *Baltiyskaya Zhemchuzhina* microdistrict is nearing exhaustion of available land for further development. Additionally, land parcels adjacent to the Solnechniy gorod microdistrict are less attractive to developers due to their designation within St. Petersburg's general plan as a functional zone for low-rise residential buildings,[1] which is not so profitable for developers.

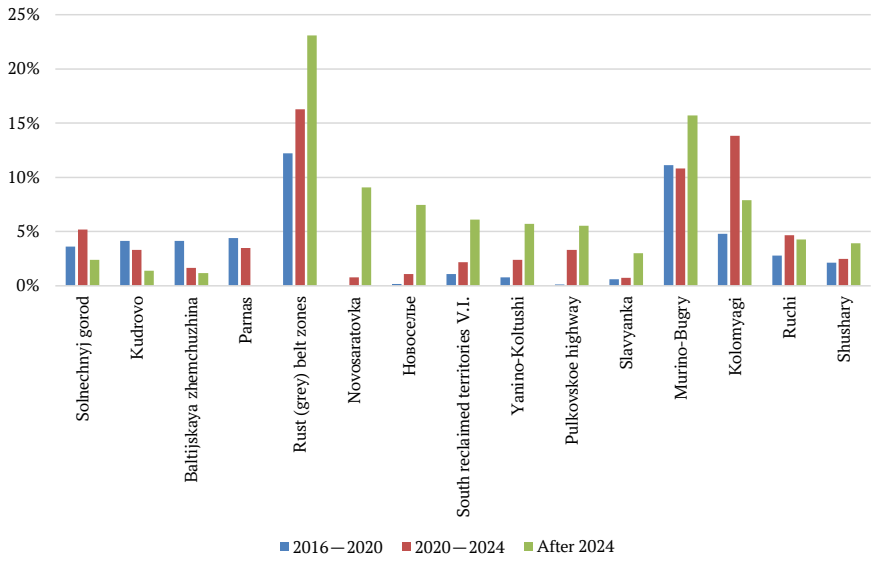


Fig. 3. Change in the intensity of development of territorial zones by developers (share of total housing commissioning by developers), for 2016—2030

Based on the data UHCIS.[2]

In turn, the development of the Murino-Bugry and Kolomyagi territorial zones has been most intensive throughout the period under study. The interest of developers in these territories is related to their proximity to St. Petersburg and the opportunity for the implementation of major projects. Despite the remoteness of the metro station and the Devyatkino railway station, the initial proximity to St. Petersburg of the cities of Murino and Bugry allows developers to continue building relatively successfully to the north, even merging them in the form of a semicircle. The territory of Kolomyagi is one of the most valuable in the agglomeration, because it is located within the St. Petersburg ring road.[3]

[1] Map. 2025, *Urban planning portal of Saint Petersburg*, URL: https://portal.kgainfo.spb.ru/KGAMap/Map (accessed 08.01.2025).

[2] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

[3] It will be completed almost to the St. Petersburg ring road: more than 2 million square meters of housing will be built in the north of St. Petersburg. 2023, *Business Petersburg*, URL: https://www.dp.ru/a/2023/09/20/dostroit-pochti-do-kada-na?ysclid=-m5r7b6mfs3117736273 (accessed 08.01.2025).

In general, there are six territories where developers have increased the number of new projects. The reasons for their development are different. In the territory of Novosele, the proximity to highways and the success of the first high-quality apartment projects[1] led to an increase in the number of residential projects and developers on the territory. The situation is similar for buildings along Pulkovskoe Highway, and registration in St. Petersburg is an additional incentive for buyers. The incentive for developers on the territory of Slavyanka was the start of work on the construction of a tram line to the neighbourhood of the same name.[2] Development in the vicinity is still difficult. Novosaratovka is similar to Murino and Kudrovo in the early stages: buildings above 20 floors (will accommodate up to 158 thousand people),[3] allowing developers to maximize profits. In general, the attractiveness of the territories discussed above for developers and buyers is influenced by the price, which is often lower in the suburbs than in the core of the agglomeration [30].

A distinctive case involves the alluvial territories, where development intensified after the transfer of rights for alluvium creation and subsequent development from Terra Nova JSC to the LSR Group in 2020[4] and the decision to create a street and road network by 2024—2025 in 2022.[5] In 2022, developers shifted their focus to the development of the most attractive sites along the first coastline. In addition to the change in the intensity of development, the ratio of developers implementing projects in the territorial zones has changed.

To evaluate changes in the spatial behaviour of developers across different territorial zones, the Herfindahl—Hirschman Index (HHI) was employed. This index is commonly used to measure the degree of market concentration or monopolization within a particular economic sector, including the residential real estate market [31].

The following index formula was used:

$$HHI_k = \sum_{i=1}^{n} S_{ik}^2,$$

where *HHI* is the Herfindahl—Hirschman index, *k* is one of the zones of active development by developers, *i* is one of the 20 largest developers in St. Petersburg

[1] Novosele for new residents. 2022, *Kommersant*, URL: https://www.kommersant.ru/doc/5316865 (accessed 08.01.2025).

[2] Completion of the Slavyanka tram line has been postponed to 2026. 2023, *Vedomosti*, URL: https://www.kommersant.ru/doc/5316865 (accessed 08.01.2025).

[3] Leningrad Region urban planning council approves changes to the general plan of the Sverdlovsk settlement. 2023, *Kommersant*, URL: https://www.kommersant.ru/doc/5785943 (accessed 08.01.2025).

[4] St. Petersburg is preparing a road network for new territories. 2023, *RBC*, URL: https://www.rbc.ru/spb_sz/28/03/2023/64228c9b9a794738586b0469?ysclid=m5r90006eg995279048 (accessed 08.01.2025).

[5] Roads will be built in St. Petersburg on reclaimed territories by November 2025. 2022, *Fontanka.ru*, URL: https://www.fontanka.ru/2022/09/16/71660528/?ysclid=m5r90os287408991409 (accessed 08.01.2025).

and the Leningrad region during the study period, $n$ is the number of analyzed developers, $S_{ik}$ is the share of company $i$ in the volume of housing built and under construction in the territory K. The higher the index value, the lower the diversity of developers in the territorial area. A value of 1 means that there is no diversity of developers. Accordingly, the change in the Herfindahl-Hirschman index is shown in Figure 4.

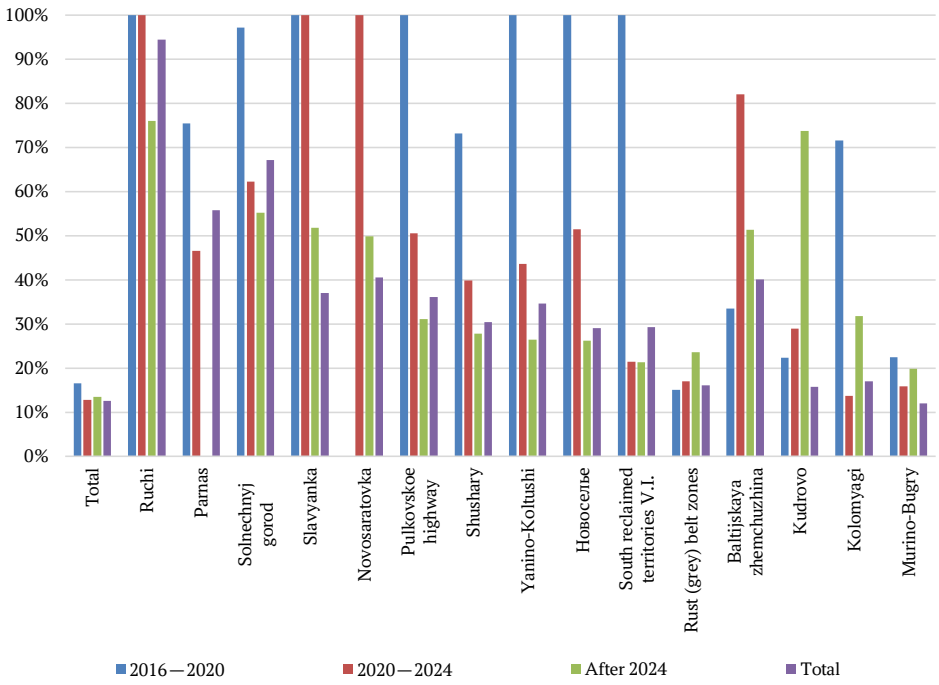


Fig. 4. Changes in the Herfindahl—Hirschman index for the diversity of developers in territorial zones for 2016—2030

Based on the data UHCIS.[1]

*In most of the territories under consideration, the diversity of developers implementing projects has increased.* This was influenced by two factors.

Firstly, the emergence of new players in new territories (through the purchase of land), after the success of the 'pioneers' (Novosele, Pulkovskoe Highway, Novosaratovka).

Secondly, it is the activation of transactions on the resale of projects between developers (the 'South reclaimed territories' of Vasilyevsky Island, Rust Belt, Kolomyagi). At the same time, there are precedents when developers practically do not change projects: stage 1 of the 'Novaya Zemlya' project from the Legend holding has the same architectural and planning solutions as previously in the

[1] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

LSR Group project.[1] These actions by developers are partly attributable to changes in the tax legislation of St. Petersburg enacted in 2024 and effective from 2025, whereby taxes on land designated for residential development increased thirtyfold, significantly raising the costs associated with maintaining large land banks.[2]

In general, the values of the Herfindahl—Hirschman index remain consistently low in the city and the largest development zones (Murino-Bugry, Kolomyagi). At the same time, it is worth noting the situation in Parnas and Kudrovo: due to the exhaustion of territorial reserves, there are either no projects there (Parnas) or individual projects are being completed on the remaining sites (Kudrovo).

From a corporate perspective, the intensity of suburban development is largely linked to the greater accessibility of these areas for developers, primarily due to lower land and construction costs. Consequently, the number of projects undertaken by business-class developers in suburban zones has increased. Notable examples include Glorax, with projects in Novosele and Mikhaylovka village, and the Etalon Group, with developments near Pulkovskoe Highway and in Shushary. Simultaneously, new market entrants are also targeting suburban locations, such as the Arkhangelsk-based Aquilon Group (Kudrovo, Yanino-Koltushi, Shushary), the federal developer Brusnika (Novosele), and the PIK Group of Companies (Yanino-Koltushi, Novosele).

Particular attention is given to the largest developers in the St. Petersburg market, whose spatial strategies are of primary interest. These include the three largest local housing developers — Setl Group Holding, LSR Group, and CDS Group — as well as two of the country's largest developers that have recently entered the agglomeration market — Samolet Group and PIK Group. The analysis focuses primarily on the territorial distribution of their completed projects during the crisis period (2020—2024) and their immediate post-2024 development plans (Fig. 5).

Overall, the territorial structure of projects implemented by the major development companies shows relatively little variation between the crisis period and the subsequent period, as they continue to build out a number of established areas within the agglomeration — such as the Streams project by LSR Group, developments in Kamenka by CDS Group, and ongoing projects by Setl Group Holding. Some areas within the so-called 'rust belt' remain relatively new to developers, as does the development of territories in the village of Novosaratovka. Nevertheless, it is possible to discern certain patterns in the formulation of spatial expansion strategies among these developers. The Setl Group holding has a fairly wide geography of projects. Until 2020, the company mainly focused on large-scale housing construction projects, mainly of comfort and standard class (terms within the framework of the UHCIS). Examples of such large-scale projects include the

[1] Legenda bought a plot from LSR on the southern alluvium of Vasilyevsky Island. 2024, *Business Petersburg*, URL: https://www.dp.ru/a/2024/12/16/legenda-kupila-u-lsr-uchastok?ysclid=m5rcbf2vc0202398225 (accessed 08.01.2025).

[2] Landlords in St. Petersburg are faced with an unprecedented increase in taxes on land for housing. 2025, *Business Petersburg*, URL: https://www.dp.ru/a/2025/05/07/lendlordi-v-peterburge-stolknulis (accessed 23.05.2025).

*Grinlandiya-1* and *Grinlandiya-2* apartment complexes in Murino, comprising approximately 430,000 square meters of residential space, according to UHCIS data. Other notable developments are multiple phases of the *Chistoe Nebo* apartment complex in the Kolomyagi area, totalling around 1,200,000 square meters, and several phases of the *Solnechnyj Gorod* complex, also amounting to approximately 1,200,000 square meters of residential space.

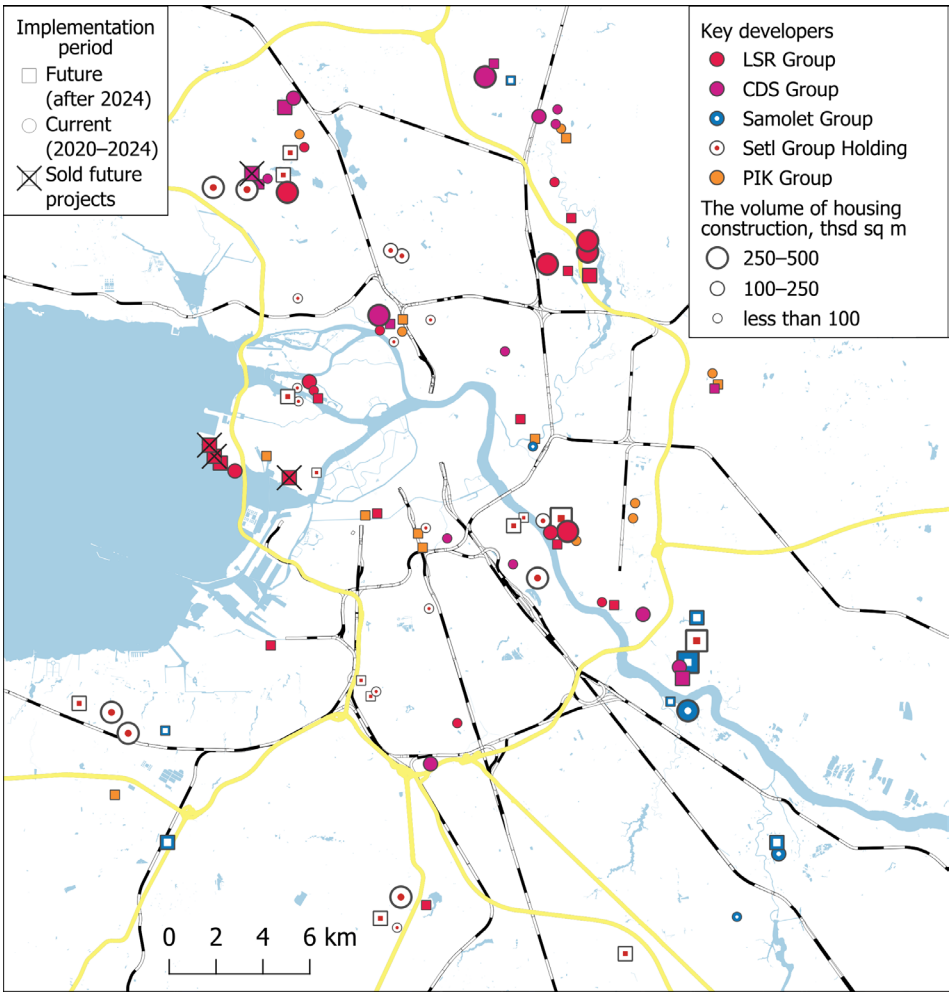


Fig. 5. Territorial structure of apartment complexes of the largest developers in the St. Petersburg agglomeration market

Based on the data UHCIS.[1]

After 2024, the company continues the implementation of the *Gorod Pervykh* apartment complex in the village of Novosaratovka, with plans to construct

[1] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

approximately 360,000 square meters of residential space. Soon, another large-scale project is expected on land acquired in the village of Kolomyagi. The impact of the crisis in this context is evident in the company's decision to postpone the development of apartment complexes on this Kolomyagi site. During the crisis period, the company expanded the geographical scope of its projects, increasingly focusing on business-class developments within the so-called 'rust belt,' an area previously targeted by other developers. Examples include the *Svetlana Park* complex on the former site of the Svetlana plant and the *Strizhi v Nevskom* complex on the site of the former Trubostal plant.

Additionally, the company began implementing elite-class residential projects in some of the most commercially attractive locations within the rust belt. These include *The One* and *Petrovsky Kvartal na Vode* on Petrovsky Island, as well as the *Imperial Club* complex on the Lieutenant Schmidt Embankment.

The 'grey' or 'rust' belt is a set of industrial zones that formed in the city on the Neva River by the beginning of the 20th century. At that time, these were the industrial outskirts of the city, but now they are closely adjacent to the historical centre of the territory, near waterways (Obvodny canal, Neva, Smolenka, etc.). This belt is of interest to buyers due to its proximity to the centre and the water factor (proximity to waterways), therefore, it is being built up with increasing intensity since the 2010s. A stimulating factor for the development of this area was the adoption of a new general plan of the city, in which more territories in the rust belt were transferred to a business and residential area.[1] It is important to note that this area is of particular interest to the developer due to its high level of infrastructural and social development. The presence of well-established transport and social infrastructure contributes to the objectively higher value of these territories. Expanding into the rust belt enables the company to reduce its dependence on the key interest rate, as projects in this area are targeted at a more solvent segment of demand [32; 33], thereby decreasing reliance on mortgage-based financing. In the long term, this strategic shift is expected to enhance the company's financial stability through diversification.

The LSR Group has been characterized by a broader geographical diversification of its projects. These include areas of mass residential construction, such as developments in the Ruchi district; business-class projects within the rust belt, such as the *Civilizatsiya* apartment complex located on the site of the former Reagent plant; elite-class developments, including *Neva Haus* on Petrovsky Island; and projects in the historical centre of St. Petersburg, such as the *Russkiy Dom* complex.

Since 2020, the company has also been actively engaged in the development of alluvial territories on Vasilyevsky Island, creating new land plots in the north-

[1] The Law of St. Petersburg-Dated December 21, 2023, № 785-169 "On Amendments to the Law of St. Petersburg "On the Master Plan of St. Petersburg". 2023, *Administration of St. Petersburg*, URL: https://www.gov.spb.ru/gov/otrasl/ingen/generalnyj-plan-sankt-peterburga/ (accessed 08.01.2025).

ern section and completing construction on remaining parcels in the southern section. Beginning in 2023, LSR Group initiated a notable restructuring of its project portfolio, which included the sale of two major land plots in alluvial areas, one site within the rust belt (the former Sevkabel plant), and another on Petrovsky Island. This strategic adjustment appears to reflect the company's response to a decline in financial performance during 2023 and 2024.[1] Most likely, the company cannot cope with the workload within the framework of the development of alluvial territories,[2] and also has one of the lowest housing sales rates among the developers under consideration (taking into account non-open sales of about 73 %) (Fig. 6).

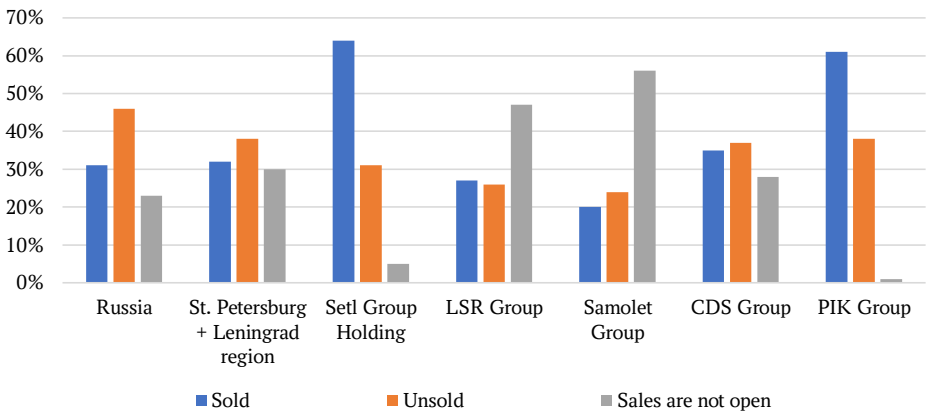


Fig. 6. Implementation of residential areas in apartment complexes of the largest developers, for December 2024

Based on the data UHCIS.[3]

The projects of the CDS Group are largely comparable to those of the Setl Group Holding in the segment of mass suburban residential construction. The company undertakes both large-scale developments in suburban areas — such as the *Novye Gorizonty* complex in Bugry, comprising 270,000 square meters of residential space, and the *Gorod Pervykh* complex in Novosaratovka, comprising 275,000 square meters — as well as medium-scale projects within the framework of joint development initiatives involving multiple developers. An example of the latter is the CDS *Dreamline* project in the Kolomyagi district. During the crisis period, CDS also began introducing projects within the rust belt; however, this

[1] Sales of St. Petersburg's largest developer have plummeted. 2024, *RBC*, URL: https://www.rbc.ru/spb_sz/18/10/2024/6712662c9a794763b27893e2 (accessed 08.01.2025).
[2] St. Petersburg is preparing a road network for new territories. 2023, *RBC*, URL: https://www.rbc.ru/spb_sz/28/03/2023/64228c9b9a794738586b0469?ysclid=m5r90006eg995279048 (accessed 08.01.2025).
[3] Unified Housing Construction Information System. 2025, *DOM.RF*, URL: https://наш.дом.рф (accessed 08.01.2025).

expansion occurred at a lower intensity compared to that of Setl Group Holding. Although on a significantly smaller scale compared to the LSR Group, there have nonetheless been instances of land plot sales with completed project documentation, in particular on the territory of Kolomyagi to Glorax[1] and the RBI Group.[2] The company is one of the largest companies developing land plots in the territory of Novosaratovka village. As a result, LSR Group has been selling off portions of its land portfolio (see Fig. 6).

In terms of the volume of ongoing construction in 2023—2024, Samolet Group of Companies (GC) outpaced the traditional market leader, PIK GC. Samolet GC is a relatively new entrant to the real estate market of the St. Petersburg agglomeration. The company primarily develops comfort- and standard-class residential projects in suburban areas and is currently the only developer engaged in urban renovation projects within St. Petersburg.[3]

Revitalisation projects account for approximately 60 % of the housing commissioned by Samolet Group; however, the majority of these projects are located in suburban or peripheral areas. Examples include the *Zhivi! v Rybatskom* complex in the Rybatskoye district, the *Novoe Kolpino* complex in Kolpino, and *Zhivi! v Kurortnom* in Pesochny. Samolet GC suburban projects within the St. Petersburg agglomeration are distributed across a wide range of territories, with the largest concentration situated near the village of Novosaratovka. Similar to LSR Group, Samolet is currently experiencing financial challenges. However, its land divestment activities have thus far been primarily concentrated in the Moscow agglomeration.[4] A gradual decline in the company's activity, including within the St. Petersburg agglomeration, can also be anticipated.

Until recently, PIK Group of Companies (GC) was the largest developer in the country in terms of housing under construction. Within the St. Petersburg agglomeration, the company is a relatively new market participant. Initially, PIK acquired land plots in the Kolomyagi district and within the rust belt. However, starting in 2020, the company expanded its activities by purchasing land and launching residential construction projects in the suburban areas of Yanino, Kudrovo, and

[1] "CDS" Group sold 5.76 hectares to Glorax in the Parkolovo project in Pargolovo. 2023, *Real Estate and construction of St. Petersburg*, URL: https://nsp.ru/36577-gloraks-kupila-576-ga-pod-zile-v-pargolovo-s-gotovym-razreseniem-na-stroitelstvo?ysclid=m5tzbzffss460775264 (accessed 08.01.2025).

[2] "CDS" group sold "RBI" group the second part of the apartment complex project in the north of St. Petersburg. 2024, *Business Petersburg*, URL: https://www.dp.ru/a/2024/10/23/cds-prodal-rbi-vtoruju-ochered?ysclid=m5tze4uqf0773635982 (accessed 08.01.2025).

[3] "Samolet" GC buys "SPb Renovation". 2025, *A single resource of developers*, URL: https://erzrf.ru/news/gk-samolet-pokupayet-spb-renovatsiya?utm=&tag=%D0%A0%D0%A%D0%9D-2023&ysclid=m5tzssv0p580945914 (accessed 08.01.2025).

[4] The developer "Samolet" GC put up for sale a part of assets for 8 billion rubles. 2025, *Forbes*, URL: https://www.forbes.ru/biznes/514829-developer-samolet-vystavil-na-prodazu-cast-aktivov-za-8-mlrd-rublej?ysclid=m5u0x701u099244980 (accessed 08.01.2025).

Novosele.[1] Further, in 2023—2024, the company acquired land plots in the rust belt zone, switching to its classic redevelopment strategy, which the company implements in the Moscow agglomeration. Compared to LSR Group, the company was less active in selling land plots with finalized documentation. Nevertheless, selected divestments occurred, including a site near the Borovaya railway station in the rust belt (2023) and a plot in the suburban area of Yanino (2024).[2]

A general trend observed among the largest developers — excluding Setl Group Holding — over the past one to two years has been the sale of land plots, including several with finalized project documentation. These plots have been primarily acquired by developers specializing in business-class residential construction, such as the RBI Group and Legend Holding. This trend is most pronounced in the case of LSR Group. Concurrently, during the pandemic period, developers expanded the geographical scope of their business- and elite-class projects within the rust belt, a practice that continues to this day — most notably in the case of Setl Group Holding.

## Results and discussion

Based on the review of data from the UHCIS and information received from mass media, several factors of the current crisis in the housing construction industry caused by hard anti-Russian sanctions can be identified (Table 1).

Based on the systematized responses of developers (Table 2), the principal effects of the hard anti-Russian sanctions — shaping the adjustment trajectories of spatial strategies among key market players — can be summarized as follows:

• The most pronounced effect of the sanctions has been the withdrawal of foreign companies from the residential real estate market of the St. Petersburg agglomeration. Their assets, including ongoing and planned projects, were acquired by major domestic developers. A notable example is the acquisition of the Finnish YIT Corporation's assets by the Etalon Group.[3]

• Changes in the financial sector indirectly related to anti-Russian sanctions have a broader effect on the market. The rise in the cost of loans leads to a decrease in the interest of large developers in projects in the suburbs, with large volumes of residential space for sale, but a greater role of mortgage lending (according to the UHCIS). The aim of these reactions is primarily to optimize the pools of projects and land plots from such major developers as the LSR Group and the CDS Group.

[1] GC "PIK" hour has arrived in the Leningrad region, Kommersant St. Petersburg. 2020, *Kommersant*, URL: https://www.kommersant.ru/doc/4557375?ysclid=m5u440o6dl308644775 (accessed 08.01.2025).

[2] Land under construction near St. Petersburg has changed its owner. 2024, *RBC*, URL: https://www.rbc.ru/spb_sz/03/04/2024/660d42849a79472e865aa620?ysclid=m5u4hptm1r565207763 (accessed 08.01.2025).

[3] Major St. Petersburg developer buys Russian assets of YIT. 2022, *RBC*, URL: https://www.rbc.ru/spb_sz/01/04/2022/6246adfc9a794741723e1678 (accessed 08.01.2025).

*Table 1*

**Adaptation strategies of residential real estate developers in response to the post-2022 sanctions-induced crisis**

| Crisis factors | Reaction to the factor | Group of developers 1 | Group of developers 2 | Additional factors | Impact on agglomeration |
|---|---|---|---|---|---|
| Increase in the discount rate, cancellation of preferential mortgages, and increase in the cost of project financing | Increased activity in the business and elite class housing sector | Expansion of the geography of construction and land bank in the rust (grey) belt for the largest developers | Activation of developers in the business and elite class segment, and purchase of land from the largest developers | A new master plan with new residential areas in the rust (grey) belt, and the release of money from escrow accounts from developers | Accelerating the redevelopment of the rust (grey) belt and expanding the diversity of apartment projects |
| | Abandoning projects in the suburbs that are most dependent on mortgage loans | Sale of land plots with ready documentation by large developers | Purchase of land plots by companies specializing in suburban areas | Less and less transport accessibility of new apartment complexes in the suburbs, and the growing popularity of residential housing | A decrease in the pace of suburban development by apartments and the development of single-family housing in the suburbs |
| Changes in income levels between Russian regions | Expansion of the geography of projects outside the agglomeration, and the entry of developers into new markets | Large-scale entry into new markets: "Etalon" group, to a lesser extent the Glorax company | The arrival of large developers from other regions to the market: business and luxury class *Brusnika*, comfort class with the development of suburbs A101 GC | Striving to diversify companies' projects to increase stability | Increasing the stability of local developers, increasing diversity through new and possibly new standards in the housing market |
| Complication of the activities of foreign companies (primarily from unfriendly countries) | Withdrawal of foreign developers from the St. Petersburg agglomeration market | De facto withdrawal of business and luxury class housing companies from the market: Bonava and YIT | Acquisition of foreign companies: YIT by Etalon Group, Bonava by FSK Group | The decrease in the attractiveness of the RF market due to the unstable exchange rate of the national currency, and low growth in real incomes | Reducing the influx of innovations and the formation of new standards from foreign companies |
| Difficulties with supply chains and labour recruitment | Support for developers by changing the regulatory framework | The warranty period for an apartment in a new building is reduced to 3 years (instead of 5), the penalty for failure to correct defects is 5 % of the amount of the lawsuit for the developer (previously — 50 %), etc. | | Reduced labour availability due to structural changes in the labour market | Possible reduction in the quality of projects by some developers (while maintaining their stability) |

• Developers are showing growing interest in the rust (grey) belt, which is increasingly positioned as a zone of high investment potential. However, this area typically requires substantial capital expenditures to remediate the consequences of former industrial use. This trend is evident both among the largest market players (e. g., the Setl Group holding) and among smaller developers specializing in business- and elite-class residential projects.

• In addition to the change in the geography of projects in the St. Petersburg agglomeration, it is typical for local developers to enter other markets, primarily million-plus cities, as well as the agglomeration market. They are also trying to support the industry institutionally by changing the regulatory framework towards developers.

*Table 2*

**Adaptation strategies of developers in St. Petersburg and the agglomeration zone**

| Adaptation strategy | Strengths | Weaknessess |
|---|---|---|
| A spatial expansion strategy (for local developers) involving the most "expensive" and infrastructurally attractive urban areas, including the rust (grey) belt zones, with a focus on the new middle class ("military–industrial complex", military families, IT specialists, young families) | Consolidation of urban space / Increasing returns from urban land<br><br>Increasing returns on land acquired in the central districts of the city / increasing tax deductions | High costs for the developer to "clean up" land plots / Load on transport networks and social infrastructure<br><br>High customer requirements / Increased social activity<br><br>High cost of projects / Risks of completion and connection to utility networks |
| The strategy of "developing the Northern Capital" for federal and regional developers from other regions: business and elite class in the development of the suburban area (the coastal part of the Gulf of Finland and the "palace suburbs") | Increased competition in the market with higher quality and lower price, expectation of innovative solutions / Selective selection of business partners | Increased social segregation in the most attractive suburban areas/<br>High risk of long-term return on investment |
| The strategy of expansion of local developers into the suburban area through the purchase of land for further development through low-rise projects and "niche projects" | Targeting solvent groups of the population (government support) / Releasing resources | Increased spending on infrastructure development and branding / Withdrawal of major projects to the Leningrad region |
| The strategy of phasing out the largest economy class neighborhoods in "commuter towns" (Bugry, Kudrovo, Murino, etc.) | Higher cost of projects and facilities with higher profitability / Reduction of social, transport and other tensions | Customization and more visible investments in branding projects in the city / Increasing shortage of labor and decrease in daily migration (decrease in income of the transport sector) |

The difficulties in developing the suburbs in the current crisis are vividly demonstrated by the situation with the A101 Group of Companies. This is a Moscow-based company specializing in construction in the middle suburbs of Moscow (further than the Moscow ring road), initially announced three major projects in the St. Petersburg agglomeration: in Vsevolozhsk, Lagolovo village (the border of Krasnoe Selo and the Leningrad region) and Korpikulya village, near the town of Kommunar).[1]

As a result, the project in Krasnoe Selo is being implemented together with the Samolet GC, but there is no new information on the project in Korpikulya village.

It is important to note that, for the most part, the crisis factors act in conjunction with other factors that have been forming and developing in the market in recent decades. The problem with the decrease in transport accessibility of marginal territories in the agglomeration has been gradually growing over the past decade, which is associated with the slow pace of development of non-residential public transport [34]. Off-street transport is just an important factor in the development of multi-storey residential buildings in suburban agglomerations, providing quick access for pendulum migrants to the core of the agglomeration [35], and with proper planning allows the formation of areas with not only residential, but also business functions (within the framework of the transit-oriented development (TOD) [36]. At the same time, the volume of residential housing construction is growing in the country as a whole and in the St. Petersburg agglomeration in particular, including due to support from the government.

The desire to diversify projects is a common trend among economic actors in general. Low growth in real incomes of the population and fluctuations in the exchange rate in general have affected foreign companies since the crisis of 2014 [37], but it was the hard anti-Russian sanctions that led to their withdrawal from the market of the St. Petersburg agglomeration. The situation in the labour market is similar: a small generation born in the 1990s and early 2000s has been entering the workforce since the mid-2010s, and the migration growth seen since 2017—2018 has not compensated for the natural population decline [38]. In the context of the 2022 crisis, when the influx of immigrants has decreased and the number of the working-age population is decreasing, the shortage of labour in the labour market is growing [3]. This, in turn, increases costs in the construction sector [4].

At the same time as the crisis, housing construction began to be influenced only by the new general plan of the city, adopted *de jure* on 21 December 2023,[2] but *de facto* interested parties knew its main outlines earlier, through public hearings, etc. The incentive to publish new projects for developers was the result of

[1] Federal company begins large-scale construction in Leningrad region. 2022, *RBC*, URL: https://www.rbc.ru/spb_sz/21/09/2022/632b0f509a7947aa43cea11a?ysclid=m6i4tqqo6b139762415 (accessed 08.01.2025).

[2] The Law of St. Petersburg-Dated December 21, 2023 № 785-169 "On Amendments to the Law of St. Petersburg "On the General Plan of St. Petersburg". 2023, *Administration of St. Petersburg,* URL: https://www.gov.spb.ru/gov/otrasl/ingen/generalnyj-plan-sankt-peterburga/ (accessed 08.01.2025).

the project financing mechanism, namely, the return of funds from escrow accounts to developers (transfer of funds from banks from escrow accounts due to obtaining permission to commission an apartment building).

An additional feature of the crisis factors is their manifestation at different times. Factors such as the complication of the activities of foreign companies (primarily from unfriendly countries) and difficulties with supply chains and labour recruitment began to manifest themselves on the market as early as 2022 [4]. In turn, the change in income levels between the regions of Russia in the context of the growing role of the military-industrial complex, as well as the high salaries of contract soldiers and those mobilized, is gradually beginning to manifest itself in the regions from 2023 [3]. At the same time, the impact of an increase in the discount rate, the abolition of preferential mortgages and an increase in the cost of project financing began to manifest itself in 2024, but it would not have had such a serious effect in the absence of such drastic sanctions.

The trajectories of developers' adaptation to the housing market will ultimately affect the territorial development of the agglomeration as a whole. If we focus on the changes in the structure of developers' projects, then we can clearly identify the growing role of construction in the rust (grey) belt. This process is also actively taking place in the Moscow agglomeration and ensures, in general, greater involvement of territories in the urban fabric of the agglomeration core [39]. This process carries several risks for the development of the agglomeration.

Firstly, in redevelopment zones, residential projects are often located in close proximity to operating industrial facilities, albeit with consideration for established sanitary buffer zones. This spatial arrangement may pose certain risks to residents [40]. At the same time, it remains difficult to assess the number of people currently residing in these areas — and, by extension, the potential number of individuals who may require assistance — without access to large-scale datasets, such as those derived from mobile network data [41].

Secondly, in redevelopment zones, focusing on more solvent demand can lead to an increase in the number of apartments associated with investments by citizens and, ultimately, the exclusion of part of the new square meters from circulation, which also leads to a decrease in housing affordability [42] and an increase in urban inequality [43; 44]. The growth of the investment component in the housing market is one of the elements of the financialization of the sector as a whole, and the intensity of the process is related in particular to the difference in the benefits and risks of different investment areas in the country. For example, in China, investments in securities are considered riskier by investors than investments in residential real estate due to government regulation [45]. This phenomenon is also evident in the largest agglomerations of Russia, as evidenced by the dominance of Moscow residents in the structure of purchases in the primary housing market [7] and most likely the same in St. Petersburg.

In turn, a decrease in the volume of construction in the suburbs and the exit of large developers from them may reduce the pace of development of the suburban area as a whole.

The exit of large developers can lead to a decrease in quality standards between developers, as well as a decrease in diversity. An important deterrent to suburban development can be considered the increasing transport distance of new projects from off-street transport, as well as the increasing load on highways [34]. For the further development of medium-rise construction in the suburbs, developers need to develop agglomeration-level public transport. In such a situation, the source of funding is an important issue. The exception to this is Novosaratovka village, where high-rise buildings are acceptable for developers, and 158 thousand future residents are far from the St. Petersburg ring road and are unlikely to be provided with the necessary public transport in the future.[1]

It is important to note that the ambitious targets of commissioning 120 million square meters of housing annually by 2030 and increasing housing provision to 38 square meters per person by the same year are, under crisis conditions, likely to be achieved primarily through the efforts of housing and communal services. The development of residential housing in the territories adjacent to urban agglomerations is declared in the new spatial development strategy until 2030.[2] In the agglomeration, the volume of residential housing input by the population has been growing (from 1.14 million square meters in 2019 up to 2.70 million square meters only in January—November 2024). This has led to an increase in its share in total housing commissioning from 19.3 % in 2019 to 49.6 % by January—December 2024. The demand for residential housing among the population is also increasing, and success in meeting this demand depends on the policies of the authorities. This is evident in the example of the SFH suburbs of Belgorod. So far, in the agglomeration, the commissioning of residential housing is primarily associated with the middle and far suburbs in the format of 'second' housing, as evidenced by a more detailed examination of housing construction in the agglomeration (Fig. 7).

In Figure 7, the built-up consolidation means that new residential buildings have appeared inside the existing residential areas or on their borders. Built-up expansion means that these territories are relatively remote from the existing development zones as a whole (about 1—2 km), and residential housing complexes have appeared on them for the first time. The main increase in residential housing, based on the housing registry of the state information system of housing and communal services and remote sensing data from GHSL, falls on the middle and far suburbs. Accordingly, the potential of suburbanization has not yet been exploited in the agglomeration.

[1] Leningrad region urban planning council approves changes to the general plan of the Sverdlovsk settlement. 2023, *Kommersant*, URL: https://www.kommersant.ru/doc/5785943 (accessed 08.01.2025).

[2] Decree of the Government of the Russian Federation dated December 28, 2024 № 4146-r "On Approval of the Spatial Development Strategy of the Russian Federation for the period up to 2030 with a forecast up to 2036. 2024, *Electronic Fund of Legal and Regulatory Documents*, URL: https://docs.cntd.ru/document/1310767692?ysclid=m6ia3cblfn866343914 (accessed 08.01.2025).

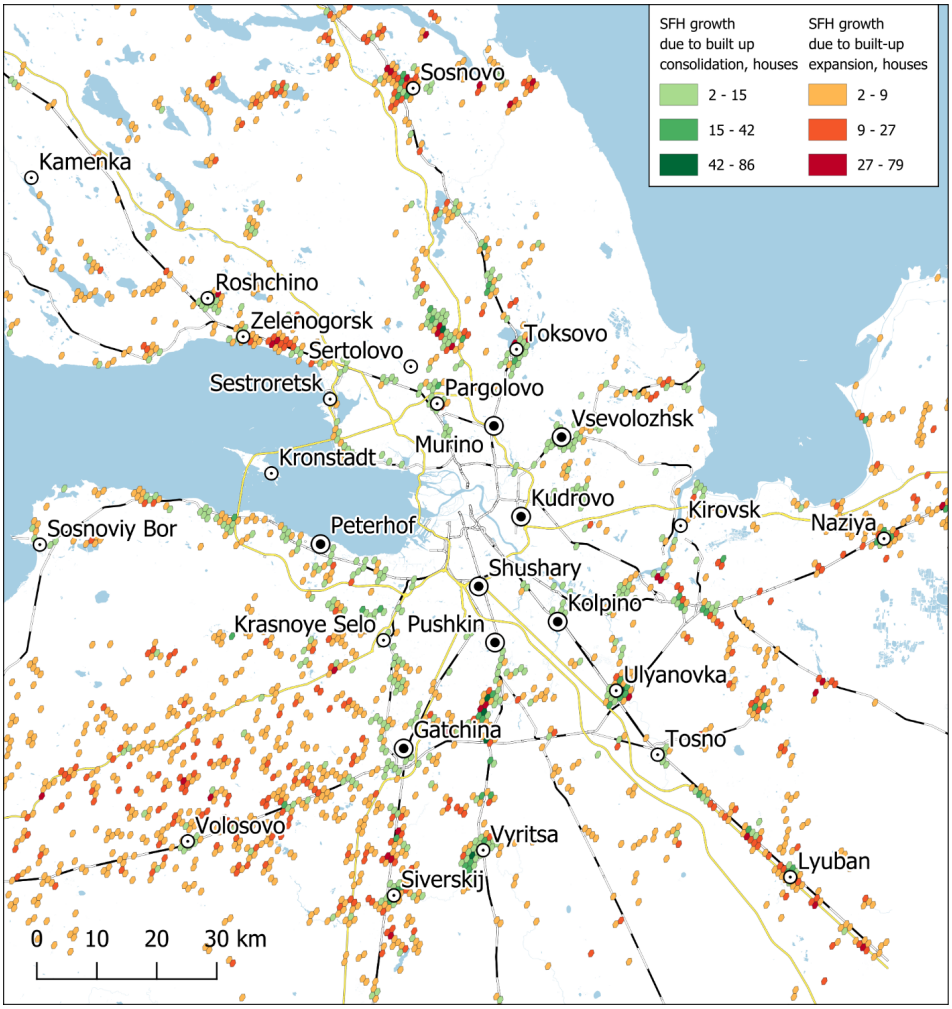


Fig. 7. Spatial structure of single-family houses (SFH) housing construction in the St. Petersburg agglomeration, for 2019—2024

*Source:* compiled by the authors based on the data housing registry of the state information system of housing and communal services.[1]

In order to sustain the growth in residential housing commissioning while simultaneously promoting construction in the near suburbs, it is essential to attract large-scale developers capable of ensuring the requisite level of infrastructure de-

[1] Register of housing stock objects. 2025, *Housing registry of state information system of housing and communal services*, URL: https://dom.gosuslugi.ru/#!/houses (accessed 08.01.2025) ; GHS built-up surface (R2023). 2023, *Global Human Settlement Layer*, URL: https://human-settlement.emergency.copernicus.eu/download.php (accessed 08.01.2025).

velopment in newly urbanized areas.[1] Consequently, the 2022 crisis, triggered by the imposition of severe anti-Russian sanctions, may catalyze the development of classical suburbanization in the suburbs of the St. Petersburg agglomeration and result in significant transformations in both the settlement system and traffic flows within the agglomeration.

## Conclusions

Anti-Russian sanctions have significantly impacted the housing construction sector, particularly apartment buildings. The adaptation strategies adopted by developers in response to these new conditions will ultimately shape the development trajectories of the country's largest agglomerations, notably the St. Petersburg agglomeration under consideration.

The most profound influence on market dynamics has been the alteration of the discount rate, which, although indirectly, was substantially affected by the sanctions and the ensuing economic transformations. During a period marked by a pronounced divergence between the official discount rate and the preferential mortgage program rates, developers intensified their activities; however, the spatial patterns of development shifted.

Developers increasingly focused on exploring the grey belt zones located within the agglomeration's core, as this strategy reduced their reliance on mortgage lending. Projects in the rust belt areas were predominantly business-class, with elite-class developments occurring less frequently. Among the largest developers, only the Setl Group Holding successfully secured a dominant position within this niche. Concurrently, business-class developers — such as the RBI group and the Legend Holding — markedly expanded their activities. Collectively, these trends contribute to the deeper integration of grey belt territories into the urban fabric, albeit accompanied by inherent risks related to speculative apartment market growth.

In contrast to the rust belt, the share of construction in the suburbs decreased. Mortgage lending allowed developers to actively implement large-scale projects in suburban areas such as Murino, Kudrovo, etc. In the context of declining mortgage availability (against the background of rising discount rates), developers began to change their approaches to suburban areas. The largest developers have increasingly engaged in the sale of land plots, including those with ready-made documentation. Meanwhile, the overall number of actively developed zones remains largely unchanged. In practice, Novosaratovka village stands out as the sole new development area, offering developers opportunities to implement profitable mass housing construction projects. Transport accessibility in the territory remains extremely low, which simultaneously sustains high demand and, given the persistently slow development of off-street public transport in St. Petersburg

[1] Trends in Individual Housing Construction 2.0. 2024, Strategy Partners, 46 p. (in Russ.), URL: https://strategy.ru/research/research/trendyindividualnogozhilischnoigostroitelstva57/ (accessed 11.11.2024).

and the Leningrad region, is likely to cause significant transportation challenges in the southeastern part of the agglomeration. Concurrently, the creation of new suburban areas has become nearly impossible, as evidenced by the slow pace of development by the A101 GC in Lagolovo and the apparent indefinite suspension of the project in the village of Korpikulya. Nevertheless, the diversity of developers in suburban areas has increased; although to a lesser extent, business-class developers and new market entrants have begun to expand their presence. This trend reflects their strategic efforts to enhance diversification.

Although not a prevailing factor, the direct impact of sanctions — manifested in restrictions on the operations of foreign companies — has nonetheless influenced the residential real estate market. As a result, foreign companies such as YIT and Bonava exited the market, transferring their assets to domestic developers. Ultimately, the role of residential development in the grey belt has grown within the agglomeration, while the importance of suburban territories has diminished. At the same time, operational statistics already indicate a decline in the commissioning of multi-family housing in both St. Petersburg and the Leningrad region. This reflects a response to weakening demand, particularly associated with the decreasing affordability of mortgage loans. From the perspective of agglomeration core development, this trend may be viewed as favourable for St. Petersburg. However, it simultaneously constrains the prospects for achieving national housing provision targets within the agglomeration as a whole. Furthermore, individual housing construction remains largely absent in the near suburbs, preventing the emergence of classical suburbanization processes. Given the strong link between housing affordability and the migration attractiveness of the agglomeration, a further slowdown in population growth is likely. This trend is unfolding in parallel with structural changes in the transport, logistics, and manufacturing sectors, also triggered by the imposition of hard anti-Russian sanctions.

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# SCIENTIFIC COOPERATION OF RUSSIA (1990—2024): A COMPARATIVE STUDY OF THE BALTIC AND INDIAN REGIONS

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*The article explores the reorientation and transformation of Russia's international scientific cooperation across its eastern and western strategic axes. This study is relevant due to the practical emphasis on international scientific cooperation as a necessary condition for the advancement of modern science. The objective of the research is to evaluate the restructuring of Russia's international scientific ties over the past 30 years at the macroregional level. The methodology employed is based on spatial scientometrics, which enables the geographical analysis of science using extensive bibliometric data. The study focuses on the Baltic and Indian regions and covers the period from 1990 to 2024. The data source is Scopus international database. The results obtained allow for conclusions regarding the position of the macroregions globally, in terms of the growth of scientific knowledge, the contribution of individual countries to the macroregional dynamics of publication activity, and the degree of Russia's integration into the scientific spaces of the Baltic and Indian regions. It is demonstrated that the Baltic region holds a stable global position in terms of the number of academic publications, exhibiting a slight but steady annual increase alongside high scientific productivity. Conversely, the Indian region is more dynamic scientifically but shows a greater centralisation of scientific activity and comparatively lower productivity. Russia participates in scientific collaboration with both macroregions. Collaboration with Baltic region countries has experienced stagnation, which has intensified since 2022. In contrast, joint publication activity with coun-*

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*tries in the Indian region has shown notable growth. This underscores the need for further qualitative research to achieve a more comprehensive understanding of the evolving global geography of science and Russia's role within it.*

**Keywords:**
geography of science, spatial scientometrics, scientific publications, scientometric analysis, publication activity, Baltic region, Indian region, Russian-Indian cooperation, turn to the East

## Introduction and problem setting

Russia's pivot to the East, accompanied by a marked shift towards broader engagement with developing nations, has sparked debate about its causes and implications for the country [1; 2]. It has been argued that the reconfiguration of international ties in favour of the fast-growing countries of Asia, South America and Africa is a natural process reflecting a long-term trend towards the redistribution of global geopolitical, economic and technoscientific power [3]. It is suggested that Russia should not only take into account the de facto redistribution of power and the growing prominence of developing countries, but also strengthen its role in their research and technological agendas. An alternative perspective highlights the involuntary nature of this restructuring of ties [4; 5]. The central argument is that the opportunity to engage with China, India, Brazil, Iran and other countries of the Global South has always existed. Yet, Russia — like most countries of the Global North — continued to adhere to an established model of cooperation centred around traditional Western power hubs — the US, the United Kingdom, Germany and France.

The narrowing gap between the North and the South, the weakening of Anglo-Saxon global dominance, and the formation of a new world order with multiple growth poles indicate the peril of artificially preserving the current development path. Conversely, altering this trajectory proves highly challenging and acutely sensitive due to the ingrained resistance of a deeply entrenched system [6]. In this context, the concept of 'new development trajectories', once popular in the 1980s [7], has regained contemporary relevance in Russia and internationally. For most governments, the challenge in formulating a national development strategy lies not in returning to the pre-crisis state (i. e., achieving stability), but in adapting to present and emerging circumstances over the medium to long term, ensuring the effective transformation of the system within a new framework of connections (i. e. resilience).

This study aims to examine the ongoing transformations shaping Russia's scholarly connections. Particular attention is given to evaluating Russia's engagements with the Baltic and Indian macro-regions. The Baltic area has historically been a hub of collaboration for Russia and a focal point due to the presence of global leaders in research, technological and innovation rankings (e. g.,

the European Innovation Scoreboard).[1] The Indian macro-region is considered a promising avenue for cooperation, with India, Russia's strategic partner and the world's most populous nation, at its core. Despite the long-standing history of the Russian-Indian partnership, often described as stable ('this bond is so strong that it is difficult to break' [8, p. 70]), recent events have intensified the focus on the cooperative agenda between the two countries. During one year, from 2021 to 2022, Russia advanced from 25th to 7th place in trade volume with India, boosting its trade turnover to $18 billion [9]. Thus, it is reasonable to propose that the growth of bilateral economic relations is fostering potential for further areas of Russian-Indian cooperation, including in science.

The following section provides an overview of studies documenting the current changes in the global distribution of research contributions. The methodology section outlines the protocol of this study, using spatial scientometrics to analyse territorial patterns of international research collaboration. The study is based on data from two macro-regions — the Baltic and Indian. The results are organised into three subsections. The first discusses the position of the Baltic and Indian regions as major centres for research and their changing influence on the growth of knowledge. The second presents data on the contributions of individual countries to the macro-regional publication patterns. The third evaluates Russia's involvement in research cooperation with countries from the Baltic and Indian regions. The work concludes with key findings on the role of the West and East in shaping Russia's international academic connections and provides recommendations for potential avenues for future research.

## Theoretical framework

The effective functioning of a country's national innovation system requires several essential conditions, which can be grouped into three categories:

— developed scientific, educational and industrial sectors (including high-tech and capital-intensive enterprises with high added value) and a system of dedicated state institutions;

— a supportive institutional environment that fosters multilateral connections between academic, corporate, governmental and non-profit structures;

— an extensive network of international cooperation, operating on mutually beneficial terms and facilitating the diffusion of knowledge and innovations.

This final point is of particular relevance to the present study. Recent findings confirm the thesis that research is becoming increasingly complex, as the resources of a single country are no longer sufficient for innovation [10; 11],

[1] European innovation scoreboard. Research and innovation, *European Commission,* URL: https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en (accessed 11.11.2024).

while the innovation process itself is characterised by nonlinearity and glocalisation [12]. The presence of connection points between domestic systems at various levels and international scientific, technological and innovation clusters (the so-called 'knowledge pipelines' [13]) plays a critical role in national innovation development.

Despite the apparent decline in the territorial determinism of knowledge, partly due to the emergence of digital access to research results, the competencies for its reproduction, expansion and application remain closely tied to specific research organisations and teams [14]. The US and Western European countries have the most established scientific and technological systems, which for a long time enabled them to dominate as global centres for the production of new knowledge [15; 16]. However, the global research landscape is evolving: the balance of power is slowly shifting, and research is increasingly centred in developing countries. Since the late 20th century, there has been mounting discussion of a pivot in global science towards the East [17], particularly evident in the fields of space exploration, aviation, telecommunications, nuclear energy and high-speed transport [18].

The race for new knowledge [19], fuelled by the growing number of countries adopting a knowledge-based economy [20], has highlighted the need for developing nations to bolster their research and technological capacity. The first shift was marked by Japan's rapid growth, followed by Taiwan, Hong Kong, Singapore and South Korea — the newly industrialised countries of East Asia and full participants in the global competition [21]. However, Singapore and Hong Kong have already begun to lose their competitive edge as international competition in research intensifies [15]. In 2012, China overtook South Korea and Taiwan in the volume of publications [21], and it now surpasses the US in overall research output.

Since 2015, the BRICS countries (Brazil, Russia, India, China and South Africa) have accounted for over a quarter of global research publications, emerging as alternative centres of 'new knowledge production, modern technology and innovation-driven development' [22, p. 1116], while the rise of East Asian innovation systems has diminished the global share of the US, the EU and Japan in generating research publications and patents [23]. The growing research activity in China, India and South Korea has significantly disrupted the global balance of publications [24, p. 121]. While in 2015 the eastern presence was still emerging and India had yet to awaken [24], the situation changed markedly a decade later.

Since the early 21st century, research has become less polarised, with a growing trend towards its redistribution as developing countries enhance their research and technological capacities [25].

Interest in the Global South as an academic partner has grown, both from within these countries and the West [26]. Yet, building such ties is complicated not only by the lack of geographic proximity between the Global North and South but also by their social and cognitive divergence [27]. For many years, Russia concentrated its efforts on integrating into the Western academic community, participating in major joint projects [28], securing broad representation in leading international citation databases and entering global university rankings (QS, THE, ARWU), among other initiatives. The current context of heightened geopolitical tensions has amplified the need to expand and restructure research collaboration to align with the new geography of knowledge production.

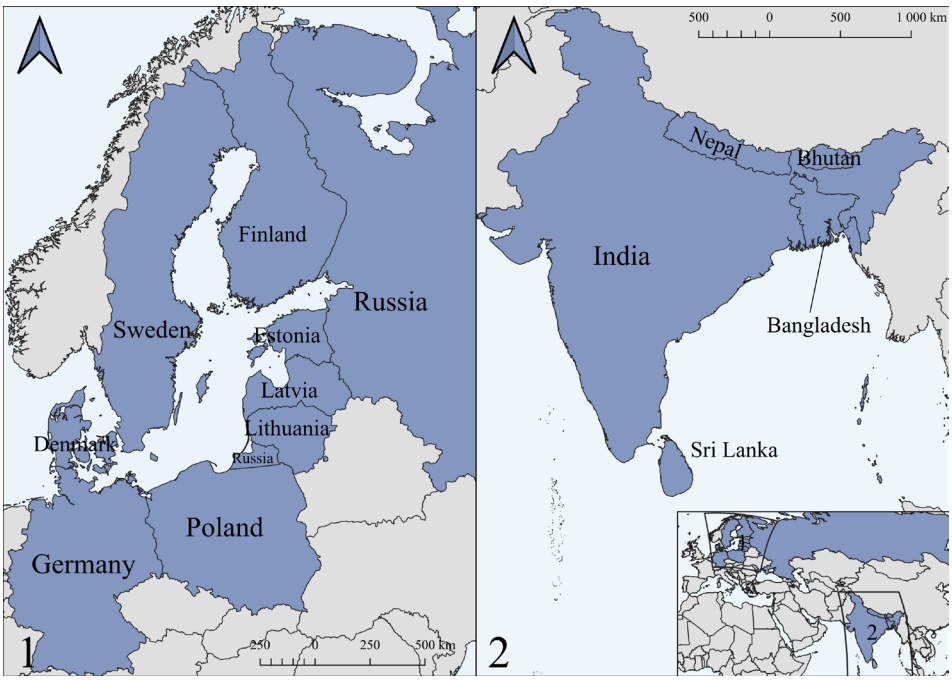
## Data and methodology

*Geographical scope*

The spatial scientometric assessment of Russia's international scholarly collaboration in the West (Europe) and East (Asia) focuses on two macro-regions defined by cultural and historical commonalities — the Baltic and Indian regions (Fig. 1). The Baltic region includes Russia and eight other countries — Germany, Poland, Denmark, Sweden, Finland, Lithuania, Latvia and Estonia, while the Indian region comprises five countries: India, Sri Lanka, Bangladesh, Nepal and Bhutan.[1] According to the Worldometers statistical service, as of 2024, the countries of the Baltic region, excluding Russia, account for 20.3 % of the total population of Europe, and the countries of the Indian region account for 35 % of the total population of Asia, making these macro-regions significant areas for the accumulation of human and intellectual capital.

Germany, Sweden, Denmark and Finland — the most advanced countries of the Baltic region — not only rank among the world's top performers in research output but are also deeply integrated into international scientific and technological cooperation [30]. They are also among the countries recognised as global leaders in innovation [31], distinguished by substantial investment in research and development, both in absolute terms and relative to GDP, and by a high number of researchers measured in full-time equivalents [32]. The outflow of academic talent and highly skilled workers from the Baltic States has contributed to strengthening the region's northern and western countries, as around half of those who emigrated from Lithuania, Latvia and Estonia in the early 2000s remained within the macro-region, rapidly integrating into its research and innovation networks [33]. While the Baltic States possess more modest research and technological capacities than other countries in the region [31], they still surpass, for example, those of Central Asian countries [34].

[1] Gogolev, F. 2019, Sovremennye makroregiony: problemy klassifikatsii [Contemporary Macrorregions: Classification Issues]. June 4, 2019. *Russian International Affairs Council*, URL: https://russiancouncil.ru/blogs/svfu-experts/sovremennye-makroregiony-problemy-klassifikatsii (accessed 11.11.2024).




*a* *b*

Fig. 1. Geographical scope of the study: *a* — Baltic region; *b* — Indian region

The principal country within the Indian region is India. According to the World Bank,[1] the country ranks fifth globally in terms of GDP, behind only the US, China, Germany and Japan. In the Nature Index[2] of the top countries in research, India outperformed Australia, Italy and Switzerland, securing 9th place overall and 8th in the natural sciences. In the Global Innovation Index,[3] India is listed 39th among 133 countries and ranks first in Central and South Asia. As one of Asia's most influential states, India consistently extends its interests to neighbouring countries. As early as 1979, it articulated a policy of regional dominance in South Asia [35], which later evolved into the Look East foreign policy strategy with a broader geographical scope [36]. The institutional framework for cooperation in the macro-region was laid with the establishment of the South Asian Association for Regional Cooperation (SAARC) in 1985. Its principal aims included fostering the socio-economic development of the territories of historic

[1] *World Bank Data Catalogue, Gross domestic product ranking table*, 2023, URL: https://datacatalog.worldbank.org/search/dataset/0038130 (accessed 11.11.2024).

[2] *The Nature Index 2024 Research Leaders*, 2024, URL: https://www.nature.com/nature-index/research-leaders/2024/country/all/global (accessed 11.11.2024).

[3] *Global Innovation Index 2024*, 2024, URL: https://www.wipo.int/gii-ranking/en/india (accessed 11.11.2024).

India [36], establishing a free trade area [37] and advancing a unified educational space [38]. In the 1990s, cross-border cooperation within the macro-region gathered pace, driven chiefly by India, Bangladesh and Sri Lanka, and led to the formation of a zone of mutual gravitation [35]. In 2012, India's Ministry of External Affairs established a dedicated Development Partnership Administration, tasked with grant funding, investment and oversight of projects in neighbouring countries [35]. Thus, like the Baltic region, the Indian region is based not only on cultural and historical commonalities but also on institutional foundations shaped by current foreign policy agendas.

The Baltic and Indian macro-regions were selected as objects of this study for several reasons.

First, the countries in each grouping are geographical neighbours connected by cultural ties and shared historical experience — factors that support the development of a sustainable macro-regional research and innovation system involving these states. The social and cognitive affinity among researchers seems to be equally vital to knowledge exchange and the development of academic networks [27] as geographical and infrastructural proximity [39]. Until 2022, Russia was deeply integrated into the Baltic region, including through participation in initiatives addressing Baltic Sea-related issues. Although the Indian region does not include Russia, Soviet cultural codes, as Tatyana Erokhina notes [40], continue to forge a strong bond between Russia and India, helping to overcome geographic distance and ease interpersonal connections. In this context, it is both relevant and useful to compare these two macro-regions in terms of their evolving academic ties with Russia. In this context, a comparison of the two macro-regions with regard to their evolving academic relations with Russia appears both interesting and constructive.

Second, both macro-regions' research systems include major drivers — countries that are global leaders in science. Germany holds a dominant position in the Baltic region, ranking 5th in the world in 2023 by publication output, while India leads the Indian region, ranking 3rd globally in the same year. These macro-regions thus offer a valuable framework for analysing the West–East dichotomy in Russia's academic relations, particularly at the level of rapidly developing leading global research centres.

Third, the Baltic and Indian macro-regions represent the western and eastern vectors of cooperation. The Baltic region unites Russia's traditional European partners, who have increased sanctions pressure since 2014, viewing Russia as a key threat to national security. The Indian macro-region, in turn, comprises rapidly growing, densely populated countries where cooperation takes place on mutually beneficial and equal terms, guided by a long-term partnership strategy.

### *Data collection and analysis*

This study of the research landscape and international research and technological cooperation is based on a spatial scientometric assessment of research output indicators. The analysis uses time series of geocoded data on the number of research publications, broken down by macro-regions and individual countries. The dataset covers the period from 1990 to November 2024.

This study relied on the international abstract database Scopus as its information source. This database was selected due to its multiple advantages for conducting international comparisons. First, it provides the necessary functionality to perform comprehensive search queries across various territorial levels. The availability of verified researcher and organisation profiles ensures high accuracy in matching affiliation data. Second, the database is accessible remotely through an application programming interface (API),[1] enabling integration with custom analytical tools to collect and export bibliometric data. A Python script was developed for API integration within the Visual Studio Code (VSCode) development environment. Third, this abstract database offers broad geographic coverage, including publications from developing countries in the Indian region. Fourth, the database is multidisciplinary, equally well indexing research outputs across all fields of knowledge. Fifth, unlike open databases, Scopus maintains a clear list of indexed publications, which are not only evaluated during selection but also subject to ongoing quality monitoring during indexing.

To ensure accurate data collection, a list of countries under study was compiled, with variations in their names matched against records in the Scopus database. Complex search queries were created for each macro-region to avoid duplication of publications when aggregating data by country. Collaborations were accounted for by considering both the share of a country's or macro-region's participation in Russia's total publications and Russia's share in the publications of the analysed country or macro-region.

The search query string used in the database to assess Russia's cooperation with the Baltic macro-region countries was as follows: *AFFILCOUNTRY ("Germany" OR "Denmark" OR "Latvia" OR "Lithuania" OR "Sweden" OR "Finland" OR "Estonia" OR "Poland") AND AFFILCOUNTRY (Russian Federation)*. The following string was used in the case of the countries of the Indian macro-region: *AFFILCOUNTRY("Bangladesh" OR "Bhutan" OR "India" OR "Nepal" OR "Sri Lanka") AND AFFILCOUNTRY(Russian Federation)*.

The search was not limited by document type, enabling the analysis of trends in diverse research outputs over an extended period. To assess spatial autocorrelation of research output within macro-regions, the spatial autocorrelation tool

[1] Elsevier Application programming interface, 2024, URL: https://dev.elsevier.com (accessed 11.11.2024).

(Moran's I) was used, calculated with GeoDa software. Due to the small number of objects, weights were assigned based on the distances between the centroids of countries. The weighted data were processed using the Univariate Moran's I algorithm. The index ranges from −1 to 1, where values close to zero indicate a random spatial distribution of the observed phenomena.

## Results

*The Baltic and Indian regions on the research map of the world*

At the present stage, the Baltic and Indian regions — identified based on cultural and historical commonalities — are major centres for research, both on a global scale and within their respective geographic macro-regions: Europe and Asia. However, an analysis of publication data over more than thirty years reveals substantial interregional differences in the pace of quantitative knowledge growth. Figura 2, *d* illustrates changes in the contribution of these macro-regions to the global publication landscape. Whereas the Baltic region's average share of global research publications remained relatively stable between 1990 and 2023, at 11.9 %, fluctuating between 9.8 % and 13.4 %, the Indian region markedly enhanced its research visibility, increasing from 1.6 % in 1990 to 8.6 % in 2024 (as of November).

At the level of geographic macro-regions, the disparity in knowledge growth, as reflected in publication output, has persisted between the Baltic and Indian regions. The Baltic region's contribution to Europe's total publication volume remained relatively stable throughout the period under review, averaging 35.6 %. The Indian region's share in Asia's pool of research publications was more modest (13.2 % overall). Yet, after falling to 9.0 % in the early 2000s, it rose to 16.1 % of all Asian publications by 2024 (see Fig. 2, *c*).

Between 1990 and 2000, the Baltic and Indian regions exhibited a significant disparity in research publication output, with the latter lagging behind by a factor of six (see Fig. 2, *a*). In 1990, the Baltic region contributed 90,400 publications to the growth of knowledge, while the Indian region accounted for 15,200 publications. The largest gap, recorded in 1995 at 7.1 times, resulted from diverging trends: declining publication activity in the Indian region and growth in the Baltic region. Since the early 2000s, a trend toward convergence in annual publication volumes between the macro-regions has emerged, partly driven by increased publication activity in the Indian region (see Fig. 2, *b*). In 2023, the two macro-regions came closer in their annual contribution to the global publication volume: the Baltic region with 401,900 publications (365,700 excluding Russia) and the Indian region with 302,400 publications (see Fig. 2, *a*). Although data for 2024 are incomplete, it is evident that the Indian region continued to boost its publication performance, reducing the gap with the Baltic region to 1.3 times, or 1.09 times excluding Russia.

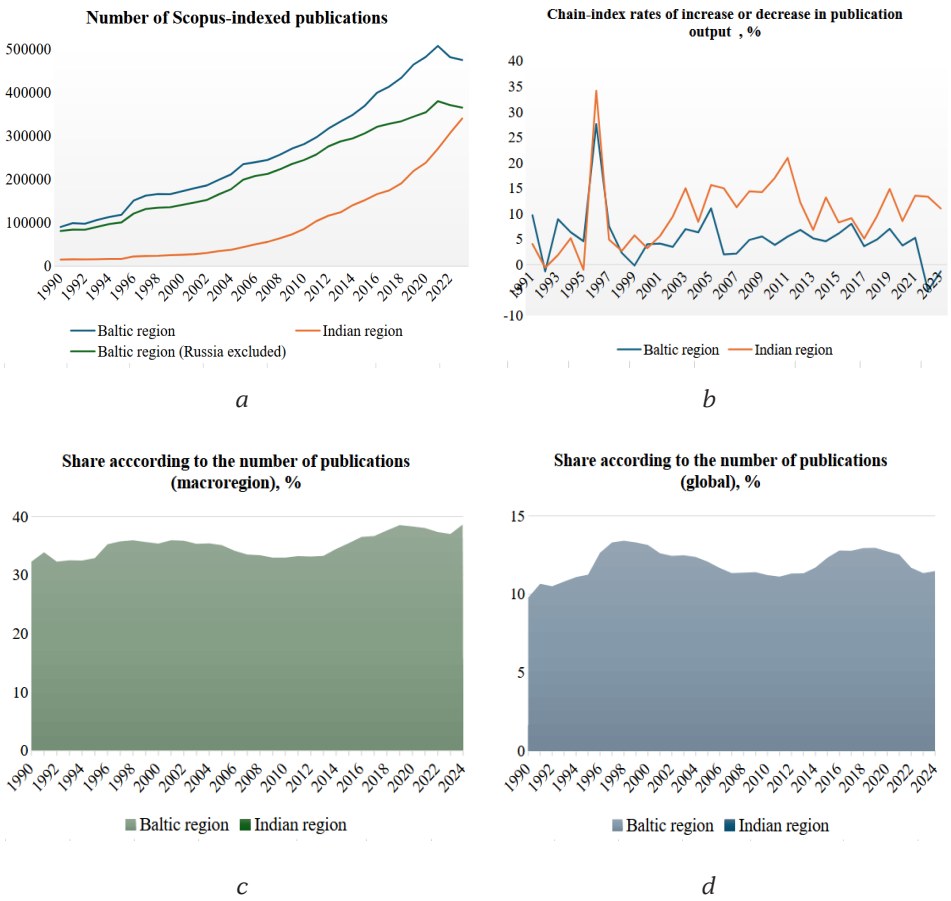



Fig. 2. Changes in the number of research publications in the Baltic and Indian regions, 1990 — November 2024

*Comment:* the indicators calculated for the Baltic region include data for Russia.

Prepared based on Scopus data.[1]

Thus, as a first approximation, assessing the West—East dichotomy in publication output growth across the examined macro-regions reveals a gradual restructuring of the territorial organisation of knowledge worldwide, with a tendency towards the East increasing its presence. In turn, this creates objective conditions for growing interest in expanding Russia's research cooperation with eastern countries as rapidly developing global research centres. Thirty years ago, the Asian avenue of international academic cooperation was less attractive to Russia due to the modest contribution of these countries (including those within the Indian macro-region) to the global quantitative growth of knowledge. Cur-

[1] Scopus, 2024, URL: https://www.scopus.com/ (accessed 11.11.2024).

rently, however, structural shifts have occurred in the global geography of knowledge: at the global level, China surpassed the US in publication output in 2020, while India overtook Germany in 2019 and the UK in 2022; at the macro-regional level, the Indian region nearly matched the Baltic region's publication volume, excluding Russia, in 2024.

*Contribution of individual countries to macro-regional research output growth*

For the examined macro-regions, Moran's I values were computed over time to evaluate the spatial autocorrelation of publication productivity per 100,000 population (Fig. 3). For most time intervals, negative values were obtained, indicating a dispersed distribution of countries within both macro-regions: the Baltic region and, after 2010, the Indian region. According to the constructed spatial Moran scatterplots, inter-country inequality in publication output within the Indian macro-region increased between 1990 and 2024, while remaining virtually unchanged in the Baltic region.

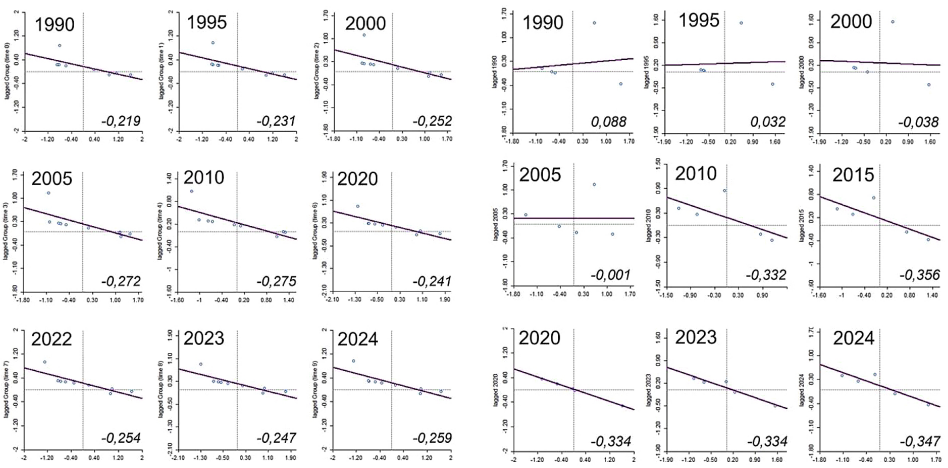



Fig. 3 Moran spatial scatterplots, 1990—2024: *a* — Baltic region; *b* — Indian region

Prepared based on Scopus data,[1] using GeoDa software.

Presented below is an analysis of individual countries' contributions to the macro-regional increase in publication performance and output (see Figs. 4 and 6). In the Baltic region, Germany is the main driver of the absolute growth in the number of research publications. The country ranks fourth worldwide in total research publications between 1990 and 2024 (4.66 million publications, or 6.4 % of the global total), surpassed only by the US, China, and the UK. In the

[1] Scopus, 2024, URL: https://www.scopus.com/ (accessed 11.11.2024).

Indian macro-region, India serves as the leading driver, ranking sixth globally in total publications over the period with 3.38 million publications, or 4.6 % of the worldwide total. Although both Germany and India show annual increases in publication volume, the growth rates differ. India has been expanding its research potential more rapidly year on year, surpassing Germany's publication count by 4.2 % in 2019. By 2023, this lead had increased to 53 %. Thus, in 2023, India entered the top three countries by publication volume, while Germany ranked fifth.

The spatial distribution of knowledge growth within the examined macro-regions is of particular analytical interest. The Baltic region shows less pronounced disparity in the distribution of publication volume among countries compared to the Indian region (see Figs 5 and 6). In different years, Germany accounted for 43 % to 60 % of all publications in the Baltic region, with a population share of 28 %. In contrast, India generated 93 % to 97 % of the Indian region's publications, while accounting for 86 % of its population. For both countries, however, the period under review is marked by a gradual decline in their contribution to the total number of publications across their respective macro-regions against the backdrop of a substantial increase in research output per capita: a threefold increase for Germany and an elevenfold for India.

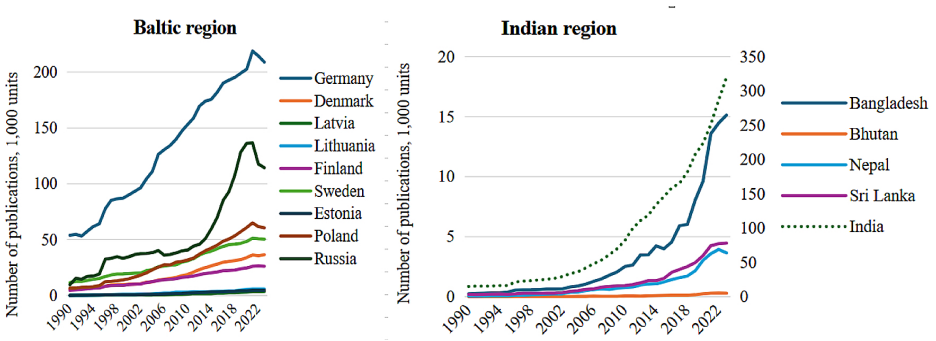



Fig. 4. Changes in the number of research publications in the countries of the Baltic (*a)* and Indian (*b*) macro-regions, 1,000 publications

Prepared based on Scopus data.[1]

Russia is the Baltic region's second-largest centre for research and the world's twelfth, with its share of publications standing at 17.4 % within the macro-region and 2 % globally in 2024. Compared to other Baltic countries, Russia's publication output is relatively modest, at 48.3 publications per 100,000 population. In 2024, this was the lowest figure among the Baltic countries but still higher than in the Indian macro-region, including Russia's strategic partner India, which recorded 19.4 publications per 100,000 population. Notably, following the launch

[1] Scopus, 2024, URL: https://www.scopus.com/ (accessed 11.11.2024).

of the state-run 5—100 academic excellence programme in 2012, aimed at supporting leading Russian universities, Russia experienced a marked increase in international publication output (see Fig. 4). However, since 2021, a reverse trend has been observed, driven by changes in the geopolitical environment and the severance of academic ties with Western countries, including those within the Baltic region.

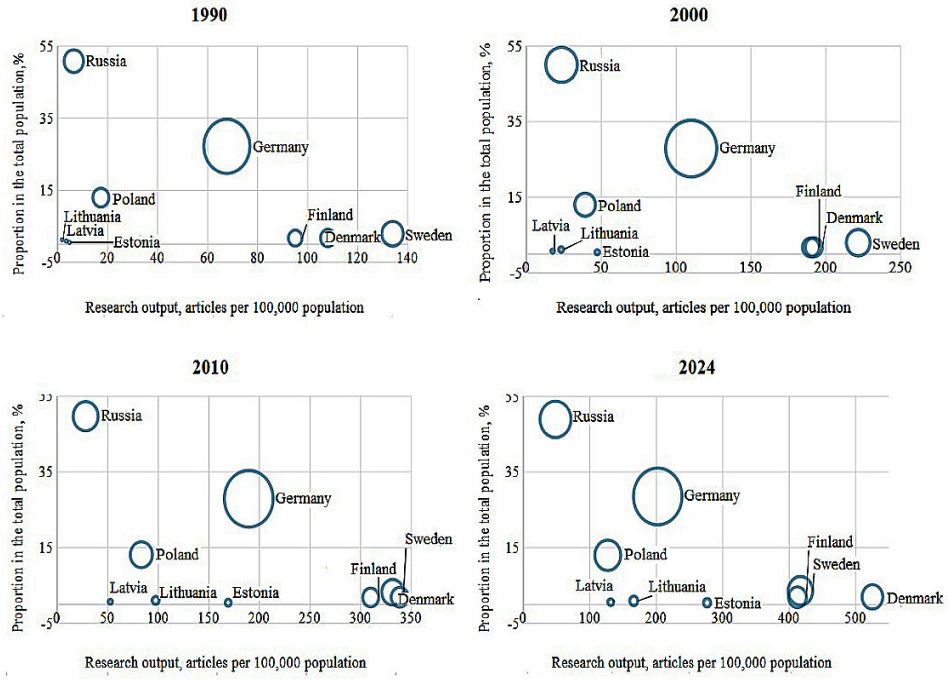



Fig. 5. Distribution of countries in the Baltic region by research output per 100,000 population

*Comment:* the size of the marker indicates the country's share of research publications within the macro-region, %

Prepared based on data from Scopus[1] and Worldometers.[2]

Poland deserves special mention, having significantly increased its research presence in the macro-region over the past thirty years and now accounting for up to 12 % of all publications in the Baltic region, compared to 7.3 % in 1990. It can be regarded as the macro-region's third-largest centre for research, concentrating considerable human and research potential. However, despite this growth, Poland's research output remains relatively modest at 127 publications per 100,000 population, comparable to Latvia, which lags considerably behind Poland in terms of resources.

[1] Scopus, 2024, URL: https://www.scopus.com/ (accessed 11.11.2024).
[2] Worldometers, 2024, URL: https://www.worldometers.info/ (accessed 11.11.2024).

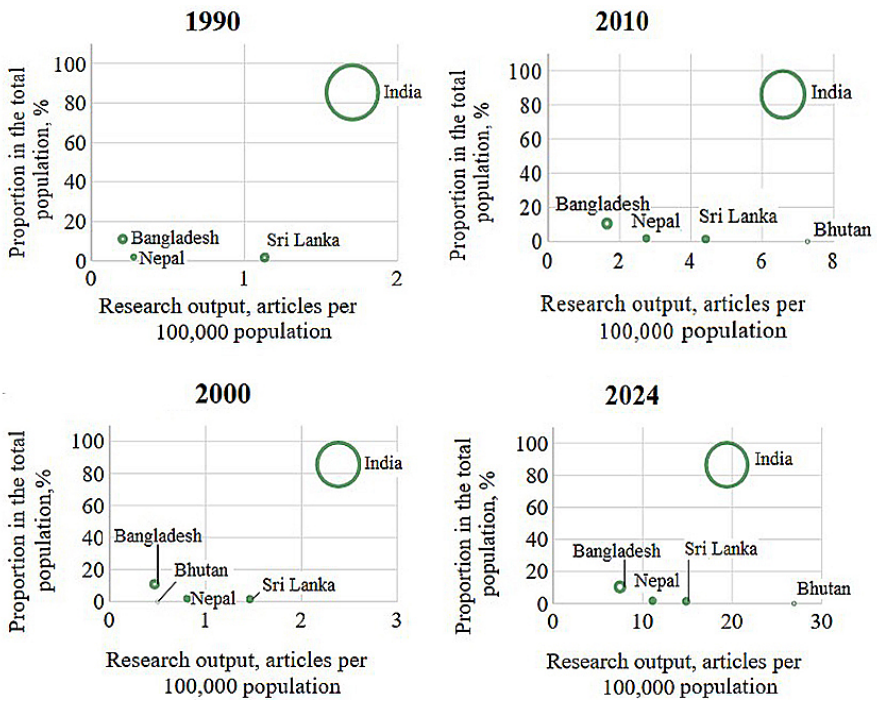



Fig. 6. Distribution of countries in the Indian region by research output per 100,000 population

*Comment:* the size of the marker indicates the country's share of research publications within the macro-region, %

Prepared based on data from Scopus[1] and Worldometers.[2]

The other countries of the Baltic region can be divided into two groups based on their quantitative contribution to knowledge generation. The first group comprises the Nordic states — Finland, Sweden and Denmark — which have traditionally maintained high levels of research output (over 400 publications per 100,000 population), with an average share of about 8 % of total publications and a population share between 2 % and 3 %. Between 2000 and 2010, Denmark overtook Sweden to become the regional leader in research output, reaching 525 publications per 100,000 population. Despite their relatively small populations, these countries sustain strong research visibility not only within the macro-region but also globally: in 2023, Sweden ranked 22nd, Denmark 29th and Finland 41st worldwide in terms of absolute publication numbers.

The second group includes the Baltics. With between 131 and 276 publications per 100,000 population in 2024, their research performance is rather modest com-

[1] Scopus, 2024, URL: https://www.scopus.com/ (accessed 11.11.2024).
[2] Worldometers, 2024, URL: https://www.worldometers.info/ (accessed 11.11.2024).

pared to their share of the total population of the Baltic region, standing at 1 % and 2 % respectively. Although the Baltic States can be considered peripheral to the region's research landscape, from 1990 to 2024, inequality in publication metrics among these countries increased, with Estonia gradually pulling ahead. By 2024, the country had surpassed both Germany and Poland in terms of research output.

As noted above, India constitutes the core of the Indian region's research system, while the remaining four countries hold peripheral positions. Their share in total publication output remains limited: Bangladesh accounts for 4.3 %, Nepal and Sri Lanka 1.1 % each, and Bhutan 0.1 %. In terms of absolute annual publication numbers, Nepal and Sri Lanka are currently comparable to the Baltic States, whereas Bangladesh exceeds them by an average factor of three. Nevertheless, research output levels in the Indian region remain low, with the vast majority of the population still excluded from the process of knowledge generation.

*Eastern and Western paths of Russia's research collaborations*

Between 1990 and 2024, Russia significantly increased the intensity of its international research cooperation, resulting in a growing number of research publications. The peak occurred in 2021, when international collaborations involving Russia yielded 30,500 Scopus-indexed publications. Over the past ten years, on average about 22.2 % (or 232,600) of Scopus publications affiliated Russian authors have been the result of cooperation with international researchers. Throughout the study period, countries from the Baltic and Indian regions have been Russia's research partners, although the intensity of this collaboration has varied (Fig. 7).

Overall, from 1990 to 2024, Russia issued 151,900 research publications in collaboration with countries of the Baltic region and 20,200 with countries of the Indian region. Russia's key research partner in the region is Germany, accounting for 68.7 % of all joint publications between Russia and Baltic region states (see Fig. 7). Poland ranks second in terms of collaborative publications (17.9 %), followed by Sweden (14.7 %) and Finland (12.9 %). Denmark and the Baltic States have been the least engaged in published joint research with Russia. India is Russia's main partner in the Indian region, driving the overall publication trend. Between 1990 and 2024, India accounted for 96.6 % of all co-authored publications between Russia and the Indian region, with 75 % of them published in the past decade. The shares of the other countries in the region remain small, with Sri Lanka standing at 5.2 %, Bangladesh 4.1 %, Nepal 2.0 % and Bhutan 0.2 %.

Thus, in each macroregion under consideration, Russia had one key partner, and collaboration with them largely defined the overall trend. Accordingly, research output patterns in the Baltic and Indian regions after 2022 were shaped to a significant extent by shifts in Russia's international collaboration with Germany and India. Between 2021 and 2023, the number of Russia's joint publications

with the Baltic region declined by 49 % (including a 47 % drop with Germany), while collaboration with the Indian region remained stable (including India, with only a −0.2 % change).

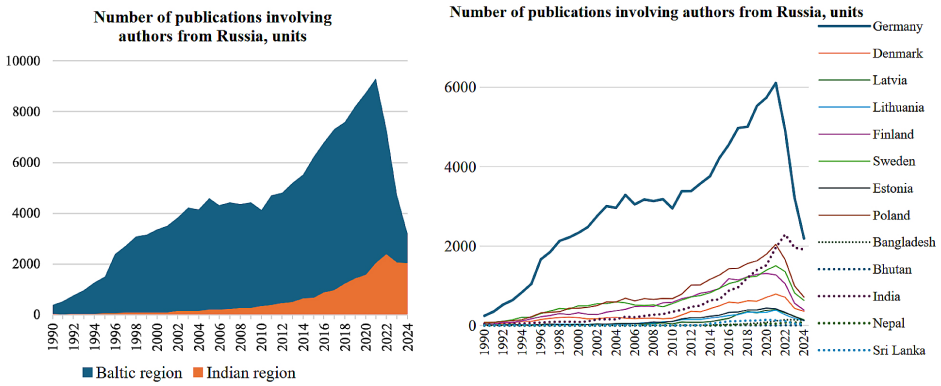



Fig. 7. Changes in the publication of collaboration between Russia and the Baltic* and Indian regions, 1990—2024, number of publications

*Comment:* *Russia was excluded from calculations for the Baltic region to avoid duplication.

Prepared based on Scopus data.[1]

Figura 8 shows changes in the share of Russia and the countries of the Baltic and Indian regions in each other's publication portfolios.

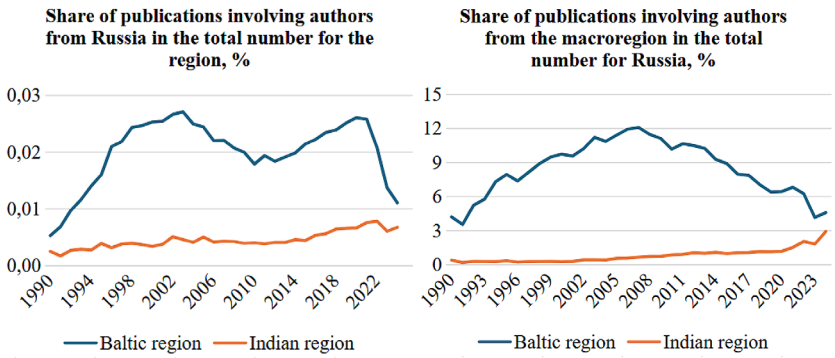



Fig. 8. Mutual contribution of Russia and the Baltic* and Indian regions to each other's publications, 1990–2024, %

*Comment:* *Russia was excluded from calculations for the Baltic region to avoid duplication.

Prepared based on Scopus data.[2]

[1] Scopus, 2024, URL: https://www.scopus.com/ (accessed 11.11.2024).
[2] Ibid.

It is particularly worth noting that collaborations with Russia account for a rather modest share of the total number of publications in the Baltic and Indian regions — below 0.1 %. This places Russia outside the circle of these states' principal academic partners. Calculating a similar metric to reflect the contribution of countries from the two macro-regions to Russia's total publication output reveals two key points: first, the relatively high significance of these regions for Russia; second, the still dominant position of the Baltic (Western) track of publication collaboration over the Indian (Eastern) one. Since 2008, the share of the Baltic region in Russia's publications has gradually declined, while research cooperation along the Indian track intensified between 2021 and 2024. Accordingly, attributing the decline in Russia's Western collaborations solely to the post-2022 rise in geopolitical tensions would be inaccurate, as this process began much earlier. At the same time, Russia's growing interest in collaborations in the East has become more pronounced, reflected in the rising share of publications with these countries — from 1 % to 3 % in the case of the Indian region.

## Conclusions

Spatial scientometric analysis tools provide an effective means to identify and assess macrotrends in the transformation of the global research landscape, as they make it possible to handle large volumes of aggregated bibliometric data within territorially defined boundaries. This study examined changes in the contemporary geography of knowledge production using two macro-regions — the Baltic and Indian — as examples and assessed Russia's role in this process.

Analysis of data on research performance and output demonstrated that the selected macro-regions differ in the spatial distribution of research and their position on the global research map. The Baltic region, which has a well-established role in European and global knowledge production and includes innovation-oriented countries, shows a more balanced distribution of research activity than the Indian region. The study also showed a declining centrality of Germany as the leading research hub in favour of a more distributed structure comprising several centres, complete with a dynamically growing periphery represented by the Baltics.

The Indian region is less balanced, with pronounced disparities in the distribution of research activity. It is dominated by a single country — India — which functions as the sole research centre, surrounded by peripheral states. To a large extent, this paternalistic role of India stems from a shared historical background with its neighbours and reflects the foreign policy course pursued by the Indian state in the second half of the 20th century.

The difference between the macro-regions in the structure of publication activity distribution influences broader publication trends. The annually recorded decline in Germany's contribution to publication output makes the Baltic region's position on the research map of Europe and the world increasingly dependent on the pace of development in the research systems of several other countries. Excluding Russia, these are Poland and the Nordic states. By contrast, the Indian region's research visibility is shaped almost entirely by India's development trajectory.

In this context, the Baltic region's annual contribution to the quantitative growth of knowledge continues to rise, though at a slower pace than that of the Indian region. Most European countries within the macro-region demonstrate high levels of research output, enabling strong publication performance despite smaller population sizes. Each country's research output has an upper limit, beyond which further growth is constrained by the limitations of its research system. In the medium term, a deceleration in the overall growth of research activity is likely for the developed countries of the Baltic region, even as they maintain a high level of research output.

The Indian region follows a catching-up development model characterised by high annual publication growth rates. The findings indicate a shift in the spatial structure of global knowledge growth, with the Indian region significantly improving its position over the past three decades. This study confirms the increasing contribution of the East to knowledge growth, accompanied by greater involvement of eastern countries previously rarely considered attractive international research collaborators.

Russia has historically developed research collaborations with both the Baltic and Indian regions. While the Baltic collaboration path has stagnated, especially over the past decade, reflected in a steadily declining share of joint publications with Russia, the Indian track has yet to reach its full potential despite the declared strategic partnership between Russia and India. This may result from difficulties in establishing academic ties between researchers in both countries, caused by significant cultural and linguistic differences, divergent national research agendas and inconsistent institutional support for cooperation. The recent revival of joint publication activity between Russia and countries of the Indian macro-region appears driven more by geopolitical shifts than by natural processes of evolving academic connections. At the same time, the empirically observed rise of Eastern influence in global research underscores the importance for Russia to continue strengthening academic links with Asian countries. However, predicting the long-term durability of this trend remains challenging. A complete replacement of Russia's network of Western academic partners by Eastern ones

seems unlikely. A more pragmatic approach involves seeking points of convergence along both paths to maintain international research contacts as an element of soft power.

A promising research avenue is the study of a broader range of macro-regions to assess global and regional trends in the redistribution of world centres of knowledge growth and interconnections between these centres. Attention should be given to qualitative characteristics of international research cooperation, including citation metrics, the prestige of academic journals, and the representation of regions and institutions. Relying solely on quantitative methods limits the interpretation of results regarding the specific features of Russia's research collaboration with other countries, including sectoral, regional, and historical aspects. Evaluations of international academic interactions should be expanded by incorporating additional parameters such as patent statistics, academic mobility, intellectual resource migration, and institutional support. A valuable avenue for future research is the qualitative assessment of changes in the geography of knowledge production depending on the research field.

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# TRANSFORMATION OF THE CONFESSIONAL STRUCTURE OF THE POPULATION OF NORTHWEST RUSSIA AND THE BALTICS (LATE 19th CENTURY — FIRST QUARTER OF THE 21st CENTURIES)



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*The secularization processes that have unfolded since the early 20th century have profoundly transformed the traditional religious structure of populations in many countries and regions. This study aims to trace the shifts in the confessional composition of the population in Northwest Russia, Estonia, Latvia, and Lithuania from the late 19th century to the present. The analysis is based on data from the 1897 and 2021 population censuses, as well as sociological surveys that included questions on religious affiliation. Drawing on the dynamics of confessional change, the study identifies 24 historical-confessional districts across Northwest Russia and the Baltics States. A typology of these districts is developed according to two principal criteria: the degree of complexity in the confessional structure and the changing proportions of the region's four major religious groups — Protestants, Catholics, Eastern Christians, and Jews. The first type of district is characterized by a homogenization of the religious population in favour of Orthodox and Catholic groups, accompanied by a general heterogenization of the broader confessional structure, including the non-religious population. This type encompasses all districts of Northwest Russia, Ida-Virumaa County in Estonia, Latgale in Latvia, and parts of Lithuania. The second type, most extensively represented in Estonia and Latvia, exhibits heterogenization in both the overall confessional structure and its religious component. The third type is marked by the homogenization of the general confessional structure, with a predominance of Catholics in Lithuania, and of Protestants and the non-religious population in southwestern Estonia.*

**Keywords:**
confessional structure, Christian confessions, Judaism, secularization, historical-confessional regions

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## Introduction

The study of the dynamics of the confessional structure of the population has gained particular relevance in the context of significant transformations in the religious sphere across many countries. These changes are largely driven by secularisation processes that began in the 20th century and intensified in the 21st century. As Gorokhov [1] notes, all countries located east of the Baltic Sea experienced a wave of political secularisation during the Soviet period. Toward the end of the 20th century, this was followed by a brief phase of desecularisation — most notably in Russia and Lithuania, and to a lesser extent in Latvia and Estonia. However, in the early 21st century, the Baltic States (the Baltics) underwent a renewed acceleration of social secularisation, consistent with broader pan-European trends. This development has been particularly evident in Protestant-majority countries, with Estonia now ranking among the least religious countries in the world [2—4].

To a lesser extent, pan-European secularisation affected Lithuania, whose confessional structure of the population is homogeneous and consists predominantly of Latin Catholics. To a greater extent, this phenomenon is noticeable in the Lutheran countries of Estonia and Latvia, which have large Orthodox communities. In the latter of these countries, there are also large communities of representatives of the Roman Catholic Church [5].

In the past, several regions of Northwest Russia exhibited a rather complex confessional structure, with a notable presence of Protestants in the northern areas and Jews in the southern areas [6]. Today, however, the confessional landscape in this part of the country can be regarded as predominantly homogeneous due to the dominance of the potentially Orthodox population. Compared to the confessional geography reflected in the First General Population Census of 1897, significant changes in the religious structure of the population have occurred not only in Northwest Russia [7], but also across the territory of the Baltic States [8].

Thus, the transformation of the confessional structure of the population in the countries situated east of the Baltic Sea reveals significant differences linked to their traditional religious affiliations. The present study aims to identify and analyse shifts in the confessional composition of the population in Northwest Russia, Estonia, Latvia, and Lithuania — examined at the level of the historical-confessional regions delineated in the course of the research — over the period from 1897 to the present.

## Current research landscape and literature review

Research has predominantly focused on the confessional geography of Northwest Russia and the Baltic region in the late 19th century, owing to the availability of comprehensive data from the 1897 census—the sole census to document religious affiliation across these areas. Territorial differences in the confessional structure of the population, based on the results of this census, are examined in the work of Safronov [9] and several of our studies [6; 8; 10; 11]. Also worthy of

attention is the work of Kabuzan [12], who analyses confessional statistics at the level of the provinces of the Russian Empire based on the results of population revisions throughout the 18th—19th centuries.

The examination of subsequent changes in the confessional structure of the population of the region analysed was based on works devoted to the religious policy of the Russian Empire in the Baltic provinces [13], the history of the Estonian Evangelical Lutheran Church [14] and the Orthodox Church in the Baltics in the 19th and early 20th centuries [15—17], changes in the confessional structure of the population of the Belarusian-Baltic region at the beginning of the 20th century [18], and the modern confessional structure of the population of the Baltic countries [3; 5; 19, etc.].

Previously, we sought to assess the current religious structure of the population in Northwest Russia by employing both the method of calculating the potential religious composition [9] and the findings of the 2012 regional population survey conducted across various Russian regions [20; 21]. Comparable methodological challenges arise in studying the religious structure of the population at the regional level in Latvia, as contemporary national censuses in the country do not include questions regarding religious affiliation.

The study of the transformation of the confessional structure in the region under consideration — from the late 19th century to the present — encounters the challenge of discrepancies between the administrative-territorial divisions of the Russian Empire and those of the contemporary period. This issue is addressed in the present study through the historical and confessional zoning of Northwest Russia and the Baltic States, which takes into account the specific features of the confessional composition of the population in both the late 19th century and the present day.

## Materials and methods

The empirical basis of the study consists of population census data and sociological surveys. Specifically, it includes the First General Population Census of the Russian Empire (1897), as well as the national censuses conducted in 2021 in Russia, Estonia, Latvia, and Lithuania. The results of these censuses are available on the website Population Statistics of Eastern Europe & Former USSR.[1] Along with the national composition of the population in Estonia and Lithuania, their religious affiliation was also recorded during these censuses.

In addition, the study draws on the results of sociological surveys conducted in Russia and Latvia that included questions on religious affiliation. In Russia, such a survey, which allowed a fairly objective assessment of the confessional composition of the population of almost all regions of the country, was carried out by the non-profit research service “Sreda” within the framework of the “Are-

[1] *Population statistics of Eastern Europe & former USSR*, URL: http://pop-stat.mashke.org/ (accessed 12.06.2024).

na" project in 2012.[1] Taking into account the studies we conducted earlier, where the results of this survey were analyzed [20; 21], respondents who gave the answers "I profess Orthodoxy…" and "I profess Christianity…" were classified as the Eastern Christian population (Orthodox and Old Believers), and respondents who answered "I do not believe in God" and "I believe in God, but I do not profess a specific religion" were classified as the non-religious population.

In Latvia, the results of a sociological survey of the country' s population conducted by the Latvian agency SKDS in 2018 were taken as a basis (the survey was conducted among residents of Latvia aged 18 to 74, a total of about 1000 respondents; the question was asked: "What faith do you belong to?").[2]

Due to the lack of modern confessional statistics at the level of lower administrative-territorial units of Russia and Latvia, the study provides an assessment of the confessional structure based on the ethnic composition of the population. More precisely, the potential confessional structure of the population was calculated based on the traditional religious affiliation of the ethnic groups living in these administrative-territorial units. This approach was used, for example, in the works of Safronov [9], Manakov and Dementyev [8], Terenina and Krotok [21].

Due to the current existence of a fairly large category of non-religious population, a preliminary assessment of the religiosity of different ethnic groups is required [22]. Thus, in Russia, the results of a population survey conducted by the non-profit research service "Sreda" within the framework of the "Arena" project actually allow us to determine the religiosity of the potentially Orthodox population in the regions of the North-West due to their mono-ethnicity. An assessment of the size of other religious groups in the event that the survey yielded results that fall within the margin of error of the sample is given on the basis of the ethnic structure of the population.

The assessment of the current confessional structure of the population of the regions of Latvia is more complex. It is based, firstly, on the potential confessional structure of the population of the country' s regions based on their ethnic composition in 2021, secondly, on the results of a sociological survey in the country, which made it possible to assess the degree of religiosity of each potential confessional group, and thirdly, on the results of previous population censuses in Latvia (from 1920 to 1935, when the religious affiliation of the population was recorded). The latter made it possible to adjust the confessional structure of the population of the regions, taking into account the difference between the potential and actual confessional structure, or more precisely, to determine the share of Catholic Latvians and Orthodox Latvians, which was characterized by fairly high stability regardless of the year of the census.

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[1] Arena (Atlas of Religions and Nationalities of Russia), *Non-profit Research Service "Sreda"*, URL: http://sreda.org/arena (accessed 14.06.2024).

[2] Kaktiņš, A. 2018, Lūk, kā izskatās Latvijas iedzīvotāju reliģiskās un konfesionālās piederības pēdējās 3 aptaujās, kur tas ir ticis prasīts, URL: https://twitter.com/arniskaktins/status/1044214761557282816?lang=he (accessed 14.06.2024).

## Research results and discussion

The main indicator used in the study to assess the degree of homogeneity/heterogeneity of the confessional structure of the population is the confessional mosaic index (CMI). This indicator is calculated using the formula $CMI = \Sigma \pi i(1 - \pi i)$, where $\pi i$ is the proportion of representatives of the i-th confessional group in the country or region. CMI is an analogue of the ethnic mosaic index (EMI) [23], which is widely used in Russian ethnic geography and ethno-demography. In foreign science, this indicator is called the ethnic fractionalization index [24] or, as in the original version, the ethnolinguistic fractionalization index [25]. Most often in foreign science, the index is used to identify the relationship between the ethnic heterogeneity of the population of countries and regions and their economic development [26—28]. The name of the indicator was borrowed from foreign colleagues by Russian economists engaged in similar research topics [29—31].

The value of the CMI varies from zero (if the entire population of a country or region professes one religion) to 1—1/n (which indicates the maximum heterogeneity of the confessional structure of the population of a certain territory), that is, there is an implicit dependence of the value of the index on the number of confessional groups in the country or region used for its calculation. To neutralise the influence of this factor, Gorokhov [1, p. 102] proposed a modified version of the index, the values of which fall within the range from zero to one. If the value of the CMI is known, the modified version of the mosaic index (CMIm) can be calculated as follows: $CMIm = CMI/(1 — 1/n)$.

CMIm allows for the assessment of the degree of homogeneity / heterogeneity of the confessional structure of the population of territories. Thus, Gorokhov [1, p. 106] proposed the following scale of CMIm values, which makes it possible to identify territories with different degrees of confessional homogeneity / heterogeneity: 1) extremely homogeneous (CMIm from 0.000 to 0.280); 2) relatively homogeneous (CMIm from 0.281 to 0.556); 3) relatively heterogeneous (CMIm from 0.557 to 0.820); 4) extremely heterogeneous (CMIm from 0.821 to 1.000).

The CMIm can also be used to assess shifts in the confessional structure of the population of territories over a certain time interval. A decrease in the CMIm value over the period under study indicates homogenization of the confessional structure of the population of administrative-territorial units, while an increase in the CMIm indicates its heterogenization. Thus, a study was conducted in Latvia using a similar methodology [32], where, based on the calculation of the dynamics of the ethnic fractionalization index between 1925 and 1935, as well as between 1989 and 2009—2011, taking into account the change in the share of the Latvian population, an assessment was made of the degree of ethnic homogenization or heterogenization of the lower administrative-territorial units of the country during these periods.

Given the significant proportion of atheists and individuals who either do not identify with any religion or choose not to disclose their religious affiliation — collectively referred to as the non-religious population — a question arises as to whether this demographic should be included in the calculation of the confession-

al mosaic index. It is more correct to calculate the CMIm only for the religious part of the population, taking the proportion of people who indicated their religious affiliation as 100 %. For example, Gorokhov [1] suggests calculating the indices of general and religious mosaic separately. We propose to designate the mosaic index for the entire population, including its non-religious part, in order not to confuse it with the CMIm, as a modified general index of confessional mosaic (CMImg).

The study area covers the historical part of Northwest of Russia and the Baltics. However, the Kaliningrad region and the northern part of the Karelian Isthmus (in 1897 part of the Vyborg Governorate, and now part of the Leningrad region) were excluded from the study due to the complete replacement of the population in their territory during the period analysed. In this territory, 20 historical-confessional regions and 4 cities (Saint Petersburg, Tallinn, Riga and Vilnius) were identified, characterised by a specific confessional structure of the population at the turn of the 19th and 20th centuries or at present.

Based on the results of the 1897 and 2021 censuses, the CMIm was calculated for all historical and religious districts of the region under study. For 2021, the CMImg — an adjusted version of the index that includes the non-religious population — was also calculated. The results are presented in the table below.

**The value of the confessional mosaic indices for historical and confessional regions of Northwest Russia and the Baltics, calculated for 1897 and 2021**

| Region | CMIm 1897 | CMIm 2021 | CMImg 2021 |
|---|---|---|---|
| *Total* | *0.896* | *0.772* | *0.875* |
| *Northwest Russia* | *0.245* | *0.037* | *0.696* |
| St. Petersburg | 0.336 | 0.031 | 0.701 |
| Ingria | 0.618 | | |
| Priluzhie | 0.347 | | |
| Ladoga-Onega | 0.018 | 0.044 | 0.687 |
| Novgorod | 0.076 | 0.027 | 0.683 |
| Eastern Prichudye | 0.216 | | |
| Pskov | 0.082 | | |
| Belarusian | 0.199 | 0.066 | 0.658 |
| *Estonia* | *0.369* | *0.676* | *0.567* |
| Tallinn | 0.490 | 0.592 | 0.647 |
| Northern Estonia | 0.188 | 0.682 | 0.438 |
| Ida-Virumaa | 0.400 | 0.245 | 0.692 |
| South-East Estonia | 0.330 | 0.641 | 0.440 |
| South-West Estonia | 0.606 | 0.594 | 0.428 |
| *Latvia* | *0.777* | *0.879* | *0.926* |
| Riga | 0.710 | 0.747 | 0.860 |
| Vidzeme | 0.287 | 0.728 | 0.846 |
| Latgale | 0.808 | 0.723 | 0.837 |
| Zemgale | 0.377 | 0.851 | 0.900 |
| Kurzeme | 0.432 | 0.735 | 0.846 |
| *Lithuania* | *0.530* | *0.170* | *0.510* |
| Vilnius | 0.874 | 0.314 | 0.659 |
| Dzukija | 0.394 | 0.140 | 0.412 |

*The end of Table*

| Region | CMIm 1897 | CMIm 2021 | CMImg 2021 |
|---|---|---|---|
| Eastern Aukstaitija | 0.583 | 0.497 | 0.701 |
| Aukstaitija | 0.540 | 0.080 | 0.452 |
| Samogitia | 0.449 | 0.213 | 0.540 |
| Suvalkija | 0.470 | 0.027 | 0.300 |

In 1897, based on the values of the Confessional Mosaic Index (CMI), the historical-confessional regions were classified according to the degree of homogeneity or heterogeneity of their confessional structure as follows: extremely homogeneous regions — most of Northwest Russia and northern Estonia; relatively homogeneous regions — St. Petersburg, Priluzhie, and most territories of Estonia, Latvia, and Lithuania; relatively heterogeneous regions — Ingria, southwest Estonia, the city of Riga, Latgale, and Eastern Aukštaitija. The only region classified as extremely heterogeneous was the city of Vilnius.

Currently, nearly all historical-confessional regions exhibit a high degree of heterogeneity in the overall confessional structure of the population, primarily due to the substantial share of the non-religious population. At the same time, the degree of heterogeneity within the religious segment of the population has slightly decreased. The greatest increase in the homogeneity of this segment is observed in the regions of Northwest Russia and Lithuania. In contrast, the religious structure has become somewhat more heterogeneous in most historical-confessional regions of Estonia (with the exception of Ida-Virumaa County and South-West Estonia) and Latvia (except for Latgale). The observed dynamics of the Confessional Mosaic Index can be explained by examining the changing proportions of various confessional groups over the period in question.

The main confessional groups selected for analysis in the region under study are Protestants (comprising Lutherans alongside representatives of other Protestant denominations), Catholics, Eastern Christians (including both Orthodox believers and Old Believers), and Jews. Firstly, these groups correspond either to individual religions (Judaism) or to the three principal branches of Christianity. Secondly, these confessional groups represented the largest shares within the religious composition of the population in the study region at the end of the 19th century. Thirdly, they allow for quantitative comparison with the potential confessional structure derived from the traditional religious affiliations associated with the ethnic groups in the area.

According to the data utilized in this study, the share of the non-religious population — which includes atheists as well as individuals who did not specify their religious affiliation during censuses and population surveys — is currently 71 % in Estonia, 32 % in Latvia, 20 % in Lithuania, and 43 % in the regions of Northwest Russia. Within Northwest Russia, the proportions vary by area: over 48 % in the Novgorod region, 44 % in St. Petersburg, over 40 % in the Pskov region, and 39 % in the Leningrad region.

The decrease in the proportion of Protestants in the overall confessional structure of the population of the Baltic States is directly related to the processes of social secularisation that unfolded in the 20th and early 21st centuries, since secularisation primarily affected Protestant countries. In the period between the 1897 and 2021 censuses, the most significant reduction in the proportion of Protestants (over 70 %) occurred in Estonia (Fig. 1), which is currently one of the least religious countries in the world.

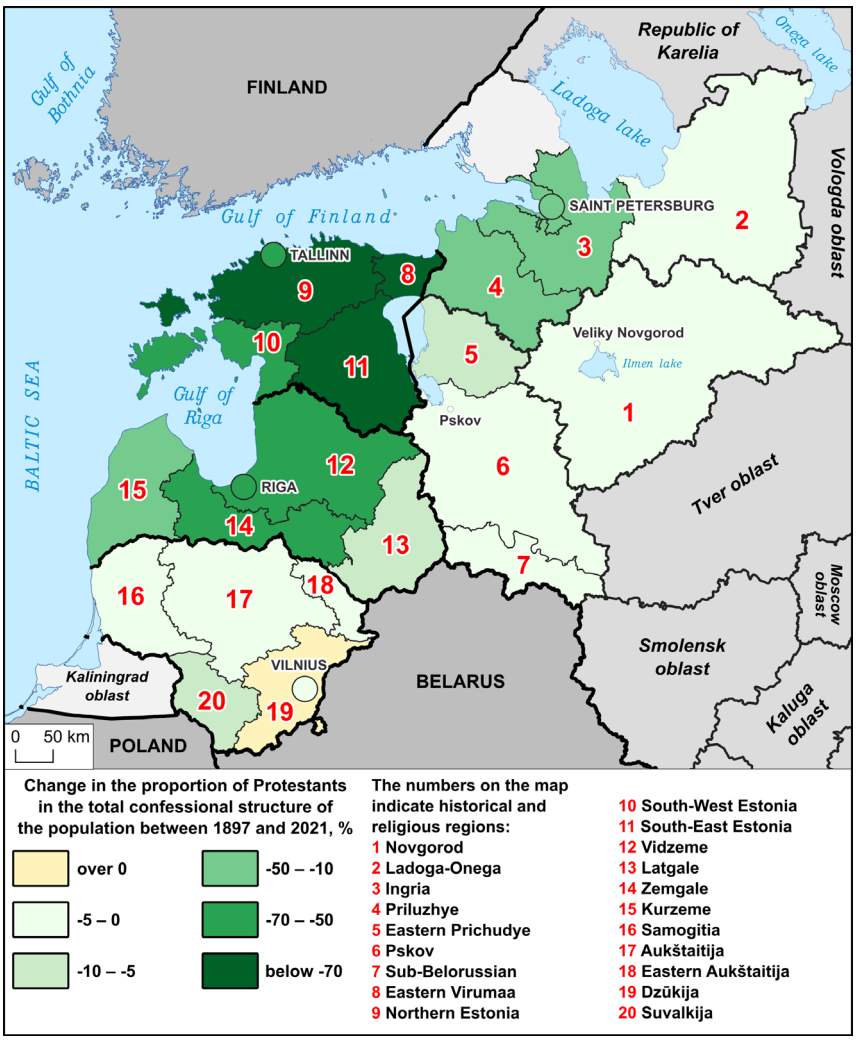


Fig. 1. Change in the share of Protestants in the total confessional structure of the population between 1897 and 2021

A 50—70 % decrease in the proportion of Protestants is characteristic of the historically Lutheran regions of Latvia (Vidzeme and Zemgale), the city of Riga, as well as southwestern Estonia and Tallinn. In Russia, the most significant decrease in the proportion of Protestants occurred in the territory of Ingria (due to

the deportation of Ingrian Finns in the 1930s—1940s), in Priluzhie and Eastern Prichudye (abandoned in 1943 by Estonians and Latvians who arrived in these territories in the second half of the 19th century) [6]. The minimal decrease in the proportion of Protestants characterises the territories of Russia and Lithuania, where the proportion of Lutherans was low to begin with. The only historical region where the proportion of Protestants increased during the study period was Dzūkija in Lithuania.

The share of Catholics in the overall confessional structure of the population grew mainly in the Baltic States and decreased in Northwest Russia (Fig. 2). The largest increase in the share of Catholics during the study period was observed in Vilnius and Riga, and less significant in most of Estonia, Latvia, and Lithuania. The exception was several regions where the share of Catholics decreased due to the growth of the share of Orthodox (in Latgale, Eastern Aukštaitija, and Samogitia) or the non-religious population.

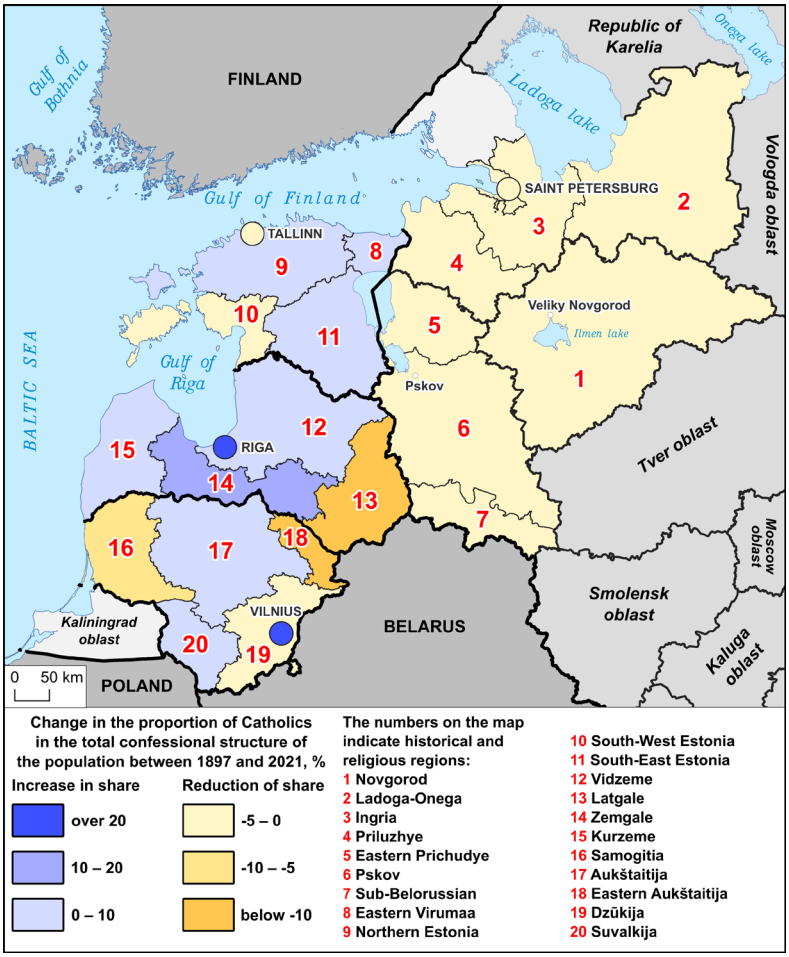


Fig. 2. Change in the share of Catholics in the total confessional structure of the population between 1897 and 2021

The most significant increase in the proportion of Orthodox and Old Believers (in total) in the overall confessional structure of the population was observed in Eastern Virumaa (Estonia) and the city of Riga (over 20 %), as well as in all regions of Latvia (from 10 to 20 %), a small increase — in Northern Estonia and the city of Tallinn, in Eastern Aukštaitija and Samogitia. A decrease in the proportion of Eastern Christians occurred in all regions of North-West Russia (due to an increase in the proportion of the non-religious population), in the southern part of Estonia and in most regions of Lithuania (Fig. 3).

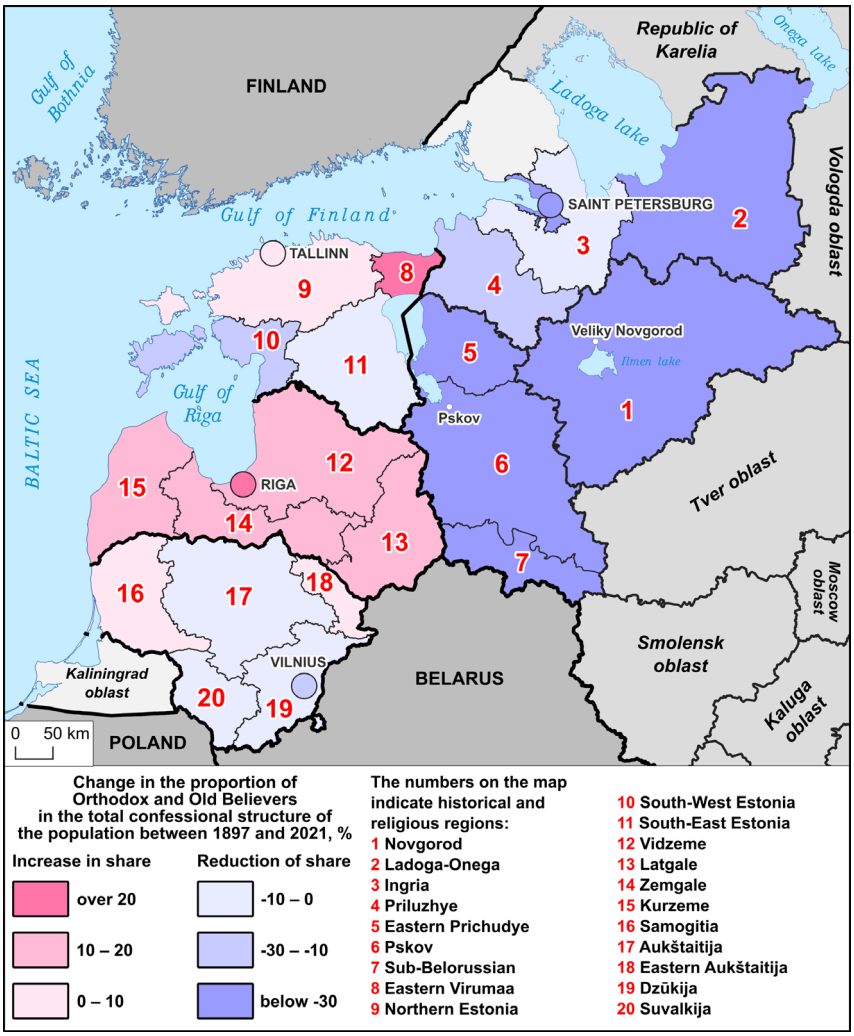


Fig. 3. Change in the share of Orthodox and Old Believers in the overall confessional structure of the population between 1897 and 2021

The decline in the proportion of Orthodox Christians and Old Believers in Lithuania is primarily attributable to the reduction of the potentially Orthodox population, largely resulting from partial migration outflows at the turn of the

twentieth and twenty-first centuries. In contrast, the decrease in the share of Eastern Christians in southern Estonia, particularly in its southwestern region, stems from a different cause. During the mid to late 19th century, Orthodoxy — often referred to as "the Tsar' s faith" — was actively adopted by the local Estonian population in the hope of acquiring land following the abolition of serfdom in the Baltic provinces [15—17]. The island of Saaremaa (then Oesel) was particularly notable in this regard, with the proportion of Orthodox Christians exceeding 38 % of the local population in 1897. Similar processes occurred in other counties of the Livonian province — now corresponding to southern Estonia and northern Latvia — although the adoption of Orthodoxy by Estonians and Latvians in these areas was less widespread.

The schematic map illustrating the reduction in the share of Jews within the overall confessional structure of the population (Fig. 4) largely reflects the historical geography of Jewish settlement at the end of the 19th century, specifically within the so-called Pale of Settlement. By the present day, the Jewish population in the study region has become exceedingly small. This decline is primarily attributable to two factors: first, the genocide of Jews in the occupied territories during the Second World War, and second, the post-war migration outflow of the already greatly diminished Jewish community. At the end of the 19th century, the Pale of Settlement encompassed the Vitebsk Governorate (including Latgale and the modern southern part of the Pskov Region), as well as the Kovno, Vilnius, and Suwalki Governorates — territories that later fully or partially became part of Lithuania. Additionally, special residence regulations for Jews were imposed in the Courland Governorate (corresponding to Kurzeme and Zemgale). Outside these areas, except for major cities such as St. Petersburg, Revel, and Riga, the Jewish population—and thus the presence of Judeans — was insignificant.

Based on the difference in the CMIm and CMImg values between 1897 and 2021, as well as on the changes in this period in the general confessional structure of the population of the proportion of Protestants, Catholics, Eastern Christians, Jews and non-religious population, a typology of historical and confessional regions of Northwest Russia and the Baltic States was developed based on confessional dynamics in this period (Fig. 5).

In total, three types and eight subtypes of historical-confessional districts were identified. First of all, the districts were divided into two main groups by the nature of the change in the general confessional structure of the population (including the non-religious population). Most often, an increase in the share of the non-religious population led to the heterogenization of the general confessional structure (increase in CMImg), but it was accompanied by either homogenization of the structure of the religious population (decrease in CMIm), or its heterogenization (growth of CMIm). These are the first two types of historical-confessional districts, each of which has three subtypes depending on the dynamics of the proportion of individual confessional groups.

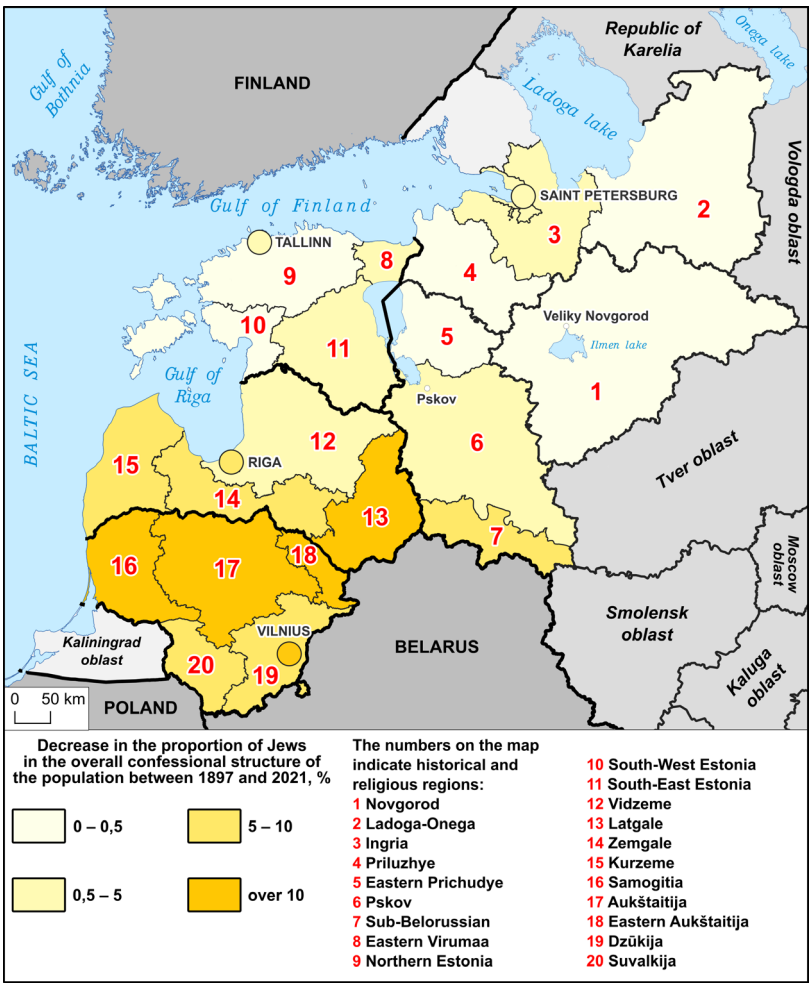


Fig. 4. Change in the share of Jewish population in the total confessional structure of the population between 1897 and 2021

The first subtype of the first type includes historical-confessional areas that experienced a homogenization of the religious population structure — despite a growing share of the non-religious population — due to a decline in the representation of other confessional groups. These areas encompass the entire territory of Northwest Russia, as well as Eastern Virumaa in Estonia and Latgale in Latvia. In these regions, Orthodoxy has retained or established dominance within the religious population over the study period. This outcome is attributable, in part, to the reduction in the proportion of Jews (notably in Latgale and the southern part of the present-day Pskov region, which historically belonged to the Vitebsk Governorate within the Pale of Settlement), as well as to the decline of Protestant communities. The latter trend is evident in Eastern Virumaa, Priluzhie, Eastern Prichudye, Ingria, and St. Petersburg — areas where Estonians and Finns previously formed a significant part of the population.

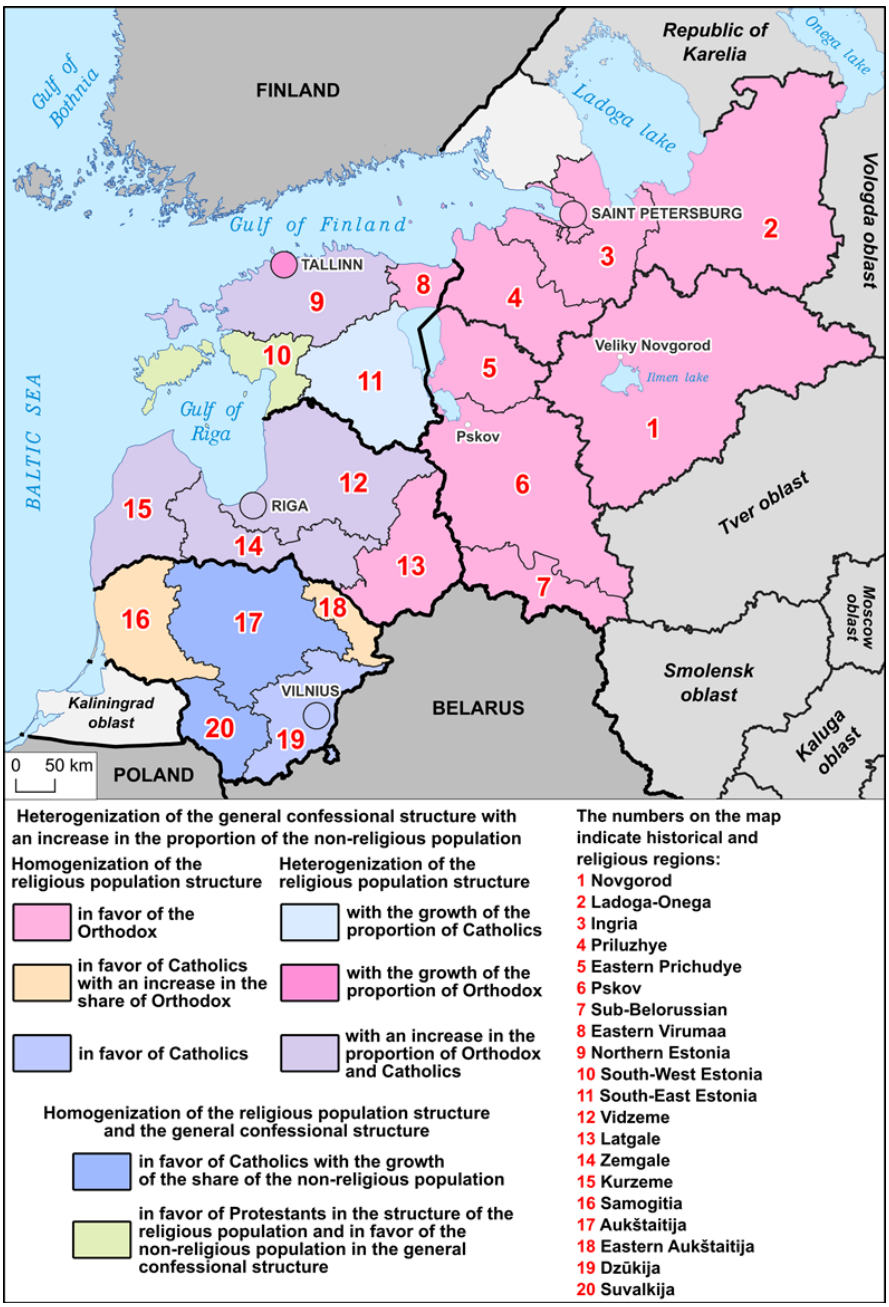


Fig. 5. Typology of historical and confessional regions of Northwest Russia and the Baltic States based on the dynamics of the confessional structure of the population between 1897 and 2021

The second subtype of the first type is characterised by an increase in the share of the Orthodox population; however, Orthodox believers did not come to dominate the religious landscape, as Catholicism retained its leading position. In these regions, the homogenization of the religious population structure was large-

ly driven by the decline of the once substantial Jewish population. This subtype is represented by two historical-confessional regions in Lithuania: Samogitia and Eastern Aukštaitija.

The third subtype of the first type is also characterised by the homogenization of the religious population structure in favour of Catholics, again due to a significant reduction in the share of Jews, but without an increase in the share of the Orthodox population. This subtype is represented in the eastern part of Lithuania (Vilnius and the surrounding region of Dzūkija).

The second type of historical-confessional districts is generally characterised by the heterogenization of both the general confessional structure of the population and its religious component. However, in this type of districts, there is a small increase in the share of two confessional groups — Catholics (the first subtype, represented in the south-east of Estonia), Orthodox (the second subtype, including the city of Tallinn) and both Catholics and Orthodox (the third subtype, covering Northern Estonia and all historical districts of Latvia, except Latgale).

The third type of historical-confessional regions is characterised by the simultaneous homogenization of the general confessional and religious structures of the population. The first subtype is represented by two historical regions of Lithuania (Aukštaitija and Suvalkija), where the structure of the religious population was homogenized in favour of Catholics, who strengthened their leadership not only in the religious structure of the population, but also in the general confessional structure (despite the growth of the share of the non-religious population) due to the loss of Jews from it.

The second subtype of the third type includes the southwestern part of Estonia. This is the only historical-confessional region where there was a simultaneous homogenization of the religious population structure in favour of Protestants (due to the decline in the share of Eastern Christians) and the general confessional structure in favour of the non-religious population.

## Conclusions

The methodology developed in this study—based on the analysis of changes in the proportions of major confessional groups and the calculation of the mosaic index across historically and confessionally defined regions — made it possible to identify territorial variations in the transformation of the confessional structure of the population in North-West Russia and the Baltic countries from the late 19th century to the present. In total, 24 regions were identified, each characterised by distinctive features of the confessional structure of the population either at the end of the 19th century or at the beginning of the 21st century.

A typology of historical and confessional districts was carried out based on the dynamics of the confessional structure of the population for the specified period. Three types and eight subtypes of districts were identified, taking into account the change in the complexity of the religious and general confessional (including per-

sons who did not indicate their religious affiliation) structure of the population, as well as the dynamics of the proportion of the four main confessional groups in the study region (Protestants, Catholics, Eastern Christians and Jews).

The first type is characterised by the homogenization of the religious structure (in favour of either Orthodoxy or Catholicism), occurring alongside the heterogenisation of the broader confessional landscape due to the increasing share of the non-religious population. This trend is observed across all historical-confessional regions of North-West Russia, Ida-Virumaa County in Estonia, the Latgale region in Latvia (where homogenization favoured Orthodoxy), and much of Lithuania (where Catholicism became predominant). The growing dominance of Orthodox and Catholic affiliations within the religious segment of the population can largely be attributed to the demographic decline of Protestant communities in the northern areas and the near disappearance of the Jewish population in the southern regions.

The second type is defined by a concurrent heterogenization of both the religious and overall confessional structure. This pattern is typical of most regions in Estonia and Latvia, where large-scale secularisation among Protestants was accompanied by modest increases in the shares of Orthodox and Catholic adherents.

The third type is distinguished by the simultaneous homogenization of both religious and overall confessional structures. In Lithuania, this trend is particularly evident in regions such as Aukštaitija and Suvalkija, where the dominance of Catholicism has intensified. The most illustrative case of this type is southwestern Estonia, where a substantial rise in the non-religious population coincided with a marked decrease in the proportion of Orthodox Christians (primarily descendants of 19th-century Estonian converts), leading to a consolidation of Lutheranism as the prevailing religious affiliation.

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— key results and conclusions;

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The summary should not reproduce the text of the article (i. e. copy sentences from the article verbatim) or its title. The summary should not contain digits, tables, footnote markers, etc.;

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