# DEMOGRAPHIC SITUATION AND DEMOGRAPHIC SECURITY IN THE REGIONS OF RUSSIA'S WESTERN BORDERLANDS

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In this study, I address the vast and complicated problem of population replacement in Russia's border regions. Although both national and regional dedemographic indicators have improved in Russia in recent years, many issues relating to sub-replacement fertility, irrational migration, etc. remain unresolved. This lends an urgency to studying regional demographic security, namely, the problems of ensuring replacement regulating migrations. overcoming a skewed age and sex structure. I provide a detailed definition of the notion of demographic security and a list of indicators for evaluating it. I stress typological differences in the demographic situation across Russia's western borderlands to ensure a differentiated approach to providing regional demographic security. In this study, I use economic-statistical methods, a comparative analysis, and an empirical typology of regions based on the above indicators. In terms of theory, the findings obtained can contribute to a more detailed definition of demographic security and a better methodology of regional population studies. In practical terms, the study has relevance to the development of proposals for improving national and regional demographic policy and regional strategic planning given the identified typological differences.

*Keywords*: demographic situation, demographic situation, demographic security, Russia, Western borderlands

### Introduction

Studies of the effect of a border position on the development of Russian regions stretching along Russia's western border gained momentum in the 2010s [1—4]. However, comparative analysis and classification of the totality of border regions lying in the West of the country remain a relatively new line of research [5—7].

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The key to comparative analysis of regional situations is the juxtaposition of regional demographic processes. Although the interest in demographic problems dropped in the 1990s, recently they were once again brought to the fore of social studies in Russia. This may be explained by depopulation and ageing, processes observed in both Russia and the overwhelming majority of economically developed countries. Another factor is uncontrolled migration, which may be viewed as irrational from the perspective of not only economics but also politics and social matters. Overall, significant differences in the demographic performance of Russian regions lend an urgency to research in the field.

Not only the socioeconomic but also the political significance of studies into national and regional demographic processes is associated with the emerging concept of 'demographic security'. It is often considered as falling within the broader category of 'integrated regional security' or 'economic security'. However, it can take on an independent meaning, since it is ultimately connected to the very existence of the nation.

In this article, I will attempt to define the scope of the concept of 'demographic security', clarify its use at a regional level, identify the indicators of demographic security, and estimate values of such indicators for the regions located in Russia's western borderlands — an area of exceptional geopolitical significance.

# The concept of Russia's borderlands

Russia's borderlands — if both the land and maritime borders are taken into account — include 17 Russian regions from the Nenets autonomous region in the north to the Krasnodar region in the south [6]. Ten of them were border territories in the Soviet period (the old western borderlands) and seven became such after the disintegration of the USSR (fig. 1).

As to the old western borderlands, the Nenets autonomous region, the Arkhangelsk region, and the city of Sevastopol have only a maritime border. The Republic of Karelia, the Leningrad, Kaliningrad, and Krasnodar regions, and the Republic of Crimea have both maritime and land borders. Technically, Saint Petersburg does not have either a land or a maritime border. However, we class the city as a border region, since it comprises an integrated socioeconomic system with the Leningrad region, which is a borderland. Moreover, playing a crucial role in the defence of the national border, the city's port of Kronstadt is one of the two major bases of Russia's navy in the Baltic.

Russia's new western borderlands with land boundaries include the Pskov, Smolensk, Bryansk, Kursk, Belgorod, and Voronezh regions. The Rostov region has both a land and a maritime border.

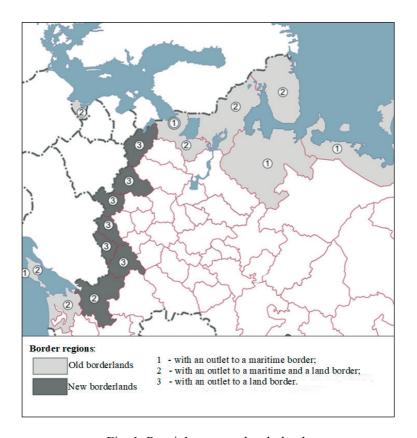


Fig. 1. Russia's western borderlands

A — old borderlands; B — new borderlands; 1 — Russian regions with an outlet to a maritime national border (including Saint Petersburg); 2 — Russian regions with an outlet to a maritime and a land border (in the USSR, the Republic of Crimea and the Krasnodar region had only a maritime outlet); 3 — Russian regions with an outlet to a land border

Prepared by the author.

# Demography of the western borderlands

Although the demographic situation in Russia's western borderlands has many common features with the national performance, it also has a number of distinctive characteristics. Moreover, there are significant disparities between the old and the new western borderlands.

Figure 2 shows changes in the population change rate in 1959—1989 and 1989—2018. Noticeably, in both periods, the old western borderlands performed above the national average. In both periods, their population was growing, although in 1989—2018 at a lower rate than in 1959—1989. The new western borderlands performed below the national average, and thus below the old western borderlands' rates. In 1959—1989, a slight growth was observed and 1989—2018 witnessed a slight population decline.

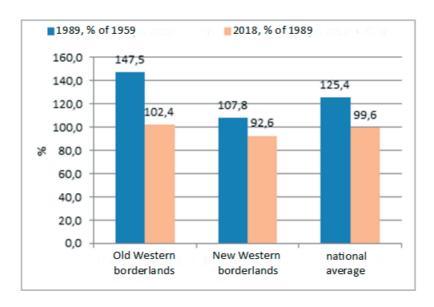


Fig. 2. Population change dynamics in Russia's old and new borderlands, shown against the national average

Prepared by the author based on [8].

Cross-regional differences in population change rates are even more striking (fig. 3). As early as the Soviet period, some regions of the western borderlands saw a population decline. These were the new western borderland regions of Pskov, Bryansk, and Kursk. However, in 1959— 1989, the population increased 2.6-fold in Sevastopol and twofold in the Murmansk region and the Republic of Crimea. The situation changed dramatically in the post-Soviet period. Only in six out of seventeen regions, the population size in 2018 was above the 1989 level. These areas include Saint Petersburg and the Leningrad region, the Kaliningrad region, the Krasnodar region, the city of Sevastopol, and the Belgorod region. Note that Saint Petersburg and the Leningrad, Kaliningrad, and Krasnodar regions are economically developed vibrant coastal regions, often classified as development corridors. The Krasnodar region boasts a mild climate that not only makes the territory an attractive area to live in but also contributes to the development of agriculture, tourism, and recreation. The Kaliningrad region and Saint Petersburg are home to two Baltic fleet bases — Baltiysk and Kronstadt — that testify to the geopolitical significance of the regions. The population of the Belgorod region is growing thanks to a dynamic metallurgical industry and burgeoning agriculture. The population is growing in the geopolitically crucial city of Sevastopol, home to the principal base of Russia's Black Sea Fleet.

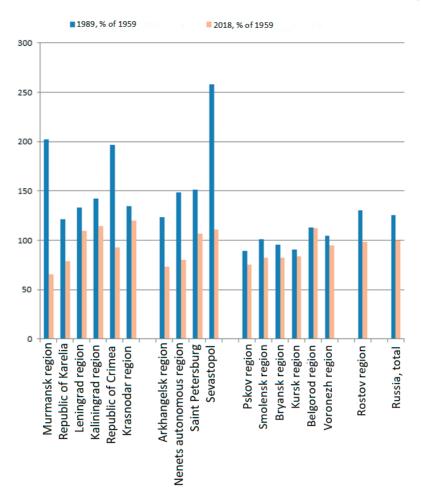


Fig. 3. Population change in the regions of Russia's western borderlands

Prepared by the author based on [8].

Whereas the old borderlands have an equal number of regions with growing and with declining population, only one region of the new borderlands reports population growth, while significant decline is observed in some regions of the old borderlands. These are the northern territories with harsh climate: the Republic of Karelia, the Murmansk and Arkhangelsk regions, and the Nenets autonomous region, whose natives are moving further south.

At the level of individual regions, the contribution of natural change and migration to the population dynamics differs dramatically. All the regions with growing population (with the exception of the Nenets autonomous region) have a high net migration rate. In the Nenets region, migration is negative and the population growth is accounted for by a high birth rate.

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Figure 4 shows the 2017 distribution of the western borderlands regions by natural change and migration rate. As compared to the entire 1989—2018 period, the Republic of Crimea joined the regions with a population growth, whereas a natural increase was observed not only in the Nenets autonomous region but also in Saint Petersburg. In both cases, high birth rate was the factor behind the growth, accounted for by an above average proportion of people of young age (including women of fertile age), which in itself is a result of migration from other Russian regions and neighbouring countries. In all the regions of new borderlands, the Republic of Karelia, and the Murmansk and Arkhangelsk regions the population was declining. In the three latter regions, as well as in the Pskov, Bryansk, and Kursk regions of the new borderlands, both rates were negative.

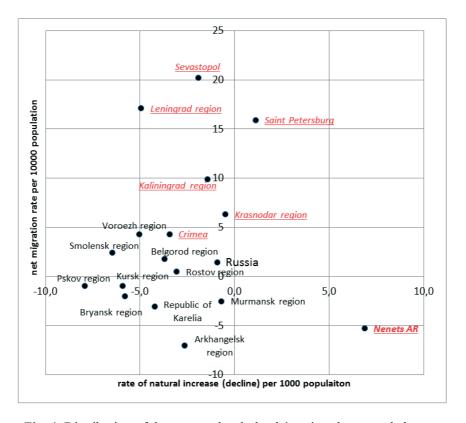


Fig. 4. Distribution of the western borderlands' regions by natural change and net migration rate per 1000 population, 2017

Legend: <u>Nenets AR</u> — population growth; Smolensk region — population decline.

Prepared by the author based on [8].

However, across all the regions of both old and new western borderlands, the rate of natural increase was below the national average. In

2016, the total fertility rate was 1.7 in the old western borderlands and 1.58 in the new western borderlands, both below the national average of 1.76. Still, it is a significant increase to the 2000 levels, when, following the crisis of the 1990s, the national average did not exceed 1.20 (the lowest rate of 1.16 was observed in 1999). The trend towards higher birth rates was characteristic of all the western borderland regions (fig. 5). Only in the Nenets autonomous region it translated in above-replacement fertility. A total fertility rate of slightly above 1.8 (1.82, which corresponds to a net reproduction rate of 0.9) was reached in 2016 only in the Krasnodar region. According to the official data, the lowest TFR was observed in the Leningrad region (1.32) [8].

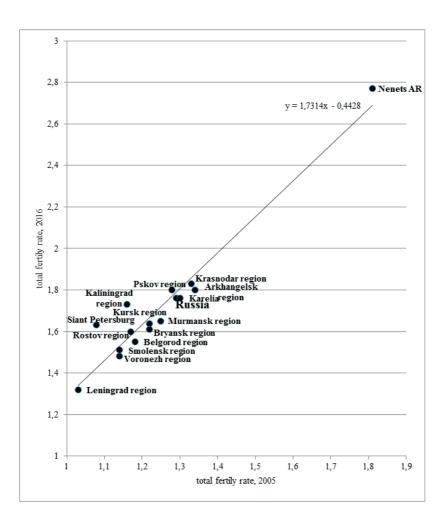


Fig. 5. Changes in the total fertility rates in the regions of Russia's western borderlands, 2005—2016

Prepared by the author based on [8].

Life expectancy at birth is an important measure of population change. In 2017, it reached 72.7 years in Russia (67.5 for men and 77.6 — for women). To compare, it was 80.8 years in Germany in 2014 (78.6 and 83.3 years respectively) [8]. These figures are used as 2030 targets in the Presidential decree of May 7, 2018 [9].

Although life expectancy in the western borderlands is close to the national average, there are significant cross-regional differences (from 68.5 years in the Pskov region to 74.4 years in Saint Petersburg), with values of the indicator increasing in 2000—2015 by 5—10 years, depending on the region. And while the difference between the life expectancy for males and females reduced from 13.2 to 10.8 years, it is still rather dramatic, being 4—5 years greater than in most economically developed countries. Being roughly the same as in Belarus and the Baltics (9—11 years), it falls behind the former socialist countries of East Europe, with 6 to 8 years difference between male and female life expectancy.

Table 1 shows changes in life expectancy at birth in 2000—2015.

 $\label{eq:Table 1} \emph{Table 1}$  Life expectancy at birth in the Russian western borderlands

Life expectancy,	Life expectancy, years, 2015			
years, 2000	68.0—69.9	70.0—71.9	72.0—74.9	
68.1	_	_	Belgorod region, Saint Petersburg	
66.0—67.9		Voronezh region,	Krasnodar region	
		Rostov region		
64.0—65.9	_	Russia	_	
		Murmansk, Bryansk,		
		Kursk regions		
62.0—63.9	Republic of Karelia,	Arkhangelsk,		
	Smolensk region	Leningrad,		
		Kaliningrad regions		
60.0—61.9	Pskov region	Nenets autonomous	_	
		region		
No data	_	Republic of Crimea,	_	
		Sevastopol		

Prepared by the author based on [8].

Differences in life expectancy, on the one hand, and disproportions between the so-called male and female jobs, on the other, lead to a skewed sex ratio in many Russian regions. In 2015, the national ratio was

1158 females per 1000 males. In most economically developed countries, the ratio is 1040 per 1000, respectively. Across Russia's western borderlands, the closest ratio is observed in the Nenets and Murmansk regions (1152 to 1088). Saint Petersburg — a popular destination for young women from the villages and towns of the Leningrad and neighbouring regions — has 1213 females per 1000 males.

In 1990—2015, the female excess increased by 23 points, from 1135 to 1158 females per 1000 males, due to the high male mortality observed in the 1990s. As to the Western borderlands, the most significant increase — by 100 points — occurred in the Murmansk region, whereas, in some other regions (the Leningrad, Pskov, Smolensk, Belgorod, and Voronezh regions and Saint Petersburg), the difference between the number of females and males narrowed. Improved life expectancy, increasing at a higher rate in men than in women, will contribute to fewer disproportions in the sex structure of the population. In 2015, as compared to 1990, only six out of seventeen Western borderland regions witnessed a decrease in the number of females per 1000 males (table 2), i. e. the sex disproportion was growing.

 $Table\ 2$  Female to male ratio in the western borderland regions in 1990—2015

Females	Changes in the number of females per 1000 males, 1990—2015				
per 1000 males, 2015	from $-25$ to $-1$	from 0 to 24	from 50 to 109		
1200—1249	Saint Petersburg	Kursk region	_		
1150—1199	Belgorod,	Bryansk, Rostov,	Republic of Karelia		
	Voronezh,	Krasnodar regions			
	Smolensk,				
	Pskov regions				
1100—1149	Leningrad region	_	Arkhangelsk region,		
			Kaliningrad region		
1050—1099	_	Nenets autonomous	Murmansk region		
		region			

Comment: the 1990 data for the Republic of Crimea and Sevastopol were not available; in 2015, the female to male ratio was 1175 and 1143 per 1000 respectively.

Prepared by the author based on [8].

# Regional demographic security

The concept of regional demographic security has been increasingly used in demographic, economic, and other social studies. A theoretical and methodological framework for relevant research is rapidly develop-

ing. Regional demographic security is viewed as a factor of economic [10] and geopolitical [11] security and often associated with major national interests [12, 13]. In other cases, it is interpreted as an independent component of national security, alongside its economic, environmental, and other aspects [14—18]. Sometimes, the scope of the concept is expanded to socio-demographic security in general [19].

The literature justifies the use of indicators that provide a qualitative and quantitative description of demographic processes and structures [14; 16; 20]. There have been attempts at developing an integrated demographic security index comprising a number of demographic indicators [17; 21].

In my opinion, demographic security should be defined as a state of demographic processes and structures that prevents depopulation, meets the needs of regional socioeconomic development, and contributes to the preservation and promotion of Russian culture. This means attaining the replacement — or above-replacement — fertility against the background of high life expectancy and a migration that is sufficient for economic development. These demographic parameters, which, to a degree, can be altered by direct national policy measures, require an accurate estimation. An additional requirement is the absence of significant sex and age disproportions. Of course, being a result of long-term natural population change and migration processes, such disproportions largely escape direct regulation. However, they can serve as a measure of the current level of demographic security. The other demographic, socio- and economicodemographic, and other indicators (marriage rate, divorce rate, disease incidence, urbanisation rate, population density, etc.) that cast light on specific aspects of demographic processes and ratios, as well as their connection to other regional characteristics, seem to be of secondary importance. They either provide more detail on the nature of demographic characteristics or describe the conditions for and factors behind demographic security.

# Classification of the regions of the Western borderlands by the level of demographic security

The demographic processes observed in Russia's western borderlands since the early 2000s have been showing an improvement of regional demographic situations. Although there may be significant cross-regional differences, none of the regions can be considered demographically secure. The regions also differ in the state of population and the characteristics of demographic security. All this has to be considered in devising regional policies and planning regional socioeconomic development at

the federal level. To this end, it is necessary to classify the regions by key demographic parameters that also serve as measures of regional demographic security. My attempt at such a classification is based on a juxtaposition of the three major indicators of demographic security — total fertility rate, life expectancy at birth, and net migration rate — and one auxiliary measure (the number of females per 1000 males). Table 3 and figure 6 show the results of such a classification — five types distinguished based on the level and features of demographic security.

 ${\it Table~3}$  Demographic security of the regions of Russia's western borderlands

	Demographic security indicators				
Region	Major			Auxiliary	
Region	Total fertility rate	Life expectancy	Net migration rate	Females per 1000 males	
1 — Nenets autonomous region	+	0	_	+	
1 — Arkhangelsk region	+	0		+	
1 — Murmansk region	0	-	_	+	
1 — Republic of Karelia	+			_	
2 — Leningrad region	-	+	+	+	
2 — Saint Petersburg	0	+	+	_	
3 — Kaliningrad region	0	+	+	+	
3 — Krasnodar region	+	+	+	0	
4 — Republic of Crimea	+	0	+	_	
4 — Sevastopol	0	_	+	+	
5 — Belgorod region	ı	+	0	0	
5 — Voronezh region	ı	+	0	_	
5 — Rostov region	-	+	0	0	
6 — Pskov region	+	_	0	0	
6 — Smolensk region	_	_	0	0	
6 — Bryansk region		_	_	_	
6 — Kursk region	0	0	0	_	

Legend: - unfavourable situation; 0 — satisfactory situation; + — favourable situation.

Prepared by the author based on [8].

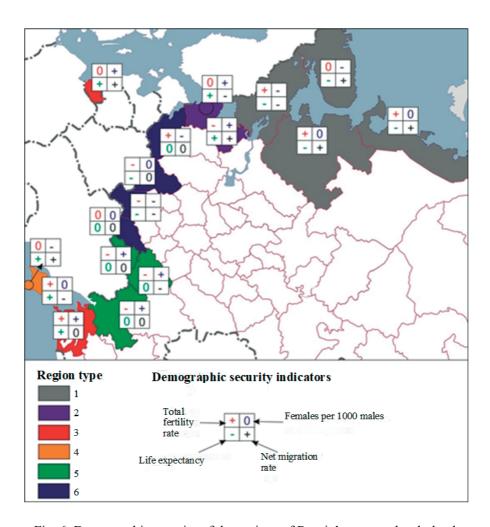


Fig. 6. Demographic security of the regions of Russia's western borderlands

Although all of the regions are characterised by a low level of economic security, there are significant cross-regional differences.

The first two types include the regions of the old western borderlands. Type 1 comprises the northern borderland regions that have a high or average birth rate, average or low life expectancy, negative migration, and a relatively low — with the exception of Karelia — female excess.

Type 2 is represented by Saint Petersburg and the Leningrad region. They are characterised by high life expectancy and positive migration, and a low or average birth rate. At the same time, Saint Petersburg has a large and the Leningrad a rather small female excess. In effect, the two regions comprise an integrated demographic system, where the differences in demographic indicators are accounted for by the peculiarities of

statistics recording. Some data relating to the Leningrad region (for instance, the number of births) can be recorded as pertaining to Saint Petersburg, and vice versa.

The Krasnodar and Kaliningrad regions (type 3) perform above average in three of the indicators and demonstrate an average result in one. The demographic situation in these regions is more favourable and the level of demographic security is higher than in the other areas of Russia's western borderlands.

Type 4 is also characterised by above-average demographic performance. It brings together the Republic of Crimea u Sevastopol — the two regions that became part of Russia quite recently — and have a high or average birth rate and positive migration. However, Sevastopol has a low life expectancy and the Republic of Crimea is characterised by a skewed sex structure.

The two other types comprise the regions of the new western borderlands.

The Belgorod, Voronezh, and Rostov regions, which comprise type 5, boast the second-best climate conditions across the western borderlands, beaten only by type 4. These areas have a low rate of natural increase, high life expectancy, slightly positive migration, and an average female excess (with the exception of the Voronezh region, where the excess is considerable).

Type 5 (the Pskov, Smolensk, Bryansk, and Kursk regions) is characterised by depopulation. The rate of natural decline is rather high. Over many years, local residents have been leaving the regions for the Moscow and Saint Petersburg agglomerations. Only the Smolensk region had positive migration in 2017.

When classified, these regions resemble linear clusters. The regions of each type are located along the border, one after another. The most favourable situation is observed in the regions comprising types 2—4, which represent the old western borderlands. The most alarming situation and the most acute demographic security problems are associated with the northern regions of type 1 (old western borderlands) and types 4 and 5 (new western borderlands). Lying at the border between the RSFSR and the other Union republics, these regions were considered the periphery in the Soviet times. Apparently, the cross-republic ties in the USSR were not as strong as they are usually believed to be. Otherwise, such connections would have contributed to the economic and demographic development of the relevant territories. The best demographic performance and the highest level of demographic security are associated with the regions located on the coasts of the Baltic and Black Seas. Evidently, the coastal position has a beneficial effect on the demographic and socioeconomic development.

# Conclusions

The polarisation hypothesis holds that, as the periphery, border regions face greater demographic challenges than inland areas—the more so if the border serves as a barrier rather than a contact zone. This is especially the case when inland regions turn into border ones or when the nature of relations with the countries on the other side of the border changes. Both considerations hold true for Russia's western regions, which became borderlands after the disintegration of the USSR. Some of the regions turned from inland into border ones and others are affected by the unpredictable changes in Russia's relations with the countries lying west of its national border.

The findings obtained suggest employing the following quantitative parameters in order to ensure regional demographic security:

- replacement or slightly above replacement fertility (a net reproduction rate of 1.0—1.1), which roughly corresponds to a total fertility rate of 2.1—2.3;
- net migration sufficient for the needs of regional economic development;
- a life expectancy of 80 years (77.5 years for males and 82.5 years for females).<sup>2</sup>

The auxiliary indicators should have the following values to correspond to the above parameters:

- a female to male ratio of 1040 to 1000;
- the group aged 0 to 15 accounting for 20% of the population, aged 16 to 59 for 55%, and aged 60 and over for 25% (2015: 17% 63% 20%).

Among the regions of Russia's western borderlands, those comprising types 2, 3, and 4 — namely, the Baltic and Black Sea coastal regions — demonstrate demographic performance that is closest to the above levels. The least favourable situation is observed in the regions of type 6 located at the borders with Ukraine and Belarus. For them, attaining the desired levels poses a considerable challenge. However, in all the regions, achieving the targets above will require a package of direct and indirect demographic policy measures.

The identification of type-specific demographic features of Russian western borderland regions and their juxtaposition with the demographic

<sup>&</sup>lt;sup>1</sup> The presidential decree of May 7, 2018, 'On the national target and strategic goals of the development of the Russian Federation until 2024' emphasises the need to 'ensure a stable nature increase in the population of the Russian Federation' [9].

<sup>&</sup>lt;sup>2</sup> As compared to a 4—5 year sex difference observed in most economically developed countries.

targets help to justify measures for regulating migration and natural change and contribute to better national and regional policies, as well as improved regional socioeconomic development strategies.

Alongside direct measures, demographic processes require that the indirect effect of eliminating disproportions and optimising the development of spatial socioeconomic systems (production, settlement patterns, socio-ecosystem, etc.) is considered. This requires the use of the geodemographic situation concept, which was developed as early as the 1970s—1980s [22—23] and has been adapted for recent regional studies [24—26].

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