Territorial features of the dynamics of population reproduction in the subjects of the Far Eastern Federal District[1]

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Abstract. The dynamics of the processes of population reproduction in the subjects of the Far Eastern Federal District for 1989-2019 is considered. The consequences of their changes are shown, which pose a threat not only to the demographic potential of the district, but also to its socio-economic development. According to the average variant of the demographic forecast, a further decrease in the resident population is expected.

Keywords: population dynamics, depopulation, migration outflow, age structure of the population, life expectancy, demographic forecast, Far Eastern Federal District.

The Far East is Russia's strategic priority in the XXI century. In this regard, demographic policy should ensure not only stabilization, but also the growth of the resident population in the constituent entities of the Far Eastern Federal District (FEFD), the creation of a sustainable growth in the birth rate and life expectancy, a reduction in mortality, a decrease in migration outflow, an increase in migration attractiveness for potential migrants and formation of migration
population influx.

As of January 1, 2020, 8169.2 thousand people[2], or 5.6% of Russians, lived in the Far East, with the huge scale of its territory (6952.6 thousand km^2). The Russian Far East (within its new borders) is heterogeneous. It includes the north (the Republic of Sakha (Yakutia), the Chukotka Autonomous District, the Magadan and Sakhalin Oblast, Kamchatka Krai), the south (Primorsky and Khabarovsk Krais, the Amur Oblast, the Jewish Autonomous Oblast) and the southwest (the Republic of Buryatia, the Zabaykalsky Krai). These territories have differences in demographic development due to the peculiarities of development, economic-geographical and transport-geographical location, spatial organization of settlement, and the level of economic development.

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[1] The research results presented in the article were obtained within the framework of the state assignment of the Ministry of Education and Science of the Russian Federation (the topic "Geographic and geopolitical factors in inertia, dynamics of development of different-ranked territorial structures of the economy and settlement of Pacific Russia", № AAAA – A116110810013-5)

[2] In accordance with the Decree of the President of the Russian Federation dated November 3, 2018 № 632 "On amendments to the list of federal districts approved by the Decree of the President of the Russian Federation dated May 13, 2000 № 849", the Republic of Buryatia and the Trans-Baikal Krai were included in the Far Eastern Federal District.

The population density (1.2 people/km^2) is the lowest among the federal districts; significantly lower than the average Russian level (8.6 people/km^2). The population is distributed extremely unevenly across the territory. The highest density (11.5 people/km^2) is in Primorsky Krai, while in the Republic of Buryatia it is 2.8 people/km^2, Amur Oblast - 2.2 people/km^2, in the Republic of Sakha (Yakutia) and in In Magadan Oblast, it does not exceed 0.3 people/km^2, and in the Chukotka Autonomous Okrug - 0.1 people/km^2.

This heterogeneity of the Far Eastern territory requires different approaches to solving demographic problems. The northern territories are distinguished by harsh climatic conditions and are practically unsuitable for the existence of an extensive network of settlements. Here it is advisable to have a network of strong points, and compensate for the lack of labor resources on a rotational basis, including from the southern regions of the Far East [1]. Economically, the northern and southern territories should be linked through forms of rotational migration, while the south should be considered as a springboard for the effective development of the north.

According to the 1989 All-Union Population Census, 10,440.4 thousand people (7.0% of the population of the Russian Federation) lived in the FEFD, in 2002 - 8829.4 thousand (6.1%), in 2010 - 8372.3 thousand (5.9%), and in 2019 only 8169.2 thousand people (5.6%). The most intense population decline occurred in the period 1989-2002, when the district lost 1,611 thousand people, or 15.4%. During this period, the urban population decreased (by 1,182.1 thousand people, or 15.6%). The rural population also decreased, but to a lesser extent than the urban population (by 428.6 thousand people, or 15.0%) (tab. 1). The northern subjects of the Federation during this period lost 740.4 thousand people or 26.1%, while the southern ones - 516.5 or 10.1%. Significant reductions in the resident population were noted in the Chukotka Autonomous Okrug (67.2%), Magadan Oblast (53.4%), Kamchatka Krai (24.0%), Sakhalin Oblast (23.0%), Transbaikal Krai (20.5%). In Primorsky and Khabarovsky Krais, the Republic of Sakha (Yakutia), and the Republic of Buryatia, the rate of population decline was slower than in the Far East as a whole.

In the period between the population censuses of 2002-2010, the population decreased by 457.1 thousand people, or 5.2%, while the number of urban residents decreased to a greater extent than rural (-6.3% versus -2.3%). Against this background, the Republic of Sakha (Yakutia) stands out: the northern subject of the Federation, where some population growth is noted. In the north of the Far East, as well as in Primorsky Krai and the Republic of Buryatia, there is an increase in the rural population.

Table 1

Dynamics of the population of the Far East [2.5]

	Population, thousand people				Decrease (growth) of the population (%)			
	1989	2002	2010	2019	1989-2002	2002-2010	2010-2019	1989-2019

Far East	**10440.4**	**8829.4**	**8372.3**	**8169.2**	**-15.4**	**-5.2**	**-2.4**	**-21.7**
north	***2831.7***	***2091.3***	***1986.2***	***1963.7***	***-26.1***	***-5.0***	***-1.1***	***-30.6***
The Republic of Sakha (Yakutia)	1094.0	949.3	958.5	972.0	-13.2	+1.0	+1.4	-11.2
Chukotka Autonomous District	163.9	53.8	50.6	50.3	-67.2	-5.9	-0.6	-69.3
Magadan Oblast	391.7	182.7	157.0	140.1	-53.4	-14.1	-10.8	-64.2
Kamchatka Krai	471.9	358.8	322.1	313.0	-24.0	-10.2	-2.8	-33.7
Sakhalin Oblast	710.2	546.7	498.0	488.3	-23.0	-8.9	-1.9	-31.2
south	***5118.0***	***4601.5***	***4307.0***	***4159.9***	***-10.1***	***-6.4***	***-3.4***	***-18.7***
Primorsky Krai	2255.9	2071.2	1956.5	1895.9	-8.2	-5.5	-3.1	-16.0
Khabarovsk Krai	1597.7	1436.5	1343.9	1315.7	-10.1	-6.4	-2.1	-17.6
Amur Oblast	1050.3	902.9	830.1	790.0	-14.0	-8.1	-4.8	-24.8
Jewish Autonomous Oblast	214.1	190.2	176.5	158.3	-11.2	-7.2	-10.3	-26.1
southwest	***2490.7***	***2136.6***	***2079.1***	***2045.6***	***-14.2***	***-2.7***	***-1.6***	***-17.9***
The Republic of Buryatia	1038.2	981.3	972.0	985.9	-5.5	-0.9	+1.4	-5.0
Transbaikal Krai	1452.5	1155.3	1107.1	1059.7	-20.5	-4.2	-4.3	-27.0

In general, over the past thirty years, the population in the Far East has decreased by 2,771.2 thousand people, including the urban population - by 1,629.2 thousand people (71.7%). The main outflow of the population (958.1 thousand people, or 42.2%) occurred in the southern regions of the Federation (in Primorsky Krai - by 360 thousand people, Khabarovsk Krai - by 282, in Amur Oblast - by 260.3 thousand people). Although the economies of these constituent entities of the Federation are more differentiated, it was these territories that experienced the greatest decline in employment in labor-intensive manufacturing industries, which experienced the maximum structural shock to demand after 1991 [4].

The decline in the population in the Far East occurs both due to the migration outflow of the population (in 1991, the outflow of the population for the first time exceeded its natural increase), and due to the negative natural increase. According to P.A. Minakir. the reasons for the outflow of the population were objective: firstly, the reduction in the scale and change in the structure of economic activity in the district in the 1990s, and secondly, the desire to protect their property rights in the new states (the previous guarantees of the preservation of the right to housing for those who left for the Far East in their "native" areas were automatically lost by immigrants from the former Soviet republics), thirdly, the loss of confidence that the incomes received in the Far East

are a guarantee of savings for future life. Previously, it was this guarantee, and not even the current level of nominal income, that was the incentive for migrants coming to the region [3, p. 1025].

In 2019, population growth was noted in three regions: in the Republic of Sakha (Yakutia) due to the excess of the natural increase in population losses as a result of migration processes. In the Republic of Buryatia and the Chukotka Autonomous Okrug due to natural and migration growth.

In addition to the reduction in the resident population, its qualitative indicators have changed. First of all, due to the aging of the age structure. In 1989, in the FEFD, the share of the population younger than the working age was 2.7 times higher than the share of the population older than the working age (tab. 2). Since 2008, the share of people over 60 years old (17.7%) in the total population exceeds the share of the youth population (17.3%) both in the whole district and in individual subjects: in Primorsky Krai, Sakhalin Oblast. From 2011 to the present, this trend continues both in the FEFD as a whole, and in Kamchatka Krai, Magadan and Sakhalin Oblasts, Khabarovsk Krai, Amur Oblast, Jewish Autonomous Oblast. The share of the population over the working age in 2019 was 24.1% of the total population (the largest indicator of all subjects of the FEFD). In the Far Eastern Federal District, as well as in Russia as a whole, the aging of the population is determined by the long-term trend of declining birth rates.

Table 2

The structure of the population of the Far East by main age groups [2,5]

	1989			2019		
	total	urban	rural	total	urban	rural
Russian Federation						
- younger than able-bodied	24.5	23.8	26.4	18.7	18.3	19.9
- able-bodied	57.0	59.0	51.5	56.3	57.1	54.2
- older than able-bodied	18.5	17.2	22.1	25.0	24.6	25.9
Far East						
- younger than able-bodied	28.9	27.3	33.3	20.8	19.8	23.4
- able-bodied	60.2	61.9	55.7	57.8	59.1	54.5
- older than able-bodied	10.9	10.8	11.0	21.4	21.2	22.1

Another consequence of the low birth rate was the entry of the FEFD since 2005 (the Russian Federation since 2007) into a long period of decline in the working-age population, the rate of which accelerated after 2010. This was due to the fact that the replenishment of the working-age contingent was due to the small number of those born in the post-Soviet period while leaving the working age of numerous births in the post-war period, the birth rate increased. It was also complicated by the migration outflow of the population of this age group from the FEFD (tab. 3). In 2019, the working-age population in the Far East was 1,559.3 thousand people, or 24.8% less than

in 1989 (in the Russian Federation - by 1,068.7 thousand people, or 1.3%). That is, the FEFD lost the population of this age group more intensively than Russia as a whole.

Table 3

Age composition of migrants from the Far East, %

	Aged migrants					
	younger than able-bodied	able-bodied	older than able-bodied	younger than able-bodied	able-bodied	older than able-bodied
	2002			2019		
	Arrived					
Russian Federation	14.3	72.8	12.9	18.8	70.3	10.9
Far East						
north	16.0	75.0	9.0	17.0	74.6	8.4
south	16.3	76.1	7.6	14.7	77.0	8.3
southwest	15.4	74.6	10.0	16.4	75.1	8.5
	17.3	74.7	8.0	18.4	73.8	7.8
	Retired					
Russian Federation	14.3	73.2	12.5	19.2	69.8	11.0
Far East						
north	16.6	73.8	9.6	17.6	72.3	10.1
south	15.9	73.0	11.1	15.2	73.6	11.2
southwest	16.1	74.3	9.6	17.0	73.3	9.7
	18.1	73.9	8.0	18.4	73.5	8.1

The most important feature of the age structure of the northern FEFD subjects in comparison with the average Russian and Far Eastern indicators is a high proportion of the working age population, a low proportion of pensioners and, accordingly, a higher proportion of children in the total population. Similar trends in the change in the age structure of the population are characteristic of almost all Russian subjects: the proportion of children is decreasing, while the proportion of the elderly population is growing. At the same time, the scale of these changes in the northern subjects of the FEFD is higher than the Far Eastern and average Russian indicators, and the proportion of people over working age is significantly lower in comparison with the average Russian level.

Among the federal districts, FEFD has the lowest rates, both in terms of life expectancy (70.22 years, 2019) and in absolute (2.62 years) and relative (3.9%) rates of change. For 1989-2019, the life expectancy of the Far East increased by 2.62 years. At the same time, in the district itself, the indicators of individual subjects of the Federation are significantly differentiated. Only in the Republic of Sakha (Yakutia). Kamchatka Krai, the Republic of Buryatia, Sakhalin Oblast, Khabarovsk Krai, Magadan Oblast, the growth in life expectancy exceeded the Far Eastern level,

and the Chukotka Autonomous Okrug occupies the penultimate place in the district and 85th among Russian subjects (68.09 years), 86th place belongs to the Jewish Autonomous Oblast (68.08 years).

Despite the positive dynamics over a thirty-year period, in all Far Eastern regions, life expectancy indicators in 2019 exceeded the level of 1989-1990, mortality in the FEFD remains high.

In all Far Eastern regions, there is a decrease in the absolute number of births. This process will continue in the coming years, since there are objective reasons for the decline in women of reproductive age due to the low birth rate in the 1990s.

In the Far East, due to the young age structure of the population and ethnic composition, the birth rate exceeds the national average. The number of births per 1000 population in 2019 was 11.1 ppm, with the national average of 10.1. The subjects in which the value of the coefficient turned out to be lower than the average for the Russian Federation were Primorsky Krai (9.6 ppm) and Magadan Oblast (9.1 ppm). Natural population growth was recorded in three regions: the Republic of Sakha (Yakutia), the Republic of Buryatia, and the Chukotka Autonomous Okrug. In Transbaikal Krai, Kamchatka Krai, Sakhalin Oblast, the balance of natural movement was negative, but the relative population losses were less than the national average. And only in Primorsky Krai, Amur Oblast, Jewish Autonomous Oblast, Magadan Oblast, Khabarovsk Krai, the rate of natural loss exceeded the average Russian indicator.

In 1989-1990, a number of Far Eastern subjects had a total fertility rate (TFR) higher than the level of simple reproduction. These are the Republic of Buryatia, the Republic of Sakha (Yakutia), Transbaikal Krai, Amur Oblast. The rural areas of both the FEFD in general and all subjects, with the exception of Kamchatka Krai, had TFR significantly higher than the level of simple reproduction. The growth in the total fertility rate was noted in 2012-2016, but by 2019 in all constituent entities of the district this indicator was less than in 1989-1990.

Among the factors that hinder the achievement of expanded reproduction of the population in the Far East, there is a high level of infant mortality and mortality of the working-age population. In 2019, the infant mortality rate (5.7), which is higher than the national average (4.9), decreased by 1.7 times over the period 2013-2019. But although there is a positive downward trend in the indicators of infant mortality, its overall level is still high compared to the national average. All Far Eastern regions are at risk (with a high level formed by the Chukotka Autonomous Okrug and the Jewish Autonomous Oblast), with the exception of the Republic of Sakha (Yakutia), Khabarovsk Krai, Sakhalin Oblast, which is due to the improvement in the provision of medical services to women and newborns.

The mortality rate of working-age residents of the Far East (593 cases per 100 thousand people of the corresponding age) is 1.3 times higher than the national average (470). The only region in

which the number of deaths of working age from all causes over the past five years has decreased to below the national average is the Republic of Sakha (Yakutia). Chukotka Autonomous Okrug and Jewish Autonomous Oblast have the highest mortality rates in FEFD - 801.3 and 388.7, respectively. The supermortality rate of the working-age population, especially men, remains very high.

Thus, since the Far East is distinguished from other Russian territories by spatial heterogeneity and significant economic differences in ensuring favorable and comfortable living conditions for not only the arriving, but also the local population, the achievement of positive trends in regional demographic dynamics is possible only with an active state policy.

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